



Technology Transforming Senior Services in the United States

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By Kay Harvey

Computer games. Camera phones. Reality TV.

Over the last decade technology has created a whole new world – largely geared to the young.

Now click to the present. A newer wave of technology is changing the world for older people, too, by delivering new options that help people to live longer and more independently wherever they choose to call home.

Let's zoom in on a weekday afternoon to a computer lab at Ecumen's Lakeview Commons in Maplewood, Minnesota, where two residents are logging on to a touch-screen computer to test – and polish – their mental skills.



Honor Hacker (right) and Virginia Kemp use Dakim's [m]Power cognitive fitness program at Ecumen's Lakeview Commons community.

"It rates us in various categories," explains Honor Hacker as she challenges her brain with a computer program that tests abilities in math, geography, music, vocabulary, spatial relationships, instant recall and more. The program by Dakim called (m)Power, is as entertaining as it is good for brain, she says. Fill-in-the-word games, real-life math challenges and other puzzlers mix with colorful visuals and rapidly shifting tasks to keep her eyes riveted on the screen. "I use it every day," says Hacker, 82 and a retired high-school social studies teacher. "It's fun."

"And challenging," adds Virginia Kemp, 83, who is sitting next to her to work the program, too. "It's like playing a game, like the kids have their video games. They want to win, and we want to win."

Winning, in this case, means scoring higher than they did last time. Each time they "play," they get a score that determines how its level of difficulty will be adjusted the next time they log on. In other words, when they "win," it gets harder –and that's what they like. Backed by scientific research, the program is built to challenge older people's minds in ways that can preserve – and strengthen – cognitive abilities, says Kathy Bakkenist, Ecumen's chief operating officer and senior vice president of strategy and operations. She says Lakeview Commons residents who use the program tell her, " 'It helps us keep our brains active.' "

The brain game is one of several technologies Ecumen has acquired to benefit residents in its communities. “We seek to be a leader in using technology to enhance people’s lives and to help transform aging services,” she says. “We also see it as a way to differentiate our services in the marketplace.”

But leaders in the aging services field say introducing new technology is much more than a smart business move. They call it a must.

Ecumen is “on the forefront,” says Andrew Carle, nationally known for coining the term “nana technology” to identify innovations that improve seniors’ quality of life. “They’re not optional. They’re mandatory,” says Carle, who managed hospitals and senior housing before joining the faculty at George Mason University, where he directs a program in assisted living/senior housing administration. “We have to focus on the priorities, get away from bells and whistles and the ‘toy thing’ and concentrate on what can really make a difference. And then get the cost down. “



Technologies that help provide care and well-being will be essential as people live longer and a huge baby boom generation – those born between 1946 and 1964 – edges into retirement and later life, he says. By 2030, one of every five people in the United States will be 65 or older, compared to 12 percent in that age group now. And by 2050, there will be more than a million people over age 100. “We have to have technology to help seniors live independently, or to allow one’s caregiver to be as productive as three or

four are today,” he says. “Or we’re not going to have enough professional caregivers.”

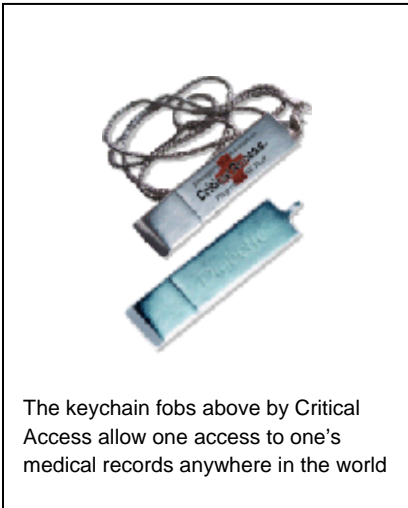
Eric Dishman, general manager for health, research and innovation for the California-based Intel Corp., backs up Carle’s theory. “We have health care that’s already unaffordable,” he says, “millions of uninsured Americans and 45 million seniors, with 67 million waiting in the wings of retirement. That’s going to put a huge burden on the health care system.” Dr. Michael Magee, son of a house-call-making doctor and director of the Pfizer Medical Humanities Initiative, frames the challenge this way: “how to increase services for three times as many seniors while reducing health-care costs.”

An important part of the solution? Technology is at its core, say Dishman and Magee in a video created for the Center for Aging Services Technology (CAST). In **“Transforming an Aging Nation”** (www.agingtech.org/index.aspx) and a companion video on the Web site, they share a look at one of many ways technology can bring efficiency to aging services. In a real-life scenario, an 87-year-old man with a heart condition lives at home alone. Online games of solitaire and poker help him exercise his mind. A high-tech watch reminds him to take his medications, and sensors turn off the burners on his stove if he forgets. His medical information is digitally recorded so any doctor has immediate access to it. And a “reality family TV” monitor in his home allows two-way communication with family members

and creates a window to what's going on in his house. "So we know everything's OK," his daughter-in-law says.

The arrangement is one of many in a "new caregiver model" intended to revamp the nation's long-term-care system to better support people wherever they live, Magee says. Many new technologies have the capacity to radically change a too-familiar pattern of frequent visits to doctor's offices and emergency rooms.

One is the Portable Health Profile, a miniature CD and tiny flash drive made by Tennessee-based Critical Access that stores all sorts of medical records including X-rays. Data held by such devices can create what Magee calls an "electronic loop to health care" and an opportunity for better decision-making



The keychain fobs above by Critical Access allow one access to one's medical records anywhere in the world

because information is so accessible. "The physician can access, the nurse can access, the senior can access," Dishman explains.

Many diabetics now carry cell phones that can analyze a strip of blood within seconds and send results to their doctors' offices. To assist care of heart patients, a shirt equipped with sensors can regularly transmit heart rates and other information to a doctor's office. Other personalized devices on their way to the marketplace can give baby boomers the "tools" that fuel that generation's wish to age independently – and on their own terms.

Dishman, who now heads an Intel Corp. project in Ireland studying how people age, says he sees the new technology bringing three pieces together: cell phones, inexpensive sensors that capture

biological data and the infrastructure of health care. What technology is doing, he says, is "collapsing the distance."

Technology's power emerges in its ability to provide support to people where they live and information to doctors, nurses, other caregivers and seniors where they are, says Magee. "Good decision-making requires good information." And the technology means "wherever I am, I will have access to it." With its ability to reduce visits to hospitals and doctors' offices, it also means fewer demands on the health-care system, along with millions of dollars in savings to patients.

In Ecumen's senior housing communities, technology reduces doctor visits in another way. A device called Invivi Soft Pulse uses electromagnetic frequencies to minimize the pain of wounds from injuries or skin breakdown – a common condition as people age -- and help them heal. Other technology plays an in-house efficiency role. A system called CareTracker makes recordkeeping and other "paperwork" more efficient, freeing up additional time for nurses and aides to deal directly with residents.

New technology is constantly emerging. Much of it seems to jump right out of a science-fiction movie. Companies are designing "magic floors," where sensors in a layer of carpet can track footstep patterns and detect changes in a person's gait that warn of potential falls. "Smart canes" can work in a similar

way. Plastic pill cases are being designed to remind people when to take their pills. Sensors on a pill bottle alert someone that they are taking the wrong pill or taking a pill at the wrong time.

But the focus of technology geared to older people isn't all about physical health. Step aside MySpace and make way for social networking sites for seniors. Internet entrepreneurs are "dabbling in" a new twist on Web sites popular with teenagers. Sites like Eons, Razoom, Multiply and Boomertown help older adults stay connected from anywhere.

Honor Hackman appreciates the emotional benefits she gets at Ecumen's Lakeview Commons as well as the health care. She feels at home in her pleasant apartment, where her silver spoon collection and photos of her children and grandchildren line the walls. She barely notices the seven pocket-flashlight sized sensors tucked in seven strategic places in her kitchen, living room, bedroom and bathroom to monitor her movement in the apartment. They're at the heart of a system called QuietCare, installed in 600 of Ecumen's residences, to detect longer-than-normal time spent in bed or the bathroom, which can signal something is wrong. Sensors in a resident's pillbox or medicine cabinet alert Ecumen team members to another potential problem: not taking prescribed medications on schedule.

"I never think about it," she says of the technology. But after QuietCare detected less movement than normal in her apartment a year ago, staff response led to treatment for an upper respiratory infection. It's an ailment that could have been serious for Hacker, who has asthma.

Knowing that someone's watching out for her is a good feeling, she says.

"I think it should be comforting for a person's family, too," she says – like hers, which is scattered across the country. "To know I'm really taken care of."

There will soon be a time when Americans wonder how we ever went without technology in aging services.

Kay Harvey writes for Eldr Magazine and reports on aging, demographics, gender and psychology for the online newspaper MinnPost.com. She previously was an editor and reporter for the Saint Paul Pioneer Press.