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Telemedicine, Telehealth, Telemonitoring...

New Tech For Senior Care: What's Here? What's On The Horizon?

Wonderful new technological devices and programs are available now, and many more possibilities are on the horizon, that apply across the whole spectrum of senior care—from self-monitoring to remote monitoring, remote doctor/patient “visits” to remote doctor/specialist consultations, daily tracking of the health status of patients recovering from serious illnesses to routine tracking of those with chronic diseases, connecting with patients living in dense urban areas to reaching those living in rural areas far from necessary medical care, and improving the quality of life of seniors living independently in private homes to helping those residing in senior communities or assisted living facilities.

To understand the breadth of possibilities that technology presents for senior care providers and for seniors themselves, it's helpful to understand some of the current nomenclature.

While the **American Telemedicine Association** continues its effort to develop precise definitions for what are still rather new ways of delivering services—and although people often use the current terms interchangeably—three “big buckets” are generally accepted.

1. *Telemedicine* was the earliest definition for the entire field and continues to be the term used by the trade association and by Medicare when describing reimbursing doctors for performing a service. As the field has developed, however, telemedicine now focuses more on the illness aspect of remote medical care—highly professional doctor-to-doctor communications that are often diagnostic or procedural. The actual communication may be face-to-face or only a transmission of data.

2. *Telehealth* is now accepted as the broad, overarching term for anything that has to do with providing remote health-care support to individuals living in their own homes or in group homes. It usually has more to do with wellness and the remote accessing of health-care information than with illness diagnosis or procedures. Telehealth may involve anything from doctor/doctor or doctor/patient communications to remote monitoring of a patient in his or her own residence. Data may be transmitted by a device, appliance, or sensor; through a videoconference with a nurse; or by the patient testing vital signs—e.g., blood tests to monitor glucose levels—and/or responding to questions and uploading the results onto the Internet for review by and then feedback from a nurse, a physician, or the software itself.

3. *Telemonitoring (remote monitoring)* refers to applications that relate directly to enhancing safety and security in a residential setting. It may involve the patient wearing a simple pendant alert device to call for assistance; an apparatus, such as a pedometer or 24-hour cardiac halter, that records data that the patient then transmits to a nurse or other caregiver via the Web or in a video conference; or sensors embedded in various locations around the home to monitor activities and trigger an alert if an abnormal activity occurs. The technology usually involves someone reviewing the data on a monitor at the caregiver end in real time, at regular intervals, or when an alert sounds—with the timeframe determined by the patient's illness, situation, and program. That review could be every few hours, within a certain amount of time after transmission of the data, or even once a week or so, depending on what is being monitored. The technology can also determine whether a particular situation indicates that a nurse or physician should be notified immediately.

Looking ahead, *telementalhealth* for people suffering from depression or early stages of dementia and *telerehab*, initially used for post-stroke rehabilitative care, are developing fields—particularly in rural

areas and in other locations or situations where accessing providers of care may be difficult for individuals.

Telehealth and senior care

Telehealth is currently affecting senior care in two important ways, according to Deborah A. Randall, a health services attorney and telehealth consultant based in Chevy Chase, Maryland.

First, seniors in various parts of the country are participating in programs with their physicians, with home health-care agencies, and with a few health-care systems that are embracing this innovative approach. Health systems, of course, are anxious for seniors to self-regulate their chronic diseases as much as possible, with the hope that, by keeping their symptoms relatively steady, patients won't suffer an acute flare-up of their illness that requires a visit to the emergency room or hospitalization any more than is truly necessary.

"All the studies that I've seen that included participant reactions indicate a very broad acceptance and a positive feeling about telehealth," said Randall. "And some of the larger studies, such as those done by the **U.S. Department of Veterans Affairs**, show a very significant reduction in the rates of emergency room visits and hospitalizations by telehealth program participants, as well."

Second, although occurring less widely, some long term care facilities will bring in a physician for remote diagnostic triaging of patients when certain types of episodes occur rather than immediately transporting those patients to the hospital—which, in many cases, would be the financial responsibility of the nursing facility.

"The tricky thing about that is that Medicare still does not reimburse many of these activities," said Randall. "For example, the physician's remote diagnostic review of a patient living in a long-term care facility may be reimbursable (under current Medicare regulations) only if that patient is in an acute-care setting and receiving Medicare Part A skilled-nursing services."

Medicaid reimbursement varies from state to state. Some states reimburse for virtual video visits with a physician but not home telemonitoring; other states will reimburse for home telemonitoring under certain conditions. Some state programs require the patient to be active in a certified home-care program with a skilled-care reason for the monitoring. And some states don't reimburse at all.

Third-party insurers, however, seem to be taking a longer view of the benefits of this type of early intervention, according to Randall, and are increasingly interested in how it can help avoid a lot of the expense associated with in-hospital stays. **Kaiser Permanente**, for example, has been investigating and testing telemedicine/telehealth for some time as an adjunct to its health-care system.

But where is the patient in all of this? "Many people devoted to senior care are concerned about patients being moved around like chess pieces in the reimbursement game rather than taking a central role," said Randall. Nonetheless, there appears to be a desire by those in the health industry, as well as the Medicare and Medicaid programs, to figure out ways to lower unnecessary medical costs while improving the safety and efficacy of care. And because reimbursement is the biggest barrier at this point, one resolution might be to make telehealth activities part of a global episode of care.

Actually, health reform under the Affordable Care Act includes some interesting areas that strongly emphasize telehealth. Independence at Home (scheduled to begin in January 2012) is a demonstration program for a new form of care delivery, focused on geriatric medicine and primary care, in which physicians and/or nurse practitioners would head health-professional collectives that would deliver care predominantly to people in their homes vs. in an institution or a physician's office. "A heavy underscoring of the use of telehealth is built into the legislation for this demonstration program," said Randall. "So I believe the use of remote monitoring—distance education and video visits in lieu of some regularly scheduled in-person nurse visits, except when those appear necessary—is not just promising but probably inevitable."

Tele-applications in senior care

Some senior care facilities, in coordination with physicians and health systems, are already making some remote monitoring available to residents. They may have kiosks or other areas where residents using swipe cards can, for example, use the technology to monitor their blood pressure or aspects of their cardiac rhythm. Other facilities are installing (with the individual's explicit permission) sensors within the person's residence to monitor various activities. Still others are embracing the "smarthome" concept for new construction. The monitoring is all geared toward helping the senior remain maximally healthy and, again, finding problems early so an intervention can take place before the condition deteriorates to the point where acute care in a hospital becomes necessary.

Remote monitoring is useful all across the senior-care spectrum, according to Kathy Duckett, RN, Director of Clinical Programs at **Partners™ Home Care** in Waltham, Massachusetts—a not-for-profit home-care company that is a member of **Partners HealthCare**, based in nearby Boston. A senior with a disease process could, for example, self-monitor and track the results online or, alternatively, participate in a home-care organization's telemedicine program, where vital signs may be monitored to detect any small changes in health status and correlate the patient's activities to what is actually happening physiologically. Remote monitoring can also decrease the number of in-person nursing visits required, which lowers costs while actually doing a better job of monitoring the patient.

"We've found that it's easier to make adjustments in the health program or medications for patients when they are able to make the real-time connection between their daily activities and the monitored results," said Duckett. "That's really the unique ability that telemonitoring offers compared to the lag time of two or three days that usually exists between a symptom and the nurse's visit."

Medication monitors allow a caregiver, either on-site or remotely, to keep track of when the senior has taken medications or, if not, receive a phone call or email to that effect. Pendant alert devices have become more sophisticated and, for instance, can monitor when someone changes position rapidly and signal for assistance rather than waiting until the person actually falls and pushes the button. And sensors placed in the residence of seniors who are frail or who may have dementia-related issues and are living on their own can track the person's normal pattern and send a signal or call if something unusual happens—the person does not get out of bed or visits the bathroom too frequently or for too long a time. The caregiver can then send someone to check.

Telehealth would be used differently in hospice and palliative care, and that technology is still in its infancy. "Home-care and sensor technology is where the market has been thus far," Duckett observed. "For hospice and palliative care, the ability to support patients—as well as the caregivers and whole hospice team—through end of life and to manage pain remotely are big areas of interest, but an out-of-the-box solution that can meet the diverse needs of this population isn't available at this point."

Nevertheless, telehealth is a fast-growing industry. A lot of products are already available, with more coming all the time. "And there's definitely a market for them," she said. "Baby Boomers are aging, they seem to have money to spend, and, generally speaking, are adamant about wanting to remain in their own homes. Technology will allow them to age in place without giving up their independence."

In-house vs. outsourced telehealth

"The exciting thing about telemedicine is that it's flexible," added Duckett. "There's no one way to do it. You can consider the needs of the individual person, your cost point, and how involved or not involved you need to be from a medical or availability standpoint."

As senior providers seek ways to differentiate themselves in the marketplace, newly constructed senior housing and facilities are often built with smart technology embedded. (It's less expensive to build in the technology than to rewire for it.) Communities looking to integrate smart technology into their existing buildings, on the other hand, should seek out vendors of sensor technology, medication monitors, and other forms of remote monitoring that are looking to expand into the senior market.

In any event, organizations are always better off leasing rather than buying telehealth devices, because the lifespan of the equipment is so short. Technology companies themselves are getting smart, as well, and tapping into existing systems in the home or facility. If Internet access is available, they'll often tap their technology into that source. **Verizon**, for example, recently announced an agreement that allows **Healthsense**, which markets Wi-Fi-based health-monitoring response systems, to install its equipment using Verizon's FiOS fiber-optic network in participating senior living communities.

Senior care providers with no telehealth experience—even if they have the financial resources available to start a program, to lease the necessary equipment, and to train the staff—are advised not to simply hire a vendor and accept their software, their artificial intelligence, their processing of the dialogue between the chronically ill patient and the machine...and call it a day. The organization may be better off seeking an arrangement with a local home health-care service with telehealth experience. An outside agency could help the provider initiate the program, as a consultant, and then they step away once the program is fully launched. Or the provider and the home health-care agency could work together under contract, since they'll both be seeing a common population at various stages of an illness and throughout the aging process.

Service charges vary, depending on the type of technology. Remote monitoring of a simple medication or pendant alert device could cost as little as \$20-30 per month per patient, whereas monitoring of an ill patient requiring a clinician to review the data on a day-to-day basis could cost as much as several hundred dollars a month. Those costs include the technology, the device, and monitoring at the other end.

Sensor technology is more expensive due to the cost of installation. Once installed, and if the feedback transmits directly through a website with no interaction required from a medical person (unless, of course, an alert is generated), the cost per month may not be too expensive. "Once medical people become involved, the cost is higher," Duckett noted. Meanwhile, the feedback or any alert could go to the patient, to a staff person at the facility or agency, or to a family member at a remote location.

Under Medicare, a certified home health-care company receives a capitated payment for 60 days of care for skilled care needed for a short period of time. After that, if the person still wants the monitoring unit in the home, then it becomes a private-pay situation and the monthly fee would apply—or a health-care system would be billed, if it has a telemonitoring program.

A senior living provider that contracts with a home health-care agency to provide monitoring services for its residents could negotiate a contracted fee schedule for a specific number of people and type of monitoring. That may or may not require a capital expenditure on the part of the senior living provider, depending on the monitoring services involved. Some agencies already have monitors available. Sensors, on the other hand, would require an investment for installation, and then the partner agency would do the monitoring. But senior living providers could contract for some or all or anything in between—which, again, is the beauty of the technology. The program also might depend on whether residents are willing to pay a little extra for the monitors, which could be an option.

So it's certainly exciting to think about where technology will take senior care over the next two, three, or five years and how best to use it to help seniors manage their diseases, improve their quality of life, and, ultimately, live longer in an environment of their own choosing. "We're at a very good place compared to where we were even five years ago with regard to integrating this technology into the way we care for our seniors," said Duckett. "The technology is constantly iterating and will continue to grow and change and mature—and become more sophisticated, smaller in size, and easier to manage."

Liability issues

In general, the home health-care field has had few issues with regard to malpractice and liability, according to Randall, mainly due to the trust built up between the agencies and their patients. While

there is no way of knowing about issues that were quietly settled, and aggressive lawyers will always be waiting in the wings, she is aware of few major cases that have gone all the way to trial.

Providers, of course, must recognize the need for additional consent when individuals are offered distance or monitored care. With informed consent (an understanding of the way the care will be delivered and any possible hazards) and a “reasonable-man” standard (what a reasonable person would expect once the circumstances are explained), then the person can make a meaningful choice whether to move ahead with the particular kind of care.

“A remote monitor can go down if electricity is lost, or the server could go down if the monitor is Internet-based,” she explained. “The patient, along with family members, must understand both the positives of the technology and what could possibly fail—and then make an informed choice.” Questions must be answered up front regarding who’s responsible for installing and maintaining the technology, what interventions will be done and what won’t be done, and how often the technology will be monitored. Some agencies monitor patients only on weekdays, for example, but make it very clear to the patients that no one will be reviewing the data over the weekend. It also must be made clear that a remote-monitoring program isn’t a substitute for calling 911.

Telehealth, then, is very promising. Seniors are already very comfortable with it, but tomorrow’s seniors will expect it. The push in the near future will come from the consumer. And the senior communities and facilities that offer these kinds of technologies are most likely to be the ones that people will choose for themselves.

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