Medixine Tests System for Alzheimer's

The Finnish company combines RFID and cellular phone technology to help make sure Alzheimer's patients take the drugs they need.

By Jonathan Collins

Sept. 27, 2005—Medixine, a Finnish company specializing in disease management, is testing a new communications system using RFID and mobile phones to help make sure Alzheimer's patients take their medication. The trial will reportedly last three months and involve up to 30 patients.

"For Alzheimer's patients, it is a big challenge to ensure they meet their drug compliance, but in early stages, patients can learn to use this system, and it provides a very light [unobtrusive] way of ensuring daily compliance," says Tapio Jokinen, CEO of Medixine Oy, in Espoo, Finland.

The system uses what the company calls an RFID communication board. Measuring approximately 8 inches by 12 inches, the board can be fitted with up to six near-field communications (NFC) RFID tags. NFC technology aims to provide a standard, low-cost way for a range of NFC-enabled objects and electronic devices to communicate with other devices over short distances.

During the three-month trial, which is already in progress, each patient is issued an NFC-enabled cell phone and an RFID communication board with a template customized to his or her medical requirements. The template slides in a slot over the board and is printed with symbols positioned over its RFID tags. In the trial, three symbols and three tags are being used. One symbol confirms that medication has been taken, another asks for someone to call for a chat (e.g., "I feel lonely"), and the third requests an immediate call in response to an emergency. When the patient touches the NFC-enabled phone to a symbol, the phone reads the unique ID number of the tag beneath the symbol and transmits that number over the cellular network to Medixine's medication management server application.

After taking medication, a patient is supposed to touch the corresponding symbol on the board with an NFC reader-enabled Nokia cell phone especially designed for the project. The phone reads the RFID tag below the symbol, then sends a wireless message to the Medixine-developed server application, confirming that the specific medication had been taken. If a patient does not touch the symbol on the board, then no message is sent, and the system assumes the patient failed to take the prescribed dosage and sends a reminder in the form of a prerecorded voice or text alert, either to the patient or to a relative or caregiver. According to Medixine, if Alzheimer's patients are introduced to the system early in their development of the disease, they can be taught to remember to touch the board with their cell phone after taking their medicine.

The trial is being conducted with the support of the Alzheimer Society of Finland, drug company Pfizer, cell phone manufacturer Nokia and Finnish wireless service provider Elisa.

Should the trial prove successful, Medixine intends to launch the system in Finland, France and the United Kingdom as a managed service. "The most expensive part of the system is the handset, but we envisage

charging around 20-30 euros a month for the phone, the board and all the software and service support," says Jokinen.