



Jacobi Medical Center Gains Healthy ROI Using **Smart Band**[®] RFID Wristband System



Photo inserts courtesy of Siemens Business Services

**POSITIVE
PATIENT ID
CASE STUDY**

RFID (radio frequency identification) in healthcare is gaining momentum as many pilot programs are proving successful. North Bronx Healthcare Network's (NBHN) Jacobi Medical Center (Bronx, NY), working with systems integrator Siemens Business Services (SBS) (Norwalk, CT) and Precision Dynamics Corporation (PDC) (San Fernando, CA), implemented an RFID wristband system for patient identification and medication administration, replacing Jacobi's manual process of identifying patients, in its two acute-care departments. The RFID system improved patient safety and care, increased productivity, and helped cut costs.

The system consisted of an integrated RFID application, developed by SBS, which connected Jacobi's electronic medical records, lab systems, and billing system. Jacobi's existing computerized physician order entry system allowed for a seamless RFID implementation. Tablet PCs were embedded with SBS RFID software and used as hand-held readers for RFID wristbands provided by PDC. PDC's Smart Band[®] RFID wristbands include a 13.56 MHz RFID inlay from Texas Instruments (Dallas, TX).

"The RFID wristbands were an essential part of the Jacobi RFID implementation," said Irwin Thall, RFID Manager for Healthcare at PDC. "They allow for peripheral applications to connect with one another and communicate accordingly. Without the wristbands, the system would not be functional—they are the glue that keeps everything together."

Increased Productivity & Cost Savings

The Tablet PCs scanned the patient's RFID wristband prior to medication administration. The RFID wristband inlays were encoded with a unique patient ID number, and once scanned, the patient's medical file was instantly accessible at bedside.

Daniel Morreale, Chief Information Officer for NBHN at the time of the Jacobi implementation, stated that "the RFID trial saved one hour per nurse per shift. If the application is rolled out network-wide, it could potentially save \$1 million a year, but more importantly this creates two to three hours during every nursing shift for additional patient contact and care."

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*—Daniel Morreale
Former Chief Information Officer for NBHN*



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The old process required staff to manually enter the patient's medical record number printed on the wristband, after medication administration rounds, into the hospital information system using computers located at nurses' stations. This process took staff longer to complete and was prone to more errors compared to using RFID.

"With the new system, staff no longer had to return to nurses' workstations to get patient data, and accurate information was now available without any lag time," said Jerry Moy, senior client executive at Siemens Business Services. "Also, doctors and nurses used the new RFID system for wireless database access to order lab tests, enter notes on treatment, and update medication administration right from the bedside."

Quality of patient care and safety has improved since hospital staff was able to gain access to patient records quicker for better service. "Clinicians have endorsed the pilot program and want it expanded because it makes the handling of

administrative tasks simpler than with the paper-based system," said Moy.

RFID is a read/write technology which allows medical personnel to instantly update



patient information. RFID tags can be encrypted to protect the patient's information and comply with industry

regulations, such as HIPAA. Also, unlike bar codes, RFID is non line-of-sight and can be read through bedcovers and clothing, making it less disruptive for patients, especially when they are sleeping.

Ultimate ROI: Improved Patient Safety

The introduction of RFID at Jacobi reduced the bulk of its paper forms while also ensuring that the information used by its medical staff was always updated. The RFID system has the ability to dramatically reduce errors in drug prescription, increase hospital security and help the organization reach its goal of preventing patient identification mix-ups.

The RFID pilot was so successful that staff did not want to give back the equipment after the two month trial. "We went in to retrieve the equipment and the staff refused to give it back," said Moy. "The system's ROI is evident in cost savings, but more importantly, in improved patient safety."

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