Tunity, a Singapore Technologies Electronics invested company/Alexandra Hospital

Patient Tracking

Case Study

Wavetrend Channel Partner

Tunity, a Singapore Technologies Electronics Limited (STE) invested company, and STE, a unit of ST Engineering, is a leading provider of electronics and information communications technology solutions. STE delivers innovative solutions to government, commercial, defense and industrial customers worldwide. It specializes in the design, development and integration of advanced electronics systems such as broadband radio frequency and microwave communication, e-government solutions, rail and traffic management, real-time command & control, training and simulation, intelligent building management, and information security and mobile commerce solutions.

Business Challenge

The spread of severe acute respiratory syndrome (SARS) caused significant changes in Singapore's healthcare system, particularly in the way that hospitals handled infection control.

Singapore's Ministry of Health asked the Defence Science & Technology Agency (DSTA) to explore ways of tracing contacts within a hospital should there be a suspected SARS case. In the event of a SARS patient being admitted to a healthcare facility, officials needed to identify and notify anyone who came in contact with that patient in a timely fashion.

In 2003, Alexandra Hospital in Singapore was the only public hospital that had no documented intra-institutional spread of the illness. The hospital experienced a two-fold surge in patient volume, and with its open ward design had to institute tough policies to minimize the risk of a SARS outbreak.

DSTA chose Alexandra Hospital to test a new RFID-based system that would help automate the process of tracking and recording patient contacts.

Solution

DSTA worked with STE to develop an automated contact tracking system for Alexandra Hospital's accident and emergency (A&E) department. The hospital sees approximately 250 patients in the A&E department each day, with each patient allowed one visitor. In addition, there are more than 30 doctors and nurses in the department, meaning the system would need to track more than 500 people every day.

All staff, patients and visitors are issued identification badges outfitted with Active RFID technology from Wavetrend. All Readers installed in the ceiling track the movement of these badges throughout the day.

STE developed a software system that allows the hospital to track when a person enters or leaves a specific zone in the facility. Hospital staff can access the application via a Web-based portal on the hospital's intranet, and query a database for information on a specific person. In the event that a patient is diagnosed with SARS, the hospital can immediately determine with whom that person had contact.

Since the incubation period of the SARS virus is 10 days, the system is set to store information on visitors for 21 days. This ensures that contact data will remain available well after the end of the incubation period. The confidential information is then deleted.

Previously, contact tracing involved asking SARS patients where in the hospital they had been, and on what days. Then, the hospital had to manually go through its duty rosters and ask staff it they had also been in those areas at the same time.

The automated system has eliminated this inefficient and inaccurate process, and provided reliable contact data that can help prevent the spread of SARS.

The system was rolled out quickly, with all validation and fine-tuning conducted during the pilot stage. After a successful trial at Alexandra, the system was deployed at the National University Hospital.

ROI

- Provides real-time record of patient and staff contacts
- Helps prevent spread of SARS
- Provides tracking information without interrupting flow of patients or staff

Customer Comments

"We used to do it in a manual way and it took two days to track down all contacts. But with these devices the information should be out almost at the press of a button." Dr. Francis Lee, Head of Emergency Medicine, Alexandra Hospital

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