


# Patient Ability

## DICTATES TECHNOLOGY'S USE

Specialized products and services can improve older patients' quality of life. The trick lies in knowing when to recommend them.

By Lindsey Getz





**T**echnology is always pushing the limits of possibility. Most of us can remember a time when devices such as laptops or smart-phones seemed like science fiction. Now they're ubiquitous.

For older adults, technology offers possibilities that make living at home safer or simpler, and physicians are evaluating and recommending such products and services to their patients. Although various technologies hold significant potential for many aging patients, they aren't for everyone.

One key factor to remember when recommending technology to older adults is that "all older adults are not the same," says Evelyn C. Granieri, MD, MPH, MEd, chief of geriatrics at NewYork-Presbyterian Hospital/Allen Hospital and chief of the division of geriatric medicine and aging at Columbia University College of Physicians and Surgeons. "You have to be very thoughtful about what you recommend and for whom. The variables to consider are whether the patient is cognitively intact, whether a caregiver is on premise, and whether it's something the patient can afford. Many of the new technologies are not cheap."

But Granieri, like many others, believes that for the right patient in the right circumstance, technology can be very beneficial. And nowadays there are more options than ever before.

### New-Age Solutions

Technological products and services for older adults run the gamut in their capabilities and pricing. Many of them can help practitioners in their efforts to overcome treatment barriers that elders may encounter. For example, getting older patients to successfully participate in physical therapy can sometimes pose a challenge, but it's one that virtual rehab looks to solve.

This form of rehabilitation uses 3-D virtual technology in which patients watch an image—their avatar—as it mimics their motions in real time on the screen. OmniVR Virtual Rehabilitation System from Accelerated Care Plus (ACP) is being used in nursing facilities, assisted-living facilities, and rehabilitation hospitals. "When immersed in virtual exercises and activities providing positive feedback, clinical research suggests that patients will exercise harder and longer, which can contribute to improved function and recovery," says Tony Taylor, chief marketing officer for ACP. "Another key finding is that the functional gains acquired through virtual rehabilitation can be successfully transferred to real life settings."

Taylor notes that while OmniVR can enhance a patient's rehabilitation experience, it's not intended to be a replacement for traditional rehab. And it's important for a therapist to be present as the "technology requires the skills,

expertise, and judgment of a professional therapist," he adds. "However, because geriatric patients may be disinterested, fatigued, or even depressed, the OmniVR represents a valuable tool to help therapists motivate patients and inspire them to reach farther in the rehabilitation process."

Another common struggle for older patients is remembering to take medications. In fact, a new study conducted on behalf of Medco Health Solutions, Inc found that 57% of older adults admit they forget to take their medications, while 23% admit to neglecting to fill a prescription on time. And with the rising number of medications each individual may be taking, it's a growing problem. But it's one that today's technology can successfully address.

One possible solution is the Medication Reminder service offered by GreatCall, the same company that created the Jitterbug phone, an easy-to-use cell phone for older adults. "We have created an effective way to improve how you are sticking to your prescribed medication programs," says David Inns, CEO of GreatCall. "Making the service easy to use and backing it with our high-quality customer service will get more people more actively engaged in managing their own well-being."

The GreatCall Medication Reminder service allows patients to establish their medication regimen by connecting with a GreatCall customer service representative and setting up a service call. The call not only works as a reminder but also helps chart the patient's compliance. During each call the patient is asked whether he or she has taken the prescribed medications, and the responses are recorded and tracked for compliance. A user can then

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log on to the company's website to access a chart detailing adherence to each medication. The service includes up to 16 medication reminders per day as well as prescription refill reminders.

Another technological solution for medication reminders is an electronic pill dispenser. "Technology has really improved the traditional pillbox," says Ronan Factora, MD, of the Cleveland Clinic's Center for Geriatric Medicine and codirector of the Aging Brain Clinic at the Cleveland Clinic. "Today's pillboxes can actually dispense medication for patients, helping them to know what medication to take

and what may have been missed. Some of these devices can even be integrated with a type of self-reflection report based on how the patient is feeling each day. Take, for example, a heart failure patient. If that person feels more short of breath one day, they can adjust their medication accordingly using the electronic device. The technology can even be in communication with the primary care physician.”

Factora says he also discusses some sort of emergency response or life alert system with his patients. Such systems offer easy ways for patients to access emergency services at the touch of a button. But Factora says even this simple technology isn't for everyone. For example, a patient has to be awake and alert because it is a manual technology.

And Granieri says that while she believes this is one of the most commonly recommended types of technology, physicians first need to make sure their patients are cognitively intact before suggesting it. “I've worked with patients who wear these [life alert system device] and when I've asked them what it is, they've told me it's a nice pendant,” she says. “The patient needs to understand what the device is and how to use it in order for the technology to be effective.”

There are more advanced technologies that work with the same principles of a life alert system but take the concept much further. “There are technologies that can keep track of an individual and can activate emergency response if a fall is detected,” says Factora. “And evolving technologies can even recognize a person's daily patterns. For example, if at 10 AM Mr. X is still in bed and not moving, the system may alert a caregiver that something is out of the ordinary.”

These types of technologies, such as the SimplyHome system from CMI, allow caregivers to track a patient online. For instance, with SimplyHome, if a caregiver is concerned a loved one may forget to turn off the stove or the lights, the use of the stove and lights can be monitored online and can even be turned off remotely by the caregiver using the Web program. It's just one of many scenarios where technology allows a patient to have some independence while still being safely monitored.



The pull cord, a component of a SimplyHome home-monitoring system, can be accessed to summon assistance, if needed.

— PHOTO COURTESY OF SIMPLYHOME

## Remote Monitoring Devices

The primary idea behind many of these technologies is to make living at home safer and easier for older patients. After all, while a long term care setting may ensure patients stick to their prescribed medications or regimens, for many it also affects their quality of life—and may put them at a higher risk for contracting diseases or infections. When possible, patients prefer to be at home. That's one reason remote monitoring devices have become a popular technological solution.

Remote medical devices track and transmit patient data to a centralized location via the Internet or phone lines, allowing a patient to remain at home yet be monitored by his or her physician. For example, glucometers can help diabetic patients record their glucose levels and then transmit the data directly to the physician. A remote-monitored implanted pacemaker can transmit heart data to a patient's cardiologist. And even scales can be used to help track weight fluctuations in congestive heart failure patients. Such devices are designed ideally to keep more patients from long-term stays in the hospital. A survey conducted by GfK Roper for Practice Fusion, a Web-based electronic health record company, found that 62% of respondents felt communicating with their doctors using a home medical device would improve their health.

Factora agrees that in the posthospitalization period where the potential for relapse is the greatest, it can be particularly helpful for a patient to be remotely monitored by the physician. “You can deliver care in a lower-cost fashion than going to a rehab facility,” he explains. “A lot of people would prefer to go home, and there are drives to reduce the length of stay in a hospital. But you also don't want the person to require rehospitalization. With remote monitoring, care can still be delivered,” he says.



— PHOTO COURTESY OF GREATCALL

Patients receive medication reminders or medical alerts via specially equipped phones.

But Factora believes one of the most significant barriers to the use of these types of devices relates to the question of who will cover the costs. "Many of the initial studies for these types of technologies were funded by grants to see if the technology would work," he says. "So these types of technologies are not in wide use yet. It's something that's being explored. There's the question about whether these types of devices would be reimbursed by Medicare. Otherwise you're going to see patients paying out of pocket, which may affect how many people get access."

Granieri agrees that there is a huge financial barrier to the adoption of future technologies, but she sees other issues as well. "When you send frail people home with electronic devices that are of value, they can become the target of burglary," she says. "In the glossy world of technology, these types of devices are wonderful, but there are some serious barriers to consider before subscribing to the idea that they'll work in a real-world setting."

And physicians' concerns extend beyond remote monitoring devices. Granieri believes that before sending a patient home with any type of technological device or recommending a product or a service, physicians need to test a patient's executive functioning. Certainly his or her cognitive abilities and understanding of any steps involved in using a device or service are required for effectiveness, but basic senses are needed too, says Granieri. For instance, if a talking device requires a patient to be able to hear well, his or her hearing should be tested and evaluated. And a helpful application on an iPad or smartphone isn't very useful if the patient can't see it. "You need your senses in order to respond to electronic stimuli," says Granieri. "That's something that tends to be forgotten. I do a lot of house calls, so I see what happens at home. These things may sound great in the office, but they may not be so great once the patient gets home. One solution may be that any type of electronic device or technology is not given in the office but actually brought to the home. And a follow-up visit may be necessary to ensure the person is really using it—and using it properly."

Factora agrees there are definitely limitations to geriatrics-related technologies and that physicians who recommend them to their patients may need to invest a lot of their time to ensure patients are actually using them properly. But he says the benefits they provide cannot be ignored. "From the standpoint of delivering quality healthcare, you can't ignore the benefit that technology may be able to offer your patient," he says. "For many, it can improve the quality of life. It's important for physicians to have open minds and awareness of some of the newer technologies being developed. Many of them will allow a person to live better and easier—and allow the physician to provide better care."

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## TELEMEDICINE: CONNECTING PHYSICIAN TO PATIENT

The use of telemedicine seems likely to be part of the future of medicine. While there are still barriers to its adoption, usage continues to spread. Medical circumstances where time is of the essence or situations where patients are not easily transferable are instances in which telemedicine can be highly beneficial.

In Wisconsin, the UW Health Comprehensive Stroke Program is helping save the lives of stroke victims using telemedicine technology. With brain cells being lost at the rate of 1.9 million neurons per minute when a stroke cuts off blood flow, it's a circumstance in which patients need immediate treatment.

The UW Health Comprehensive Stroke Program uses a video system to connect UW stroke neurologists directly to a patient. A physician can view a CT scan and directly communicate a treatment plan recommendation to the emergency department physicians and nurses so care is immediately given.

Everyone in the room can see and hear the stroke neurologist. The technology allows for an expert neurologist to work on the patient's case—even if the hospital to which a patient is admitted to has no neurology specialists on staff. "You may lose a little something by not actually being there in person, but considering the alternative is that the patient has no access to a neurology expert at all, it's obviously the best possible outcome," says Justin Sattin, MD, an assistant professor in the neurology department and medical director of the UW Health Comprehensive Stroke Program.

This type of technology may be particularly useful for older adults. "An important benefit for older people is that telemedicine might reduce unnecessary transfers to tertiary care centers," says Sattin. "Removing patients from their communities is often disruptive, even for younger folks, but especially so for older ones whose spouses may no longer be able to drive to the remote hospital, for example. With telemedicine, a more confident diagnosis can be made remotely so that patients are transferred only if there is a specific reason."

Sattin hopes that more physicians will remember that in stroke cases "time is brain." He says, "There are treatments for acute, principally tPA [tissue plasminogen activator] within the new 4.5-hour window, but also including endovascular treatments and hemicraniectomy." The problem is the shortage of specialists. Fortunately, it's something telemedicine can solve.

"Telemedicine can help address the shortage of vascular neurologists by bringing the expertise of a tertiary care center into local communities," Sattin says.

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