

Technology, Care and Community

Will active use of technology enable older people to age in the places they call home?

by Lisette Hilton

The demographics and economics of care in the coming decades make wise use of technology a must for aging-services providers. Here is how some providers are leveraging telehealth, monitoring and communication technology to enable seniors to continue living at home.

- A commitment to telehealth services allows one provider to serve seniors in their homes and in senior centers, and will allow another to better serve seniors in rural areas.
- Safety monitoring systems are evolving into valuable aids to caregivers, both for seniors living at home and for those in congregate living situations.
- One large aging-services provider is offering computer-based “cognitive fitness” services to clients.
- Some states are covering certain technological services via Medicaid, while the federal government and Medicare are still cautiously piloting programs that apply emerging technologies to senior care.

The trends are clear: Nurses caring for clients in the aging services are in high demand and low supply; this, as older adults—including those with chronic diseases—want to age gracefully at home.

Peter Notarstefano, AAHSA’s director of home and community-based services, says direct human intervention will always be required, but the need for technology as an adjunct to providing care is inevitable.

“Our customers ... want different types of nursing homes; they don’t want the traditional. So, what we have to do is change the way we meet this new type of individual’s needs,” Notarstefano says.

And that customer base is growing fast.

“If you look back at the year 2000, there were 600 million people over the age of 60 on the planet,” says Eric Dishman, general manager and global director for Intel Corporation’s Health Research & Innovation Group, and the national chair of AAHSA’s Center for Aging Services Technologies (CAST). “And those numbers are going to double to 1.2 billion people by 2025 and then almost double again to over 2 billion people by the year 2050. This rapidly advancing age wave will place an enormous burden on the world’s health care systems. As the population ages, health care costs will soar. Intel believes that proactive health technologies play a significant role which will ultimately reduce costs in an already overburdened system.”

High-Tech Independence

At their most basic form, these technologies include standard life-alert products that summon help when the wearer pushes a button. They progress to more elaborate telehealth systems, motion- and vibration-sensing technologies, interactive videos and even robotics, says Majd Alwan, director of CAST. Formerly director of the robotics and elder care technologies center at the University of Virginia, Alwan has

been developing and validating technologies that could help seniors age safely and independently at home.

The increasing demand of home care services and a shrinking nursing workforce were incentive enough for Northeast Health to look into telehealth about seven years ago.

“Telehealth ... allowed us to stay connected to patients ... and to cut down on some of the costs that we experienced, such as travel time it took for our nursing staff to get out to patients,” says Lisa Gaudet, director of remote care technology and genetic services for Northeast Health, Troy, N.Y. “Telehealth allows the nurse to come in contact with more patients in a given day. So while a nurse still might visit four or five patients in the field a day, that nurse is [also] able to conduct three to five telehealth visits during the same business day.”

Gaudet says that Northeast Health, an integrated health care system with retirement communities, a Program for All-Inclusive Care for the Elderly (PACE), community services and more, is using telehealth in a number of ways. Initially, it installed devices in clients’ homes and the nurses assigned to those clients would make home visits and keep tabs via telehealth. Today, the system’s telehealth program reaches out to people who are not acutely ill but have chronic diseases. Northeast Health installs telehealth devices in senior apartment complexes in community rooms, where multiple clients have access.

“Instead of having one device in an apartment, we might have one device in a community room and folks can go down and check their blood pressure, their weight, answer some health-related questions and do health assessments. Then, our nursing staff looks at that information, and if somebody’s measurements are outside certain parameters, they can reach out to the individuals and help them bring

themselves under tighter control,” Gaudet says.

Telehealth has evolved into video and nonvideo technologies, according to Gaudet. Video technology allows a client and nurse to see each other and communicate, so both need to participate at the same time. Clients can use nonvideo telehealth devices at their convenience, on the other hand, without relying on having a real-time conversation with the nurse.

Technology is being woven into the services of the Evangelical Lutheran Good Samaritan Society, a provider of skilled nursing care, senior housing, assisted living and home and community-based services based in Sioux Falls, S.D.

Kelly Soyland, Good Samaritan Society’s director of purchasing and research and innovation, says telehealth is among the technologies that are allowing the 85-year-old system to take its mission to more people in rural and other areas, as well as provide a high level of care.

In one example, telehealth capabilities help Good Samaritan medical staff monitor clients’ chronic health conditions—often without clients having to travel miles to the system’s clinics.

At the Cusp

Telehealth is only one type of technology becoming available to help people age in their homes and maintain independence.

Safety monitoring systems are evol-

ving from push-button systems to sensing systems that, in some cases, people don’t have to wear. CAST’s Alwan has conducted research on a fall detector system, for example, that measures floor vibration and detects the impact of a fallen human body versus other fallen objects. It has an advantage over the wearable device, he says, because it doesn’t require user compliance or that the user wear it.

New devices utilize motion detectors that alert caregivers (wherever they are) if there is no movement when it is anticipated, or if there is unusual movement, Alwan says. Still other products are using sensors to assess wellness and activities of daily living, including whether seniors are making their meals and socializing.

Motion sensors are behind an important trend in independent senior living. By installing sensors in strategic areas of the home, caregivers can monitor activity and manage care from afar.

“This data is collected and transmitted to a server that uses algorithms to do the inference and present the information in a Web-based report,” Alwan says. “The data alert can be preprogrammed and alerts triggered and sent in an e-mail or short text message to the caregiver.”

Gaudet says that for Northeast Health, providing in-home monitoring and sensing services through its long-term care division, The Eddy, is good business, because it allows the organization to form

client relationships while people are still in their homes. The sensing systems also provide a competitive edge and, for loved ones, peace of mind.

Northeast Health added a sophisticated monitoring system to one of its new communities about a year ago, Gaudet says.

“It gives professional caregivers additional levels of detail that you wouldn’t find in some of these home-based systems. We can trend sleep patterns [and] weight. We can make all this information available to the family so they know they made the right choice in choosing one of our facilities,” Gaudet says. “It helps us document and track the care that we’re giving. We can see, for example, that someone who was very social suddenly is more to themselves. Depression? Health issue? Let’s get in and tackle it.”

The Good Samaritan Society is involved in pilot studies with the University of Virginia, looking at use of sensor technology. The technology detects possible crises and helps manage wellness.

Because it promotes independence, this technology that tracks motion, pulse and respiration, falls, meal preparation and the taking of medication has applications throughout the continuum of care—from an individual’s home to assisted living, and through Alzheimer’s and memory care.

Cognitive Fitness

Technology that addresses mental health is setting Front Porch, a Burbank, Calif.-based multihome system, apart from the competition.

Front Porch, which serves 6,000 Californians and others in its continuing care retirement communities, skilled nursing, independent living, active adult living, affordable housing and other facilities, has been working with Dakim, to test its [m]Power cognitive fitness system product.

[m]Power uses a touch-screen to present entertaining content designed to stimulate cognition, says Kari Olson, chief information officer for Front Porch.

“It’s done in a way that’s fun and entertaining, with movie clips and music, all specifically aimed at the individual. The program builds a profile of who I am, what I’m interested in and when I was born, and it pulls content to present to me that would be meaningful to me as an individual,” Olson says.



Evangelical Lutheran Good Samaritan Society

Judy Rall, a home health nurse in Sioux Falls, S.D., discusses Good Samaritan’s SmartSense service with clients. Good Samaritan is beta-testing this service to promote health and independence.



Front Porch

Paul Peters, a resident of Villa Gardens, Pasadena, Calif., works with the Dakim [m]Power system. Front Porch is testing the system in four of its communities.

“We have 26 [m]Power units installed at four of our communities. We started out in alpha testing with just 10 units at one community, and after the product went into full release nationwide, which was last fall, we added additional communities. We’re continuing to add more and more,” she says.

Residents love the technology, and client prospects consider its value when choosing between Front Porch and its competitors, according to Olson. Having the technology has also gotten Front Porch local media coverage.

Front Porch is now funding the technology on its own because, Olson says, “Honestly, it’s the right thing to do. When we talk to our residents about what worries and concerns them, brain health is a huge issue.”

Still, the investment, she insists, is financially sound.

“There is no [other] way we could provide this level of service and benefit people in such a personal and profound way without extreme dollars, much more than what we’re spending for [m]Power,” Olson says.

Funding Challenges

Government funding for health care technology in aging services rests largely with Medicaid at the state level. There is a long list of states that have been innovators in the use of Medicaid funds for telehealth: Arkansas, California, Georgia,

Iowa, Illinois, Kansas, Louisiana, Minnesota, Montana, Nebraska, North Carolina, North Dakota, Oklahoma, South Dakota, Texas, Utah, Virginia and West Virginia, according to AAHSA’s Notarstefano.

“[These states] actually have fee-for-service Medicaid reimbursement for telemedicine types of services. Kentucky and Maine are developing plans for telehealth now,” Notarstefano says.

The federal government and Medicare have been slower to embrace technology-related costs for senior health care, he says.

While the federal government is funding some pilot projects in technology and elder care, there is concern about the potential for fraud and misuse. Aside from limited and specific programs that reimburse for telehealth, Medicare has yet to reimburse in general for telehealth in aging services, Notarstefano says.

Research Needed

The key to widespread adoption of any of these technologies is a truly objective evaluation of their reliability in the field under various circumstances. The problem, says Alwan, is that outcomes data are, for the most part, lacking.

While telemedicine has the benefit of objective science backing its efficacy, most other technologies only have case studies indicating their usefulness. Many devices, however, have been studied in the lab. For example, according to Alwan, the floor vibration fall detector has not been

fully evaluated with human subjects in the field but detected 100 percent of falls and resulted in zero false alerts in lab tests using crash test dummies.

Research, especially in the telehealth arena, should get a boost from Medicaid pilots in various states where the government is measuring patient outcomes data, Notarstefano says.

“I think within the next couple of years, you’ll see more elaborate coding for Medicare reimbursement of telemedicine, because of that data,” he says.

Buyer Beware

Experts warn that aging-services providers should look before they leap into the world of technology.

“What’s really out there now is a plethora of innovation that companies are trying to get off the ground, seeing the potential of the aging market ...,” says Diane Feeney Mahoney, the Jacques Mohr research professor and gerontechnology director at the MGH Institute of Health Professions, Boston.

The bottom line is that any technology has to appeal to the needs of the end users—older adults—or they won’t use it.

“My research shows that it has to have a purpose and utility for them. It has to really give them a sense of support, security, safety and well-being,” says Mahoney. “It’s still a buyer-beware market. You have to be pretty savvy and determine how the technology fits with your institutional mission and role. What does this technology offer that will make the care more efficient and equal, if not better?”


Many companies still have to work out glitches in areas such as interoperability and achieving a smooth interface with systems that aging services organizations already have in place. If providers jump in too early, or purchase technology for technology’s sake rather than for their individual needs, they might actually alienate clients.

Technology as a Bridge

Keeping these precautions in mind, AAHSA members are in an ideal position to test and apply technologies aimed at promoting independent aging.

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CAST and AAHSA can help providers evaluate technologies if they have made the strategic decision and commitment to go forward with them, Alwan says.

“I think anybody that’s in the business or in a mission to serve seniors needs to understand what those customers are looking for and try to meet those needs. This is a clear message that they’re sending,” Soyland says. “Technology can help bridge some of those gaps. It can help families, it can help seniors, and allows us to take our mission to new people. That’s one of the reasons we’ve really zeroed in on it.” 

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Resources

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