

Taiwan's Chang-Gung Hospital Uses HF RFID to Track Surgery

The system not only helps ensure patients get the correct procedures and medication, but also saves time.

By Beth Bacheldor

Jan. 9, 2007—A Taiwanese hospital is using passive RFID to help correctly identify surgical patients and track their operations to ensure they get the correct procedures and the proper medications at the right time.

Chang-Gung Memorial Hospital (CGMH) in Taipei, Taiwan, uses RFID-enabled patient wristbands created by Precision Dynamics Corp. (PDC). The plastic bands are embedded with 13.56 MHz passive RFID inlays that support ISO standard 15693. Each read-write tag has enough capacity to store a patient's name, medical-record number, gender, age and doctor's name, and additional information can also be stored on the tag if needed. The tag's ID number is then associated with patient records stored in the hospital's back-end information system.

The hospital began the RFID implementation nearly two years ago for its surgical department, and is now expanding it to its neonatal care unit, emergency room and in-patient management services, according to Mingpey Chou, RFID lead for Hewlett-Packard (HP) in Taiwan. CGMH contracted HP to help design and implement the system, which utilizes HP iPAQ handheld pocket PCs, equipped with RFID interrogators.

The primary goal of the RFID initiative is to improve patient care and safety, Chou says. "Patient safety is the most important and uncompromised issue for hospitals," he says. Many hospitals are defining patient-care standard operating procedures (SOPs) that call for verbal confirmations and physical verification of patients and their medical treatment, and many conduct intense training. However, Chou says, these "mechanisms are human-centric and cannot guarantee 100 percent SOP compliance."

Chou adds, "RFID is an effective technology that hospitals can use as a secondary technology protection to complement current human processes. With good integration to clinical processes, RFID can help enforce 100 percent SOP compliance, provide real-time alerting and collect meaningful accurate data for management."

CGMH's surgical patients are issued the RFID wristbands upon arrival at the operating room's lobby. An OR nurse scans each wristband using an RFID-enabled iPAQ to capture the patients' arrival, and to verify that every patient is in the correct OR. The nurse can also access a patient's bracelet to pull up detailed medical orders on the hospital's information system. The wristband is then scanned five subsequent times: when anesthesia is administered, after the surgeon arrives, when the surgery starts and ends, and as the patient leaves the OR.

Irwin Thall, RFID manager for PDC, says CGMH's RFID system has a small footprint that is ideal for use in the operating room, where space is often at a premium. "When you are doing surgery," Thall explains, "it is hard to get any extra pieces of equipment around the patient. With this system, you use a small handheld and

can get all the information you need. The technology reduces the clutter, frees up room around the patient, but still allows the doctors and nurses the ability to get critical information about the patient instantly."

RELATED_ARTICLES According to Chou, once a tag is used and a patient leaves the hospital, the hospital destroys the tag to protect the patient's privacy and avoid any possibility of infection. "The goal is to use one tag per patient for protection during the entire hospital stay," he says.

The RFID system has met all the hospital's expectations, Chou states. Since the implementation, the RFID wristbands have been 100 percent accurate in enabling patient identification, while saving CGMH medical staff an average of 4.3 minutes per patient in performing patient identification and verification processes.

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