

Accelerating Telehealth Adoption

TELEMEDICINE'S ROLE
IN THE VOLUME
TO VALUE JOURNEY





Telemedicine has been part of medical innovation for nearly 100 years – dating back to the early 1920s, with the development of a “wired wireless” electronic stethoscope developed by the U.S. Army Signal Corps for use in ship-to-shore transmission to medical specialists on land. Major technological advances just in the past decade, along with the transition to value-based healthcare, are driving new opportunities in the telehealth.

There is growing evidence that telehealth [expands access to care](#), improves [health outcomes](#) and healthcare quality, increases patient engagement, and [reduces healthcare costs](#).

Yet there remains concern that telehealth may only supplement in-person services, not replace them, resulting in higher utilization and spending for payers and patients. This concern carries weight because paying for volume of services rather than value of outcomes still dominates healthcare economics.

This URAC Industry Insight Report offers perspectives from those on the front lines of telehealth.

In general, these champions of telehealth agree that greater progress depends on the continued transition from volume to value. This report describes the role of telehealth in that journey.



One of the earliest known references to telemedicine appeared in a June 1921 article in *Scientific American*, titled “[Diagnosis by wireless](#),” about how medical information was transmitted to shore-based medical specialists to manage emergencies at sea. The idea of direct-to-consumer telehealth was depicted in a *Radio News* Magazine futuristic cover story published in April 1924, “The Radio Doctor – Maybe!,” with an illustration that depicts a patient being seen via video by a physician on a large radio-like machine. The 1950s and 1960s saw the growth of telemedicine with television and video technology being used to transmit images and complex medical data. Improvements in technology, including faster, higher-resolution data transfer greatly increased the availability and capabilities of telemedicine.

Telehealth has made quantum leaps in the past decade – fueled by innovative technology breakthroughs and consumer demand.

The innovators featured in this Industry Insight Report are pushing the boundaries of telehealth and seeing benefits created through an array of these means and methods, including:

- Clot-busting medication delivered to new stroke patients more than twice as fast as the national average
- Up to 20 percent reduction in intensive care unit mortality
- Raising nursing homes’ Medicare quality measures ratings
- Reducing unnecessary emergency room visits and services for geriatric patients
- Improvements in clinician geriatric mental healthcare knowledge and treatment practices.

As noted, however, there are questions about the wider adoption of telehealth. The concern was articulated in a [March 2018 report to Congress](#) by the U.S. Medicare Payment Advisory Commission.

“Evidence is mixed about the efficacy of telehealth services,” the commission stated. It cautioned that expanding telehealth could “drive increases in health care spending by increasing utilization or promoting unnecessary use.” The commission reported that between 2014 and 2016, telehealth visits per beneficiary increased 79 percent.

As its name suggests, the commission is designed to focus primarily on costs. It questions the viability of telehealth within the conventional fee-for-service structure.

“Some believe that telehealth is better suited for capitated or bundled payment settings where financial risk is shared by providers or payers,” the commission states.

Payer-Providers Demonstrate Value in Telehealth

It is no coincidence that several organizations active in telehealth operate as both payer and provider. They have a stronger incentive to invest compared to hospitals and healthcare providers that are not integrated.

Payer-providers like the University of Pittsburgh Medical Center (UPMC) are best structured to take advantage of telehealth, says UPMC Telemedicine Executive Director Natasa Sokolovich.

"Until we truly shift the national payment model to value-based and outcomes-based, we are much better positioned because we have both sides of the house," Sokolovich says.

Payer-providers own the data and use analytics to deploy telemedicine strategically. Their integrated structure enables them to efficiently manage cost, access, quality, and convenience to deliver telehealth services while preventing overuse.

UPMC and another prominent payer-provider, Kaiser Permanente, are demonstrating the value of telehealth in not only cost savings, but in improved health outcomes, quality of care, and patient satisfaction.

KAISER PERMANENTE: TELESTROKE PROGRAM SPEEDS DELIVERY OF CLOT-BUSTING MEDICATION

Kaiser Permanente published evidence in December of quality improvement with its telestroke program. One of the nation's largest not-for-profit health plans, the organization also provides care for its 12.2 million members through the Permanente Medical Groups.

The groups continuously develop and refine medical practices to help ensure that care is delivered in the most efficient and effective manner possible, the company says.

Region-wide adoption of an integrated telemedicine program is contributing to this mission, according to [results published in the journal Stroke](#).

As detailed in the article, Kaiser Permanente hospitals in Northern California delivered an intravenous clot-busting medication called tissue-type plasminogen activator to new stroke patients more than twice as fast as the national average.

Also known as alteplase, the drug dissolves the stroke-causing clot and restores blood



flow to the brain. The time to assess a patient and administer the drug is known as “door-to-needle” time.

Medical guidelines recommend door-to-needle times of 60 minutes or less for intravenous alteplase. Yet studies show that less than 30 percent of acute ischemic patients in the United States are currently being treated within this window, the authors report.

The Kaiser Permanente study shows that across its 21 Northern California hospitals, 87 percent of stroke patients were treated in 60 minutes or less.

The company calls this telehealth program Stroke EXPRESS (EXpediting the PRocess of Evaluating and Stopping Stroke). To deliver it, emergency departments in Northern California are equipped with telestroke carts, which include a video camera and access to scans and tests results, enabling the stroke specialist to conduct a patient’s neurologic physical exam even when they are many miles away.

In developing Stroke EXPRESS, a major challenge was how to reconfigure patient intake to make it more efficient. Traditionally, an emergency department nurse would first

see a stroke patient, then the emergency physician, and finally the neurologist. In effect, there were three different healthcare practitioners declaring, “Holy smokes you’re having a stroke,” says co-author of the Stroke article Jeffrey Klingman, MD, chair of chiefs of neurology for Kaiser Permanente Northern California.

Becoming more efficient involved the use of lean methodology to determine which steps added value to stroke treatment, and which did not, Klingman said. It also demanded “people who are highly committed to making the change.”

Today, paramedics provide advance notification to the emergency department that a stroke patient is on the way. A “stroke alert” notifies a stroke neurologist, who meets the patient upon arrival, in person or via video, to coordinate the stroke alert, Kaiser Permanente says. Pharmacists prepare the clot-busting medication early so it is ready to be administered once a radiologist has read

neuroimaging and confirmed that the patient is not having a hemorrhagic stroke and is thus a good candidate for the drug.

“Processes that used to happen sequentially during a stroke alert, one after another, are now happening at the same time,” Klingman said. Improving coordination “allows us to



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quickly, safely and confidently provide evaluation and treatment” to stroke patients who can benefit, he added. Stroke EXPRESS was rolled out in all Kaiser Permanente hospitals in Northern California from September 2015 to January 2016. The researchers compared Kaiser Permanente members treated with the drug in the nine months before implementation (337 patients) with those treated in the nine months afterward (557 patients).

Key to program success is the ability to pay directly for the services of a stroke neurologist, Klingman said. “We wanted the doctor to be ready with a 30-second response.” Being a payer-provider “made it easier for us,” he added.

UNIVERSITY OF PITTSBURGH MEDICAL CENTER: “TIME IS TISSUE”

Like Kaiser Permanente, UPMC is also driving growth in telehealth – starting with their telestroke program launched in 2006. As described in [The URAC Report](#), UPMC’s 24/7 TeleStroke program was designed to facilitate visits to community hospitals where access to a stroke-certified neurologist was lacking.

Telestroke is often the first service line that prospective partner hospitals seek when discussing telehealth options with UPMC, according to Sokolovich. There is a shortage of neurologists with the required skill level in Pennsylvania and nationwide. The stroke certified tele-neurologists and the UPMC TeleStroke program “make a huge clinical impact on patients who don’t have access” to these specialists, Sokolovich says.

“The way we look at it, time is tissue. And the faster you can get the clot-busting drug started the greater the likelihood you will prevent further damage to the brain tissue.”

Technology and new workflows continue to improve door-to-needle time at UPMC. Their success, however, relies less on cutting-edge advances and more on solving “common operational challenges,” Sokolovich says.

These challenges include:

- Coordinating between multiple locations,
- Navigating resources that don’t necessarily report to you, and
- Determining technical, administrative, and contracting resources.

To make operational details come together later in the projects, UPMC first outlines the type of champions and leaders needed at external hospitals, also known as originating sites. The staff at these partner hospitals need to mirror as close as possible the staff at UPMC’s sites.

People external to the program sometimes ask why it is so difficult to implement telehealth, Sokolovich adds. These observers see it as just another way of care delivery. In truth, telehealth — with all its detailed nuance — is more like launching a completely new service, she says.

To smooth the path with new partners, including many who have never implemented telehealth, UPMC provides a template to guide their planning, as well as “hand holding” when needed, she adds.

The consultative approach is working. Since its TeleStroke program began 12 years ago, UPMC has expanded both in-patient and out-patient telehealth services. These services now include over 60 clinical specialties at more than 106 locations, and direct to patients' homes since 2013 via UPMC AnywhereCare. More than 25,000 patients have accessed on-demand clinical care via the AnywhereCare platform.

The economic impact of UPMC AnywhereCare visits which are available for low-acuity conditions, like fever, cold & cough, sinusitis, flu and other common ailments that often result in an urgent care, emergency room or retail visit, is regularly monitored and analyzed by the UPMC Health Plan economic analytics team.



The initial analysis compared the use of an AnywhereCare on-line, virtual visit with the cost of an Emergency Department, urgent care, retail clinic, or primary care office visit and showed a potential savings of \$86.64 per episode of care. As the cost of the “brick and mortar” care options continue to increase, the cost savings potential has increased, with the most recent economic analysis showing a cost savings of \$131.71 per episode of care.

In addition, consumers and providers consistently rate their experience with the AnywhereCare virtual visit as a 4.8 to 4.9 out of 5 stars. Thus, you can quickly see how educating consumers about the option to access UPMC AnywhereCare is both a consumer and provider/payor satisfier.

BALANCING INCREASED COST WITH IMPROVED OUTCOMES

Telestroke services show how potential cost increases are balanced by strong evidence of access expansion and quality improvement. New Medicare rules take this evidence into account, easing restrictions on coverage for telestroke in rural areas starting in 2019, Sokolovich said.

Success in telehealth at UPMC and other organizations is encouraging but only the tip of the iceberg.

"We are not very far along in showing value," says consultant Martin Kohn, M.D. As former chief medical scientist at Sentrian, Kohn worked to reduce preventable hospitalizations using big data and predictive analytics. Sentrian integrates home

monitoring with longitudinal health data to help patients with complex chronic diseases.

Such telehealth strategies will not see wider adoption until paying for outcomes like reduced hospitalization become more common, Kohn says.

Still, programs that show the benefits of telehealth remain a stepping stone to this future state.



Project ECHO Model “Moves the Dial” for Underserved Populations

The key to a successful transition to value-based healthcare may be [Project ECHO](#)[®] -- a telehealth distance-learning model that helps rural clinicians acquire new expertise and provide evidence-based healthcare to underserved patients by consulting with experts in major cities.

The University of Rochester Medical Center (URMC), Rochester, NY, launched a geriatric mental health (GEMH) ECHO program in 2014, and has since [reduced emergency department visits by 20 percent and cut costs by 24 percent](#).

Healthcare delivery and payment systems in the U.S. are moving rapidly toward value-based care following state and federal healthcare reform efforts, Michael Hasselberg, Ph.D., URMC director of telepsychiatry and his fellow authors state in a [2017 publication about the project](#).

Project ECHO GEMH was designed with this movement in mind. The goal is to better manage a population that puts high demands on the healthcare system. By educating and mentoring primary care doctors, the project would ensure geriatric mental health needs are addressed more efficiently.

Hasselberg was initially skeptical of getting primary care doctors on board.

“How the heck was I going to convince the primary care doctors to do this?” he says. The challenge was how to convince stakeholders to think less about short-term individual gains and more about the long-term gains for health systems and their populations.

As a solution, Hasselberg approached the C-suite of several New York health systems. His goal was to proactively address resistance from practitioners afraid of losing fee-for-service revenue. The chief executives, chief financial officers, and chief medical officers proved to be a good audience for the core message Hasselberg was delivering.

“We are moving from volume to value in behavioral health,” he reminded them. Geriatric behavioral health patients are “super utilizers,” he said. Organizations that fail to invest now in these populations could suffer heavy losses when full capitation becomes more widespread, he added.

Some health systems saw the light and joined Project ECHO GEMH. For those that resisted, Hasselberg went direct to the primary care practices. Together, they discussed the reality of growing geriatric populations with behavioral health needs and the clear lack of psychiatrists who are equipped to treat them.



By joining the program, these primary care physicians gained the support needed to care for an underserved population.

Interviews conducted with participating primary care doctors found that education and mentoring led by specialists can be an effective approach to building the capacity of frontline clinicians to deliver high-quality, evidence-based care to older adults with mental health needs.

Unnecessary emergency room visits and services for geriatric patients represent “a big driver of expense,” he says. By using telehealth technology to bring expertise on site via video screen, nursing home staff are better trained not to default to emergency

room treatment inappropriately. Sometimes, of course, an ED visit is required. However, in many instances, the patient is suffering from a general dementia issue that can be handled without ED involvement because newly trained onsite nursing home staff have been given the tools to better assess and address the situation.

“It is also helping nursing homes prepare for value-based reimbursement,” Hasselberg says. “There’s a lot of steam” driving the success of this model, he says, evidenced by the fact that he’s recently inked participating deals with another 30 nursing homes in the southern part of New York state including Manhattan.

Further, telehealth has shown success helping nursing homes raise their Centers for Medicare

& Medicaid Services (CMS) quality measures which are measured with 1-5-star ratings. Nursing home facilities have financial incentives to increase their scores. CMS bases its rating on several factors, including citations during inspections, and types and quantities of medicines prescribed. “Understaffed nursing homes are notorious for over-medicating,” Hasselberg says. Another plus: Telehealth can help with gradual dose consultations to reduce dosages or take patients completely off medications when possible.

Telehealth programs like Project ECHO GEMH combined with other services such as telepsychiatry are “moving the dial” in the right direction for underserved populations, especially those in nursing homes, Hasselberg says.



Northwell Health: Consolidating and Expanding to Consumer-Facing Telehealth

Telehealth isn't about implementing niche programs – it's about delivering healthcare with a patient-centric focus with telehealth programs across the [entire care continuum](#). This is the path that New York-based health system Northwell Health has embarked upon.

The largest healthcare provider in New York, with 23 hospitals, 665 outpatient facilities and more than 18,500 affiliated physicians, Northwell began its eICU in 2014, and also has telepsychiatry and telestroke services. Since 2017, Northwell been transitioning to a consumer-facing model, and has launched remote monitoring programs, expanding platforms to use mHealth devices and video portals, and giving patients the ability to connect to providers.

But Northwell Health was facing the problem of too many telehealth systems under one roof. It had several different practice groups operating with their own custom systems. This was a recipe for "chaos," says Martin Doerfler, M.D., associate chief medical officer at Northwell Health.

He directs the Office of Clinical Transformation and is responsible for guiding the advancement of clinical care in accordance with Northwell's strategic aims.

The solution was simple but not easy. "We made a strategic decision to narrow the number of platforms and limit the ability to launch early pilot programs, says Doerfler.

From a system perspective, unification made sense. But the individual providers did not like giving up some of the functionality they had deployed with custom technology.

To develop and execute a system strategy for telehealth, as opposed to niche-focused projects that would eventually need to be tied together, Doerfler and his management team had to stop people from proceeding with their existing plans. "Some of them were not happy with that," he adds.

Northwell consolidated and expanded its telehealth program, narrowing telehealth vendors to two: Philips Healthcare and Avizia. The Philips infrastructure is used for the eICU and TeleStroke program and for inpatient



uses broadly, such as eHospitalist, ED to ED and trauma, explains Doerfler. The Avizia platform (now American Well) is used for office to office and direct to consumer. Northwell is working with Philips and Avizia on cross interoperability of the two platforms, he says.

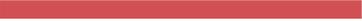
“We need to [transition] to an integrated virtual bricks-and-mortar space,” Doerfler told [mHealth Intelligence](#) in a January 2017 article. “This is certainly at a frontier level, but it has the potential to significantly strengthen the health system and the physician-patient relationship.”

Doerfler points out that so much of telehealth is still centered on the provider, rather than the patient. But expanding to a consumer-centric model opens the door to many new uses of telehealth, including primary care services, nutrition and lactation counseling.

Recently, Northwell Health’s Feinstein Institute was awarded a \$3 million grant to study [home monitoring](#) for diabetes patients in the Hispanic community.



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Using Telehealth Data for Population Health

Half of Medicare patients are treated for five or more chronic conditions each year, and they account for three-fourths of Medicare spending, according to an Emory University official quoted in [a recent New York Times article](#).

Despite this prevalence, “we have no guidelines for managing patients with multiple chronic diseases,” says Kohn. Instead, medicine relies on randomized clinical trials that are disease oriented rather than patient centered. “You can’t optimally manage the patient by managing the individual diagnoses,” he stated.

In the years ahead, telehealth, specifically remote monitoring, will provide the knowledge needed to move medical practice away from this conventional model toward personalization, Kohn said. With real world data collected by remote monitoring, millions of patients can be combined into cohorts that provide longitudinal information to inform medical decisions on a personal basis.

When a patient has multiple problems, the goal is to optimize the overall outcome for the patient. Often, especially when routine management of each diagnosis conflicts with each other (such as a patient with symptomatic coronary artery disease and severe asthma), you cannot safely employ the guidelines designed for the individual diseases. It

gets even more complicated when the patient has multiple problems, such as congestive heart failure, chronic obstructive pulmonary disease and diabetes mellitus.

“My argument is that we need a better way to manage conflicting treatments,” says Kohn. “The only way to learn about that is lots of data over a long period, then mine that data to see which patients do better.”

Knowing how patients are doing day to day is essential when building new models of care based on clinical outcomes rather than fee-for-service, Kohn says. “Doctors need to be rewarded for keeping patients safely out of the hospital,” he said. Remote monitoring ensures that patients remain both supported and independent. As part of a larger telehealth program, remote monitoring can reduce costly waste and improve quality outcomes.

Remote monitoring plays an important role in the effort to move from volume to value-based services in healthcare because it shifts the focus from treating individual diseases to treating individuals.



The Importance of Accreditation Standards

Telehealth is exploding – and this means that the risks are also rising. Issues include regulatory and policy, malpractice complexity, standard of care, cybersecurity, prescriptions, patient privacy and more.

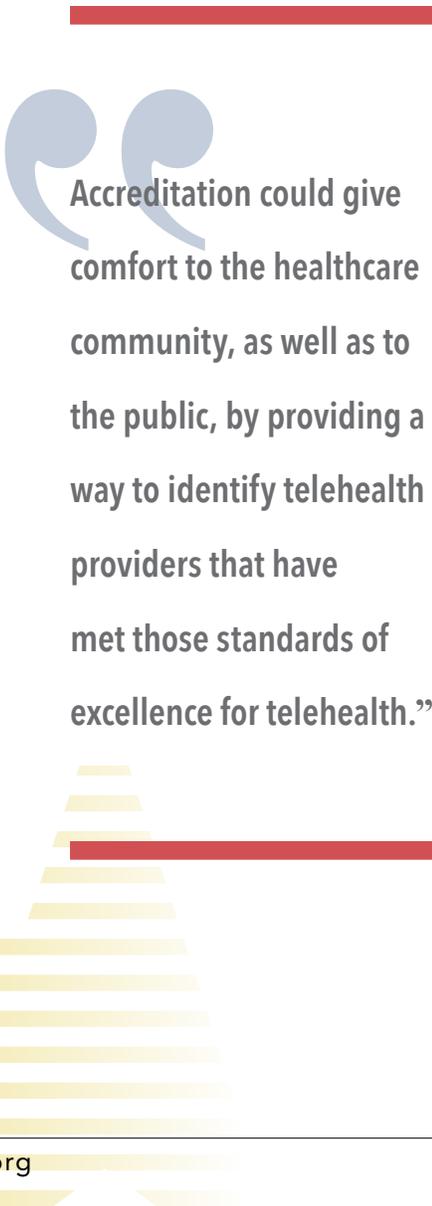
While there are no federal regulations or payer requirements for accreditation to deliver telehealth services, accreditation may be one solution that ensures strategic partners, consumers, legal and regulatory entities that your organization has the necessary components to improve quality of care, increase efficiency and accountability, monitor for compliance, and ensure consumer protection.

While the overall picture is bright, barriers to wider adoption remain. “I don’t think everybody’s bought in,” says Rene Quashie, a former attorney specializing in telehealth, now vice president of policy and regulatory affairs of digital health, Consumer Technology Association. Some providers and patients remain wary that telehealth service can be equal, if not superior, to traditional in-office care.

Standards and accreditation could be part of the solution, says Quashie. “I think that standards would offer a baseline set of requirements that telemedicine practitioners must meet.” Accreditation could give comfort to the healthcare community, as well as to the public, by providing a way to identify telehealth providers that have met those standards of excellence for telehealth.”

Quashie cites URAC accreditation as an especially important seal of approval. “They have experience in accrediting, and a longstanding history doing this. I don’t think you can underestimate the value of a stakeholder with tremendous accreditation standards developing new accreditation standards.”

Not all accreditation programs are equal, Quashie stresses. “There are other standards out there that have been developed by stakeholders who are not accreditors, and you can see the difference in terms of how the standards have been developed, what standards have been developed, and how the standards have been implemented.” URAC also brings a valuable objectivity to the process, he adds.



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Explore
202-326-3943
businessdevelopment@urac.org