



## The Star-Ledger

### A silent eye checks in on the elderly

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When Dorothy Landow wakes at 7 each morning, QuietCare takes note.

When she goes to bed about 11 p.m. in her small apartment at the Brighton Gardens assisted-living center in Florham Park, QuietCare tracks that as well.

By detecting movement and changes in air temperature, QuietCare -- a motion-sensor system -- works to keep senior citizens safe, alerting caregivers to possible falls or unusual behavior that could indicate a health problem.

QuietCare's inconspicuous monitors are now being used in private homes and in about a dozen assisted-living facilities in New Jersey, including Brighton Gardens, which began offering the program in May, said Daniel Gold, chief operating officer of Living Independently Group Inc. of New York City, which produces QuietCare monitors.

The sensors mounted in an apartment broadcast to the staff of a facility information that could mean the difference between someone getting help in time, or suffering alone, Gold said.

But the monitoring system may also broadcast intimate details about a person's life, including how long they spend each day in the bathroom, what time they get up in the morning and even how often they open their refrigerators.

As more monitoring systems come into use, gerontology and security experts have begun to ask not only how they can help people live longer, better lives, but also if people will want to use them.

"We don't yet know how much people are willing to trade off that increased security ... the knowledge that someone knows you're up and about, versus your privacy," said Lisa D'Ambrosio, a research associate at AgeLab, a facility at the Massachusetts Institute of Technology that researches ways to improve life for older adults.

"Maybe Mom doesn't want you to know that she got out of bed at 10 instead of 8:30 that morning," she said.

QuietCare is part of the growing field of "gerontechnology." At Brighton Gardens, the monitors resemble a set of air fresheners, mounted chest-high next to each doorway in the apartment.

The devices, which vary in cost depending on the facility, can detect a person 20 feet away in a comfortable room temperature of about 68 degrees Fahrenheit, but the system works mainly by detecting motion passing from room to room.

When movement is sensed, the information is sent to a base station connected to a telephone line monitored by a private security company, Gold said.

The information is uploaded regularly to a server and a private Web site which caregivers, children, aides

and nurses can check. If the system perceives a possible emergency -- for example, there is no movement from someone in the bathroom for more than 10 minutes, if he or she normally only takes five minutes and that is what is programmed into the system -- the information is transmitted immediately to caregivers via pager, e-mail or text message.

When the system is first installed, it collects data for a few days to create a baseline, Gold said. Then, it monitors a person's behavior and compares it with his or her usual routine.

If a normally active senior spent the day sitting in one room, it could signal a potential illness or onset of depression, Gold said.

With extra sensors, QuietCare can even indicate whether people are taking their medications or tell how often they open their refrigerators, which could be an indication of how well they're eating.

Landow, who breathes through an oxygen tube and who was recently hospitalized after a fall, is comforted to know the device is there.

"It's wonderful," she said. "It's still good to know I have QuietCare, especially when they close the door."

Landow's niece, Lynn Landow of Morris Plains, pays \$89 a month for the service, which was installed before her aunt moved there about a year ago.

"It seemed like a very good idea," Lynn Landow said. "We were afraid for her. We wanted to have extra security."

QuietCare is developing additional devices, including a mattress pad made of electric fibers that will sense movement in a bed or chair and a set of biometric devices that will take blood pressure, temperature and weight.

The MIT AgeLab is researching policy and consumer issues intertwined with gerontechnology like QuietCare, such as how much information should be collected and who should have access to it. The questions, D'Ambrosio believes, will become more commonplace as the technology spreads.

She said future technology may include sensors that could tell exactly what you took out of your refrigerator or a device on your toilet that measures the chemical composition of urine.

"These kind of systems are growing," she said. "The technology can become pervasive."

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