THE DOCTOR IS (VIRTUALLY) IN

Telehealth at University of Utah Health Care

By Amy Steinbrech

The days of long waits in doctors' offices are quickly becoming a thing of the past—the future of healthcare has arrived, and it looks and feels a lot different than ever before.

Telemedicine is increasing in popularity, as virtual doctor's appointments diagnose patients faster, without patients ever having to leave the comforts of their home.

An emerging field

The University of Utah is leading the way in telemedicine with programs in tele-stroke, tele-oncology and tele-burn, among a host of others. "Telemedicine allows us to provide world-class care to our partner hospitals in the Intermountain West using simple technology," says Nate Gladwell, director of telehealth at University of Utah Health Care.

Telemedicine also allows for faster treatment, which hopefully results in better patient outcomes. "The risk we face is: does faster and more convenient, yet distant, equate to better outcomes? That is open for debate," Gladwell says.

Telemedicine is fast becoming a standard. With minimal investment, a small rural emergency room can have access to world-class, big city doctors. A doctor in a rural hospital who thinks a patient is experiencing a stroke can be connected to a stroke specialist at the University of Utah. The neurologist can offer their potentially lifesaving expertise while seeing the patient remotely. "A little bit of technology connecting specialists in a patient's time of need can dramatically change the outcome for the individual and their family," says Gladwell.

At the University of Utah, the priority for the telehealth department is to extend their specialty care out to smaller hospitals through technology. "We are changing the paradigm of patients having to come to us to have an encounter, and instead we are pushing the encounter out to our patients whether they are at home, on vacation or at work" he says.

Historically, technological advancements were not to the point where telemedicine was a realistic, viable option. Wires and complications made telemedicine better in theory than practice. Today, telemedicine is moving online and into the application space. Gadgets and apps on smart phones allow patients to send data to their healthcare providers. "This works well for the rising generation of millennials that are tech savvy and don't typically have that primary care provider relationship," Gladwell says.

Measuring outcomes

A constant worry for employers is the escalating cost of health insurance. According to Gladwell, the cost per employee for health insurance in 2009 averaged $10,000 and is projected by 2019 to be nearly $30,000. "The rising cost of healthcare is encouraging companies to explore other avenues such as telemedicine," he says.

Investments made by digital healthcare companies have increased dramatically over the last few years, from $1 billion in 2011 to a projected $5 billion in 2015. Providers are buying into telemedicine—but their engagement seems to be shallow at best. Recent data indicates around 2 percent of primary care physicians actually use activity tracking data in clinical practice. Gladwell notes that many questions need to be answered: Does a primary care provider truly understand digital devices? Do they care to? If so, how can digital healthcare companies continue to make the data useful? "Until this data becomes meaningful to your overall health picture, it is just data and numbers floating out there," he says.

So is virtual medicine really working? Gladwell cites a study of virtual care in Colorado where heart failure patients were sent home with a scale and a blood pressure machine. Data was sent to their care team in real time. This study concluded that active monitoring of patients' data, with targeted interventions from the care team, saw a 62 percent reduction in re-hospitalizations.

The lowered rate is a win for proponents of telemedicine. Re-hospitalization rates and other standards of measuring patient outcomes have lead to a slogan providers have begun to take note of: No outcomes, no income. "This sets the tone for how the healthcare industry is shifting into this new space. If you can't prove your patients are healthier after they leave the hospital, the insurer is not going to pay for that hospital visit," Gladwell says.

With a relatively new, evolving field like telemedicine, enough data has yet to be gathered on whether patient outcomes really improve with the technology. John Larsen, project manager for telehealth at the University of Utah, says that it's still unknown whether telemedicine really does result in better outcomes. "Telemedicine has not been shown, in most cases, to produce better outcomes. However, the data is not in yet," he says.

Telemedicine also has hurdles other than getting the technology to patients, according to Larsen—legal, regulatory and billing components. "We constructed these cathedrals of technology and expected everyone to come in, but the idea that we can deliver healthcare to patients on our terms has changed," says Larsen. He points out that while doctors have been treating patients over the phone for years, it is the absence of a physician touching you that is the biggest challenges. "That is a billion dollar problem that has no solution," he says.

The digital revolution

Telemedicine is more than Skyping with your doctor. Putting devices into patient hands, making more complete data available to physicians—all of these things are part of telemedicine and are changing the way patients are cared for.

As with any innovation, research changes the way new data is being utilized. "We routinely conduct studies that have great potential to drive outcomes," Larsen says. The University of Utah is currently conducting a study into the relationship between congestive heart failure and diabetes—patients often experience the conditions simultaneously. Patients with these conditions often retain water, so monitoring their weight is very important, according to Larsen. So practitioners are looking at ways to get devices, such as connected scales, into patients' hands. In this study, a patient steps on the scale and the data is transmitted.

"It is not the device connecting to the patient, it is connecting to a cloud that can chew through the data and tell us what we need to know," Larsen says. Healthcare workers can then monitor patient data and do targeted interventions if needed.

Another study launching this year will focus on children prone to ear infections. A select group of parents will be trained on how to use a digital otoscope, a device used to look inside a child's ear. They will be sent home with one to monitor their child's ear infections and potentially capture images to transmit to their care team.

"These young patients already have detailed records in our system, and if we know the parents have an otoscope, we can intervene in their care faster if needed. We are seeing if we give parents a toolkit to take home, if that reduces time spent in the clinic and results in more timely and cost effective healthcare," says Larsen. UB