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# SunnyBrook Health Sciences Center Improves Patient Care, Family Communication and Operations Using FEIG RFID Technology

With hospitals now limiting family member access to hospitals, it has become more important to use technology to keep family members updated on patient progress. It is a winning combination when the same technology can also improve operations and patient care.

Tracking how much time patients spent in each area of the surgery department was a manual and time-consuming process for SunnyBrook Health Sciences Center. Yet the information was important for utilization reporting, staffing models, scheduling and patient flow…all critical elements for improving patient experience. In critical situations when every second counted, manual processes made fast decisions nearly impossible.

Family members needing updates on patient progress would contact caregivers, taking up valuable patient care time.

# Dreaming Big

The OR Information Management Services (ORIMS) team imagined a RFID system that would automate patient progress through each stage of surgery in SunnyBrook's 19 operating rooms. It would automatically track the patient from reception, to registration, to pre-op preparation, to the operating room, to post-operative recovery and into the surgical short-stay unit. It would securely and automatically update family members on the patient's progress.

With automation, caregivers would be able to give the responsive care that patients need. Surgeons and administrators could view real-time workflow summaries and utilization data to help forecast and identify bottlenecks and resource needs. Families would have real-time status information for their loved one.

# A Journey to Solutions

To make the dream a reality, the ORIMS team began to research potential vendors. They reached out to RFID Canada and FEIG ELECTRONICS to evaluate the hospital's needs, recommend solutions, determine strategy and test system configurations. ORIMS, RFID Canada and FEIG Electronics comprised the primary project team.

The team first considered using wristbands for the RFID tags, but rejected the idea first because of cost, but also because the patient's arm position could keep the readers from picking up a signal when the gurney passed a checkpoint.

After more consideration, the tags were affixed to the binder containing the patient's chart. The binder was a perfect choice because it was always with the patient. The team tested various locations for the tags and found that attaching them to the front *and* back of the binder was important in case the attendant held the binder under an arm.

# Putting It All Together

With the tag location determined, antennas were the next consideration. At each entry door and checkpoint in the surgical unit, the team installed three antennas. During pilot testing, they adjusted antenna position frequently. Some antennas worked best vertically, others horizontally, and still others read best when affixed to the ceiling. They installed barriers to prevent staff from running into wall-mounted readers.

After significant trial and error, the RFID system reliably collected real-time data as each tag passed an antenna and transmitted the data to a reader.

The next step was to create a system so family members could follow the patient's progress. ORIMS created a custom software program to track patients and report utilization data. The team installed monitors in the waiting area that displayed a unique identification number for each patient instead of a name to protect privacy. Family members could follow the patient's progress without staff involvement.

# Stakeholder Contributions

During the four-month project, the ORIMS worked with nurses to analyze their workflow process and make sure the system met their needs. They surveyed family members to determine what they most wanted to know when a loved one was in surgery. Family member input led to the development of a "Find My Patient" app that became available from a screen or kiosk.

# Stunning Results

The project was resoundingly successful.

- The hospital had valuable data that improved procedures, scheduling, staffing and overall operations.
- Retiring the old manual system saved $100,000 a year in maintenance costs.
- Since personnel no longer had to spend time entering information into the computer and had fewer questions from family, nurses and other staff members had more time to focus on patient care.
- The manual system of counting patients in the surgical short stay unit provided outdated data because of shift changes. The new RFID system provided administrators with real-time data that made more efficient use of the 14 available beds.
- After proving the concept for two years, the hospital's executive management team gave approval for ORIMS to expand the solution.

For additional details and equipment descriptions, read the full case study.