

Toronto-Area Hospital Kicks Off Asset-Tracking Pilot

At Hamilton Health Sciences's acute-care center at McMaster University, the nursing ward is using active RFID tags to track IV pumps and other high-value mobile equipment.

By Mary Catherine O'Connor

Nov. 27, 2006—[Hamilton Health Sciences](#), a family of hospitals serving 2.2 million residents in the Canadian province of Ontario, has begun a small-scale RFID technology pilot at its acute-care center on the [McMaster University](#) campus in Hamilton. The hospital and lab began developing the pilot earlier this year, after Pankaj Sood, the center's commercialization manager, started reaching out to local businesses he believed could benefit from RFID technology.

McMaster recently launched the McMaster RFID Applications Lab (MRAL) (see [Show Report: RFID Journal LIVE! Canada](#)). The pilot project is a result of collaboration between Hamilton and the lab. MRAL is Canada's first major academic RFID research and consulting facility. It provides applications-oriented RFID research and development, through collaboration between members of McMaster's academic community and those in the business arena, and addresses social-policy issues that can result from RFID technology deployments.

[EPCglobal Canada](#) and a number of technology companies support the lab. These firms include [Hewlett-Packard](#), [Deloitte](#), [Sun Microsystems](#), and RFID technology vendors [IPICO](#), [RF Code](#) and [Lost Recovery Network \(LRNI\)](#).

"We had heard from a number of folks who were talking about RFID, and we were reading about potential applications [of the technology]," says Bill MacLeod, Hamilton's vice president of research and corporate development. MacLeod's responsibilities include assisting in physical planning and redevelopment projects at the hospitals. "We thought [this pilot] was a good way to get in and learn about the technology and [determine] the business case for using RFID. And that is what the MRAL offers."

MacLeod's first task in helping launch the pilot was to identify a department within a Hamilton hospital where staff were interested in learning and testing the technology, along with an application that could benefit that department's staff and the hospital's overall operation. He found both in the nursing unit at an acute-care center that happens to be on the McMaster campus, not far from the MRAL building.

"The nurse manager of the unit was keen on learning about the technology," says MacLeod. "The manager knew the pilot was going to be a learning experience for the unit, and nursing staff would need to be involved." The nursing unit, along with Deloitte representatives and MacLeod and Sood's team at the MRAL, decided they would focus the trial on tracking intravenous pumps and other high-value mobile devices.

According to MacLeod, hospitals no longer hang IV bags on racks, which feed medicine into the patient's bloodstream through gravity. Instead, they use mechanical pumps that can be programmed to regulate the flow of medicines or fluids. Due to the high cost of the IV pumps, however, Hamilton's acute-care center does

not station one at each bedside. Instead, employees wheel the pumps to locations throughout the nursing ward that need the devices. As a result, it sometimes takes nurses time to locate an available pump—time they could otherwise use to administer care.

For the pilot, the staff has tagged approximately 200 of these pumps, as well as diagnostic equipment and other high-value mobile assets in the nursing ward. Thirty-four antennas have been deployed throughout the ward, connected to four interrogators via multiplexing devices provided by LRNI. The antennas read RFCode 303 MHz active tags as they pass by, while a standalone software program shows the nursing staff the location of the tagged asset, either by room number or—in cases where the assets are in a very large room—by a zone within that room.

Once the hospital staff determined the level of granularity it wanted for tracking the assets, Sood says, lab engineers tested RFID tags from a number of different technology vendors before deciding on RFCode's active tags and readers. Since the onset of the project, Sood and his team have also worked with Hamilton's IT department director and some of his staff, who helped design the system.

The pilot started just two weeks ago, says Sood, so it is too early to provide any metrics on tag readability or overall performance. To that end, the hospital will continue to test the current system until April. Sood says MRAL might also work with the hospital to test other RFID technologies—specifically, tags that transmit data over Wi-Fi—and compare the results of the two systems.

RELATED_ARTICLES Primarily interested in developing a business case for using RFID, MacLeod says, the hospital will examine the technology's impact beyond just this particular asset-tracking pilot. MRAL and Deloitte are working with MacLeod and his team to develop the business case for using RFID as an enabling technology for better business intelligence solutions in hospitals. "The upfront cost of putting in an RFID system is major, and you may not be able to fully justify that on just asset tracking," he explains. "Our intent is to look beyond that, to see what business case would come from further applications of the technology, such as infant tracking or tracking adult patients with wandering problems."

MacLeod says monitoring the whereabouts of hospital staff, through RFID-enabled personnel badges, is another area the hospital might consider. However, Sood notes, any testing of such an application would occur only after MRAL collaborates with hospital personnel to work through any related privacy issues. He adds that his lab plans to convene a team of professionals from different disciplines, including McMaster's public-policy departments, the hospital's labor union, RF engineers and others. This team will address privacy concerns with respect to personnel location monitoring.

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