Connected Care: Advancing the Patient Experience with Telemedicine

This is Part I of a three-part series on the growing use of telemedicine in care delivery. Parts II and III will appear in the June and July issues of Industry Edge.

By Audrey Doyle

Increasing access to high-quality health care and improving health outcomes are key to ensuring an exceptional patient experience. By adding telemedicine programs to their service lines, a growing number of health care facilities are accomplishing these goals, and more.

Telemedicine is the use of advanced, secure telecommunications technology to evaluate, diagnose and treat patients, regardless of where they’re located. With telemedicine, health care facilities are

- Expanding their reach to patients in remote or underserved areas
- Facilitating access to specialists by eliminating the traditional barriers of distance and time
- Collaborating on the diagnosis and treatment of patients in community hospitals and other clinical care settings
- Improving patient outcomes by diagnosing and treating diseases early

With telemedicine, health care facilities are dramatically changing the care experience for patients, and in the process are giving new meaning to the term “connected care.”

Post-Acute Follow-Up

One area where telemedicine is showing great promise is the post-acute care setting. “For us, not only does it improve the care we provide our patients, it also results in a better patient and caregiver experience,” said Dr. Jaye Hefner, Chief of Medicine and physician lead for TeleHealth Services at Spaulding Rehabilitation Hospital in Boston, a member of the Partners HealthCare network of institutions.

Dr. Hefner points to the experience of a recent burn patient as an example. The patient had sustained severe burns on 90% of his body, the result of an explosion at home. After receiving treatment at Partners HealthCare’s Massachusetts General Hospital (MGH) in Boston, he was transferred to Spaulding for seven weeks of daily physical and occupational therapy.

Integral to the patient’s recovery were weekly outpatient appointments with his MGH burn physician to ensure that his wounds were healing properly—appointments the patient was able to attend from his room at Spaulding, thanks to MGH TeleHealth, a telemedicine initiative MGH launched in 2012.

For the patient, telemedicine eliminated costly transportation, uncomfortable ambulance rides through crowded city streets and wait time in the waiting room. Instead, as a participant in TeleBurns, one of several MGH TeleHealth programs, the patient connected at a set time every Thursday morning with his burn physician via a video hookup. His physical therapist and other caregivers were in his room with him, as were Spaulding’s telemedicine nurse and a mobile cart equipped with a laptop, videoconferencing software, a high-definition wand camera, microphones, lighting and a video screen on which his physician appeared.
In his office at MGH, the burn physician sat in front of a computer equipped with the videoconferencing software, a webcam, a speakerphone and a monitor on which the patient appeared. Using the software, the physician remotely controlled the camera—zooming in, tilting and panning to examine the patient’s wounds and assess his mobility.

According to Sarah Sossong, MGH TeleHealth director, the imagery was so clear it was as though the physician were examining the patient in person. “Visually inspecting the patient’s burns throughout his rehabilitation was vital,” she said. “The imagery provided the detail the physician needed to make sure the patient was healing properly, so he didn’t have to come to MGH.”

As well as eliminating weekly trips to MGH for the patient, the video visits facilitated collaboration and communication among the patient’s caregivers. “If the physician wanted to assess a wound, we made sure the wound nurse was in the room for the appointment. If he wanted to review rehab progress, we made sure the therapists were there,” said Dr. Hefner. “Then the physician could consult with us and the patient on follow-up instructions, which would have taken time to communicate back to us otherwise.”

Perhaps most important, the video visits improved the patient’s outcome by allowing him to adhere to his therapy schedule. For example, “he would have missed a day of therapy for each in-person follow-up,” Dr. Hefner said. “This would have increased his length of stay here by a week.” In addition, when the patient needed wound revision to remove devitalized tissue and minimize bacterial growth, he didn’t have to stay in the MGH burn unit for a few days after the surgery so that his physician could ensure that there were no complications. Instead, the revision was performed at MGH as day surgery and the patient returned to Spaulding that evening; the physician then monitored the healing process through video visits.

This freed up the MGH bed for new patients, and it meant the patient could return to his therapy schedule the next day. “This made a big difference on both sides,” said Dr. Hefner. “Not only did it improve the patient experience, but it also decreased the cost of care.”

Fast Treatment = Faster Recovery

In addition to video visits, telemedicine is providing high-quality, coordinated care in various other settings. At MGH, for instance, specialists in the TeleDermatology program provide consults and diagnoses to doctors in hospitals that don’t have such expertise in-house. Cardiologists in MGH’s Heart Center provide continuing care to former patients in their homes; all the patient needs is a computer with a webcam and high-speed Internet access. And through MGH’s TeleNeurology program, neurologists provide 24/7 assessments and diagnoses for various conditions, including stroke, to emergency department physicians at more than 30 community hospitals across New England.

Because most community hospitals don’t have stroke-trained neurologists on staff, and because stroke is such a critical, time-sensitive condition, numerous facilities have joined MGH in adopting telemedicine for early diagnosis and treatment of stroke. “With stroke, the goal is to get the patient to the right place for the right treatment in the right amount of time,” said Paula Meyers, system director of OhioHealth’s Stroke Network.

Typically, telemedicine services for stroke are based on a hub-and-spoke model. In the Stroke Network, OhioHealth’s Columbus-based Riverside Methodist Hospital (a certified Comprehensive Stroke Center) and Grant Medical Center (a certified Primary Stroke Center) are the hub, and 21 partner hospitals throughout Ohio that don’t have on-site stroke expertise are the spokes.

According to Meyers, 12 OhioHealth neurologists take call for the Stroke Network. When a patient arrives at a partner hospital, the ED team provides treatment on-site while collaborating with the neurologists using a mobile cart equipped with a two-way camera and an audio connection powered by telemedicine software.

The neurologists can see and evaluate the patient virtually, view CT scans and other test results, confer with the partner hospital’s physicians and help determine the correct course of action. If the neurologists diagnose an ischemic stroke and fewer than three hours have passed since the patient’s symptoms began (or 4 ½ hours from last known well on a certain subset of patients), they advise the ED team to administer tPA (tissue plasminogen activator), or to transfer the patient to Riverside for a mechanical thrombectomy, in an attempt to remove the clot that caused the stroke. If they diagnose a hemorrhagic stroke or aneurysm, they advise the team to transfer the patient to Riverside for further advanced modalities. If they determine that the patient is suffering from a subacute stroke or a noncritical neurological condition, or if the treatment window for an acute stroke has passed, the neurologists may advise that the patient remain at the partner hospital and then work with the ED team to help determine the most effective treatment.
Before the Stroke Network was formed, patients presenting with stroke symptoms at partner hospitals were stabilized and then sent to Riverside or Grant for treatment. “Some of these hospitals are almost three hours away from Columbus by ambulance, so by the time the patients were transferred, that critical window for ischemic stroke treatment had closed,” said Meyers.

“We see 1,100 to 1,500 patients each year through the Stroke Network,” she continued. “Because we can evaluate and treat them faster, more ischemic stroke patients are receiving tPA in time, and therefore are spending only a day or two in the hospital and going home, instead of spending four or five days in the hospital and being released to an extended care or inpatient rehab facility.” What’s more, patients who remain in their community hospital for treatment typically have family close by, “which means the care is more patient- and family-centered,” she said.

According to Meyers, several partner hospitals have decreased their door-to-drug times significantly since joining the Stroke Network. “Hospitals that had given tPA in the past had door-to-drug times of up to 120 minutes before, and they brought them down to 58 to 70 minutes,” she said. “And one hospital that had never given tPA before had three stroke cases this year, and their door-to-drug times were 54, 57 and 52 minutes.” (The Standard of Care for door to drug is 60 minutes.)

### 21st-Century House Calls

While OhioHealth uses telemedicine to bring its stroke expertise to community hospitals, other facilities use it to bring medical care to the homes of chronically ill patients who might not receive that care otherwise.

One of these is Jackson-based University of Mississippi Medical Center (UMMC), whose Center for Telehealth offers cardiology, dermatology, pediatrics, emergency medicine and stroke services through telemedicine technology at clinics and hospitals across the state. In 2014, the center launched the Diabetes Telehealth Network to address Mississippi’s growing diabetes crisis. The program—the first of its kind nationally, according to UMMC—recruited 180 patients in the Mississippi Delta to participate in a 12-month remote care management program with the goal of improving patient outcomes.

Using Internet-capable tablets equipped with remote patient monitoring software, patients participated in daily health sessions in which they shared data such as weight, blood pressure and glucose levels with a UMMC team of RN Care coordinators, pharmacists, diabetes educators, endocrinologists and ophthalmologists, who then monitored biometrics and medications and scheduled phone or videoconference calls if needed. Last fall, UMMC extended the remote patient monitoring program for another five years and expanded its reach to patients with congestive heart failure, hypertension, chronic obstructive pulmonary disease and pediatric diabetes. UMMC plans to offer the service to adult and pediatric asthma patients soon.

According to Michael Adcock, administrator for the Center for Telehealth, the Diabetes Telehealth Network represents a form of coordinated care that has helped Mississippians develop long-lasting behavior changes. “In a study of our first 100 patients, preliminary data showed a medication compliance rate of 96%;” he said. “The average rate nationally for diabetics is between 60% and 65%. And for this group of patients, it was significantly below 60% before they enrolled in the program. So we know it’s working.”

The preliminary data also showed a 1.7% decrease in hemoglobin A1c (HbA1c). HbA1c measures what percentage of a person’s hemoglobin is coated with sugar—the higher the level, the poorer the blood sugar control and the higher the risk of diabetes-related complications. “Plus, we found nine diabetic retinopathies,” Adcock said. “If we hadn’t detected this disease so early, most of these patients would have lost their eyesight.”

UMMC is involved in additional telemedicine programs, as well. TeleConcussion, a pilot program which debuted last fall, provides real-time concussion evaluations for high school football players. Implemented at six schools, the program uses a tablet with built-in 4G LTE Wi-Fi and telemedicine software to connect coaches and trainers with UMMC on-call emergency physicians. UMMC hopes to expand the program for the upcoming football season.

On the other end of the spectrum is TeleMIND, which provides memory evaluations for remote patients who are showing signs of dementia. Created by the Center for Telehealth and the MIND (Memory Impairment Neurodegenerative Dementia) Center at UMMC, TeleMIND has been launched at three locations. Patients can visit the location closest to them and be examined via live audio and video by a UMMC physician. A health care professional accompanies the patient and facilitates the virtual exam.

According to Denise Lafferty, MIND Center chief of operations, TeleMIND has seen almost 40 patients to date. “It’s challenging for patients in remote areas of the state to make the trip to Jackson to see a geriatric specialist, so offering dementia care close to their homes alleviates the burden of the commute and improves quality of care and treatment compliance through consistency and regularity of visits,” she said. The center hopes to expand the program to additional sites, as well as bring TeleMIND services to residents of assisted living and long-term care facilities and, eventually, to people’s homes.
A Part of Routine Medical Care

As telemedicine continues to advance, the ways in which facilities hope to use the technology to improve the patient experience are advancing as well.

At Spaulding, the plan is to use telemedicine for peer mentoring to connect newly injured or diagnosed patients with people who’ve been living with those same injuries or diagnoses for several years. They also hope to connect brain-injury specialists with patients at home to help them with ongoing medication or symptom management.

Although OhioHealth uses telemedicine primarily for stroke consultations, it has launched pilots to expand its use to behavioral health at Doctors Hospital and Grant Medical Center, and to cardiology at Hardin Memorial. OhioHealth also is looking into adding telerounding and follow-up visits from Stroke Network specialists to partner hospitals.

Currently, not all telemedicine costs are reimbursed by the payers. Medicare provides limited reimbursement, but only for patients in areas considered “remote.” In addition, third-party payers and Medicaid either don’t reimburse for telemedicine visits at all, or don’t reimburse to the extent that they do for traditional office visits. As a result, most organizations providing telemedicine services receive funding (through grants, contracts with other hospitals, etc.) for only a fraction of the services their physicians provide, and cover the rest of the tab themselves.

However, many state legislatures are working to amend that situation. As it improves, advocates agree that in the not-too-distant future, care delivery via telemedicine will be routine.

“We believe telemedicine is the best way to care for our patients in many circumstances, and we hope to offer it to every clinically appropriate patient that comes through our doors,” said MGH’s Sossong.

“It’s all about the patient experience,” she concluded. “There’s no doubt that telemedicine can advance the patient experience by providing the right care in the right place at the right time.”