



The Promise of Telehealth For Hospitals, Health Systems and Their Communities

Telehealth increasingly is vital to our health care delivery system, enabling health care providers to connect with patients and consulting practitioners across vast distances. Hospitals are embracing the use of telehealth technologies because they offer benefits such as virtual consultations with distant specialists, the ability to perform high-tech monitoring without requiring patients to leave their homes, and less expensive and more convenient care options for patients.

Telehealth has moved into the mainstream. In 2013, 52 percent of hospitals utilized telehealth, and another 10 percent were beginning the process of implementing telehealth services.¹ Consumer interest, acceptance and confidence in telehealth are growing as well. Recent studies on the use of telehealth

services have shown that:

- 74 percent of U.S. consumers would use telehealth services;
- 76 percent of patients prioritize access to care over the need for human interactions with their health care providers;²
- 70 percent of patients are comfortable communicating with their health care providers via text, e-mail or video, in lieu of seeing them in person; and
- 30 percent of patients already use computers or mobile devices to check for medical or diagnostic information.³

Telehealth has many guises, from remote monitoring programs used by hospitals for post-discharge monitoring to reduce readmissions, to hospital emergency departments using remote video consultations to enable patients to receive telepsychiatric screening. Increased use of

telehealth reflects a changing health care landscape with a move toward integrated delivery and new payment models. Also spurred by consumer demand, telehealth is viewed increasingly as an efficient and cost-effective care delivery vehicle.

This two-part American Hospital Association TrendWatch series will examine first the promise of telehealth, focusing on how telehealth is being used by hospitals and the benefits for patients and providers. The second part of the series will analyze the significant legal and regulatory challenges posed by the use of telehealth technologies, including:

- licensure,
- scope of practice,
- liability,
- privacy and security, and
- fraud and abuse considerations.

What are Telemedicine and Telehealth?

Medicare, state Medicaid programs and technology advocates have used two terms, sometimes interchangeably, to describe the use of technology to provide health care services – *telemedicine* and *telehealth*. Each program or definition identifies the scope of services, the types of technologies and the locations where patients can receive telehealth services. Generally, “telemedicine” has been used

to describe a narrower range of health care services, while the term “telehealth” has been used to refer to a broader scope of health care services, including non-clinical services such as training and education that are provided at a distance.

Various entities involved in telehealth describe or define telehealth in different ways:

- **The American Telemedicine Association (ATA)**, an advocacy organization that promotes the use of advanced remote medical technologies, defines telemedicine as the use of medical information exchanged from one site to another via electronic communications to improve a patient’s clinical health status, including an increasing variety of applications and

services using two-way video, email, smart phones, wireless tools and other forms of telecommunications technology.

- **The Federation of State Medical Boards (FSMB)** defines telemedicine as “*the practice of medicine*” using electronic communications, information technology or other means between a licensee in one location, and a patient in another location with or without an intervening healthcare provider. This definition was included in FSMB’s “Model Policy for the Appropriate Use of Telemedicine Technologies in the Practice of Medicine.” The purpose of the model policy is to issue guidance to state medical boards for regulating the use of telemedicine technologies in the practice of medicine and the appropriate standards of care in the delivery of medical services directly to patients via telemedicine technologies.

- **Medicare** regulations cover a range of “telehealth” services, such as the use of telecommunications and information technology (IT) to provide access to health assessment, diagnosis, intervention, consultation, supervision and information across distance.⁴ However, Medicare does not reimburse for training or education and limits reimbursement to a relatively small set of enumerated services when provided in rural areas.
- **Medicaid** views telemedicine as a cost-effective alternative to the more traditional face-to-face way of providing medical care (e.g., face-to-face consultations or examinations between provider and patient). The federal Medicaid program encourages states to use the flexibility inherent in federal law to create innovative payment methodologies for services that incorporate telemedicine technology.⁵

This flexibility offered by the Medicaid program has led to variation in the 51 different state laws and regulations that affect who can furnish these services and how they are reimbursed by Medicaid and private payers. States differ in their definitions or regulations, which in turn can create a confusing environment for hospitals, health systems, physicians, other clinicians and insurers, particularly when caring for a patient across state lines. As the telehealth sector continues to mature, a standard definition may emerge. For purposes of this TrendWatch series, the term “telehealth” will be used broadly to describe the delivery of health care services, education and information via telecommunications technology, including: videoconferencing, remote monitoring, electronic consults and wireless communications.

The definition of telehealth varies by state, impacting how services are paid for by payers.

Chart 1: Examples of State Law Definitions of Telehealth

State	Definition of Telehealth
California	“‘Telehealth’ means the mode of delivering health care services and public health via information and communication technologies to facilitate the diagnosis, consultation, treatment, education, care management, and self-management of a patient’s health care while the patient is at the originating site and the health care provider is at a distant site. Telehealth facilitates patient self-management and caregiver support for patients and includes synchronous interactions and asynchronous store and forward transfers.” <i>CAL. BUS. & PROF. CODE § 2290.5(a) (6) (2012)</i> .
Missouri	Telehealth is “the use of medical information exchanged from one site to another via electronic communications to improve the health status of a patient.” <i>MO. REV. STAT. § 208.670 (2012)</i> .
Pennsylvania	Telemedicine is the use of real-time interactive telecommunications technology that includes, at a minimum, audio and video equipment as a mode of delivering consultation services. <i>Pa. Dept. of Public Welfare, Medical Assistance Bulletin 09-12-31, 31-12-31, 33-12-30 (May 23, 2012)</i> .
Texas	Telemedicine is the use of health care information exchanged from one site to another via electronic communications for the health and education of the individual or provider, and for the purpose of improving patient care, treatment, and services. <i>25 TEX. ADMIN. CODE § 412.303</i> .

The Three Traditional Modalities of Telehealth

Telehealth traditionally encompasses three main modalities, each with distinct applications within the broader telehealth industry.

One telehealth modality is **Real-Time**, a live, two-way interaction between a patient (or the patient's caregiver) and a health care provider using audiovisual technology. Real-time telehealth services can be used to consult, diagnose and treat patients.

Another telehealth modality is **Store-and-Forward**, involving transmission of a patient's recorded health history (e.g., pre-recorded videos or digital images such as X-rays and photos) through a secure electronic communications system to a health care provider, usually a specialist. The information is used to evaluate a patient's case or, in some cases, render a service outside of a real-time interaction. Store-and-Forward technologies have the advantage of providing access to patient data after it has been collected, and are particularly beneficial to patients requiring specialty

care when providers are not otherwise available locally. This modality also is used for providing services to patients in other countries.

A third telehealth modality, **Remote Patient Monitoring**, involves collection of a patient's personal health and medical data via electronic communication technologies. Once collected, the data is transmitted to a health care provider at a different location, allowing the provider to continue tracking the patient's data once the patient has been released to his/her home or another care facility.

In addition to these traditional telehealth modalities, a growing number of mobile health, or **mHealth**, technologies, applications and online services are being sold directly to patients, such as wearable devices to track health and wellness. The market for wearable devices is expected to increase from \$1.5 billion in 2014 to \$6 billion by 2016.⁶ Patients will be able to benefit from tools such as wearable electrocardiogram (EKG) monitors, which deliver readings

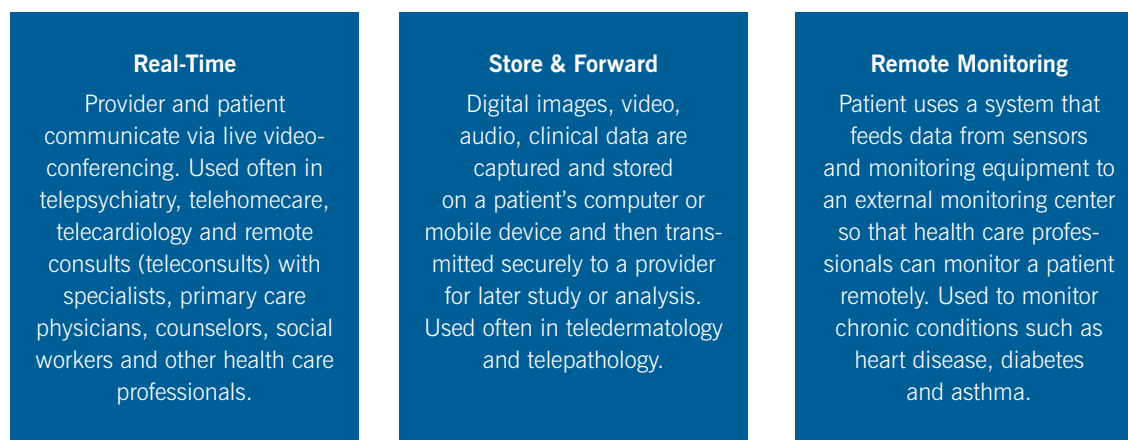
to a treating physician.⁷

Increasingly, information from these devices and applications will become linked to the health information managed by health care providers. For example, Apple is marketing its Health app to patients, allowing them to aggregate personal health information on their Apple devices and link those data to mobile health applications that work with the Apple platform through *HealthKit*. At the same time, Apple is partnering with providers and electronic health record companies to determine how the tool can be used in health care settings.

Similarly, mobile platforms, such as smartphones, will likely become a more significant part of the telehealth platform over time.⁸ Easy access to smartphones, tablets and other communicative devices is a critical component enabling patients to more fully embrace the mHealth applications. Between 2011 and 2016, the number of Americans with smartphones is expected to grow two-fold from 93.1 million to 192.4 million.⁹

Telehealth provides multiple methods for patients and providers to interact.

Chart 2: Three Modalities of Telehealth



Telehealth platforms provide the potential to offer many hospital services remotely.

Chart 3: Hospital-Based Telehealth Platforms

Platform	Description
Telestroke	Remote evaluations, diagnoses and treatment recommendations are transmitted to emergency medicine doctors at other sites using advanced telecommunications technologies.
Teleradiology	Images and associated data are transmitted between locations for the purpose of primary interpretation or consultation and clinical review.
Tele-ICU	Networks of audiovisual communication and computer systems are linked with critical care physicians and nurses to ICUs in other, often remote hospitals.
Telemental Health	Mental health and substance abuse services are provided from a distance (e.g. using videoconferencing and other advanced communication technologies).
Telepathology	The practice of pathology is performed at a remote location by means of video cameras, monitors, and a remote-controlled microscope.
Cybersurgery	Surgeons use surgical techniques with a telecommunication conduit connected to a robotic instrument to operate on a remote patient.
Remote Monitoring	Patients are subject to continuous or frequent periodic clinical via advanced communication technologies.
Telepharmacy	Pharmaceutical care for patients (or supervision to technicians) is provided at a distance using advanced telecommunications technology.
Consultations	Remote consults are conducted with remote specialists, primary care providers, counselors, social workers and other health care professionals.

Applications of Telehealth by Hospitals and Health Systems

Hospitals can provide the base from which telehealth services are offered, thereby expanding access to care for a wider population. Some examples of hospital-based platforms include telestroke, tele-ICU, cybersurgery and remote monitoring.

Improving Access to Health Care and Convenience for Patients in Rural Areas

Approximately 20 percent of Americans live in rural areas where many do not have easy access to primary care or specialist services. The availability of telehealth services to these areas facilitates greater access to care by eliminating the need to travel long distances to see a qualified health care provider. Telehealth also can fill

gaps in subspecialist care. Telepharmacy is another way to offer patients the convenience of remote drug therapy monitoring, authorization for prescriptions, patient counseling and monitoring patients' compliance with prescriptions. With a nationwide shortage of psychiatrists, telepsychiatry can assist patients in need of behavioral health services who may otherwise have to drive hours to see mental health providers. Telepsychiatry services allow psychiatrists to speak to and evaluate patients in need of mental health services through videoconferencing.

Rural and critical access hospitals (CAHs) are often in need of critical care clinicians to diagnose, manage, stabilize

and make transfer decisions concerning their most complex patients. Tele-ICU programs can help hospitals supplement clinician staffing of their ICU beds.

In addition to improving access, patients are increasingly expecting levels of convenience in health care similar to what is available in the retail and banking sectors.¹⁴ Telehealth, regardless of geographic location, can foster a patient's ability to connect with a primary care physician or health system on a more flexible basis and often without an in-person visit. Patients are able to receive services at a distance by using secure online video services or through secure email, often with the added benefit of reducing travel to health care facilities.

The North Carolina Telepsychiatry Network¹²

Twenty-eight counties across North Carolina do not have a psychiatrist, leading many people to seek treatment in their local hospital emergency departments (EDs). The North Carolina General Assembly in July 2013 established the statewide telepsychiatry system, which was launched in January 2014. The legislature appropriated \$2 million for the program for Fiscal Year (FY) 2013-14 and \$2 million for FY 2014-15. The NC Statewide Telepsychiatry Program is administered by East Carolina University's Center for Telepsychiatry and e-Behavioral Health. All hospitals licensed to operate in North Carolina are allowed to participate. Of North Carolina's 108 hospitals, 49 already are providing telepsychiatry. By July 2015, the remaining 59 hospitals

will also participate in the program.

The North Carolina program was modeled after South Carolina's use of telepsychiatry that has increased access to care for rural communities. It also has contained costs by reducing the number of people admitted to state institutions from hospital emergency rooms. From 2010-13, the average number of patients treated using telepsychiatry grew from 8.7 to 12.3 per day. The length of stay in EDs while waiting for treatment decreased from 48-72 hours in 2010 to less than six hours in 2013.

In a March 2014 study of the program, the North Carolina Center for Public Policy Research found that the use of telepsychiatry so far in the state shows that patients spend less time waiting in hospital EDs and have a lower

likelihood of returning for treatment. The study also found fewer involuntary commitments to state psychiatric hospitals and higher satisfaction for telepsychiatry patients. Specific findings include:

- The length of stay for patients in EDs waiting to be discharged to inpatient treatment declined from 48 hours to 22.5 hours.
- The percentage of patients who had to return for treatment within 30 days at one hospital declined from 20 percent to 8 percent.
- The number of involuntary commitments to local hospitals or state psychiatric hospitals decreased by 33 percent.
- Eighty-eight percent of patients agreed or strongly agreed that they were satisfied with the telepsychiatry services they received.

Improving Quality of Care and Patient Satisfaction

There is a growing body of research illustrating that use of telehealth can significantly improve the quality of patient care. Research conducted in 2013 on nearly 120,000 adult patients from 56 ICUs in 32 hospitals belonging to 19 U.S. health-care systems concluded that ICU telehealth interventions, especially those that increase early intensivist case involvement, improve adherence to ICU best practices, reduce response times to alarms and encourage the use of performance data. In addition, the overall effects of ICU telemedicine programs

were associated with better survival rates for patients and reduced hospital lengths of stay.¹⁵ Significant improvements in the quality of care for seriously ill and injured children treated in remote rural EDs also were achieved by using telehealth consultations with pediatric critical-care medicine physicians at the University of California, Davis Children's Hospital.¹⁶

For several years, the Veterans Health Administration (VHA) has used telehealth for home health monitoring to track vital signs and conditions for patients with chronic diseases or who have been released recently from the hospital. Adam Darkins, former Chief

Consultant for Telehealth Services for the VHA, reported that telehealth services in its post-cardiac arrest care program resulted in a 51 percent reduction in hospital readmissions for heart failure and a 44 percent reduction in readmission for other illnesses. In addition to improved patient care, veterans reported patient satisfaction levels of 84 percent for the home telehealth services provided through the program. VHA's Clinical Video services with real-time video conferencing between VA medical centers and VA Community Based Outpatient Clinics also were rated highly, with a 94 percent patient satisfaction rate.¹⁷

Partnership Extends Medical University of South Carolina Care to ICU Patients in Rural Counties

In August 2013, the Medical University of South Carolina (MUSC) launched a telemedicine partnership with Advanced ICU Care. The partnership with the nation's largest tele-intensive care unit (ICU) provider was made possible in part by a \$12 million grant

to MUSC from the state of South Carolina. Through the partnership, telemedicine and tele-ICU care is provided at community and rural hospitals to help patients with life-threatening conditions in rural counties. Medical staff on-site at the rural hospitals are able to

present a patient's condition to a MUSC physician in real time via sophisticated video conferencing equipment.¹⁵ MUSC board-certified critical care doctors, also called intensivists, virtually treat the patients without needing to transport them to another hospital.

Telehealth Growth and Expansion

Applications of telehealth technologies are filling the need for critical health care services in a variety of specialty areas and across diverse patient populations. Some of the most common conditions for which patients seek telehealth services are acute respiratory illnesses and skin problems, but the list of possible uses of telehealth technologies continues to grow. As patients become more proactive in their health care delivery choices, utilization of telehealth services will increase from an estimated 250,000 patients in 2013 to an estimated 3.2 million patients in 2018.¹⁸

As previously mentioned, the VHA has been a leader in implementing and extensively using telehealth across 151 VHA Medical Centers and over 700 Community Based Outpatient Clinics. In FY 2013, more than 600,000 patients participated in 1,700,000 telehealth episodes of care. This included 2,893 video encounters by the VHA National

Telemental Health Center to patients at 53 sites in 16 Veterans Integrated Service Networks and 24 states. The scope of the VHA's telemental health services includes all mental health conditions with a focus on post-traumatic stress disorder, depression, compensation and pension exams, bipolar disorder, behavioral pain and evidence-based psychotherapy.¹⁹ It can be assumed that the need for these services will continue to grow as more veterans with physical and behavioral health care needs return from Afghanistan, Iraq and other military operations.

Advancing Telehealth through New Health Care Delivery Models

The Affordable Care Act (ACA) has accelerated the use of telehealth technologies by incentivizing Medicare-participating hospitals and other providers to test and implement various types of clinically integrated care models. Congress created the Center for Medicare and Medicaid Innovation

(CMMI) for the purpose of testing "innovative payment and service delivery models to reduce program expenditures ...while preserving or enhancing the quality of care" for those individuals who receive Medicare, Medicaid, or Children's Health Insurance Program (CHIP).²⁰ One of the models being evaluated is the Medicare Shared Savings Program (MSSP), which focuses on coordination and cooperation among providers to improve the quality of care for Medicare fee-for-service (FFS) beneficiaries and reduce unnecessary costs. Eligible providers, hospitals and suppliers may participate in the MSSP by creating or participating in an Accountable Care Organization (ACO). Participating ACOs are encouraged to use telehealth technologies and remote monitoring as a means to help them meet the goals of improving quality and reducing costs.

On Dec. 1, 2014, the Centers for Medicare & Medicaid Services (CMS) issued a proposed rule that would

“ ”
from the field

“Telehealth services in the Veterans Health Administration post-cardiac arrest care program reduced hospital readmissions by 51 percent for heart failure and 44 percent for other illnesses.”

– Adam Darkins, former chief consultant for Telehealth Services, Veterans Health Administration

update and improve policies governing the MSSP and reinforce the agency's commitment to the use of telehealth technologies. In the rule, CMS proposes requiring an ACO to describe in its application how it will encourage and promote the use of technologies such as telehealth services to improve care coordination for Medicare beneficiaries. Noting that ACOs currently have flexibility to use telehealth services as they deem appropriate for their efforts to improve care and avoid unnecessary costs, CMS is seeking information from ACOs and other stakeholders about the use of such technologies, particularly the specific telehealth services and functions that might be appropriately adopted by ACOs.²¹

Current Medicare law governing the FFS (traditional) Medicare program takes

a more narrow view. It imposes geographic restrictions to care and limits on providing telehealth services at home or other locations, such as walk-in health clinics.²² Legislative and regulatory changes are needed to reconcile current Medicare law and the ACA's encouragement of using telehealth health services to help to reduce Medicare care costs.

It should be noted that several Congressional legislative proposals have been introduced that address Medicare coverage of telehealth services. In the 113th Congress, for example, the Medicare Telehealth Parity Act of 2014 (H.R. 5380) was introduced by Rep. Mike Thompson (D-Calif.). The bill would have authorized additional telehealth providers, including a certified diabetes educator or licensed respiratory therapist, audiologist, occupational

therapist, physical therapist or speech language pathologist. It also would have extended Medicare coverage to remote patient management services for certain chronic health conditions. In addition, the legislation would have authorized additional sites to be covered by Medicare, removing many of the current geographic barriers.

Employer-driven Telehealth

Employers also are driving the growth of telehealth services. Some employers are choosing to offer their employees access to telehealth services, such as those offered by Teladoc, Inc., a telehealth provider with a national network of physicians who are U.S. board-certified in internal medicine, pediatrics and family medicine.²³ Employees may contact physicians via telephone or online video

Mayo Clinic's Plan to Bring a Medical Kiosk to its Employees

Mayo Clinic has launched a pilot program to bring health care providers into the workplace using telehealth kiosks. The first "Mayo Clinic Health Connection" kiosk is located on the Mayo Clinic Health System campus in Austin, approximately 40 miles west of Mayo's main campus in Rochester, Minn. The planning for the pilot program began in early 2014, and the first patients will be seen by the end of 2014.²⁷

"Patients can conveniently walk

up to the kiosk without scheduling an appointment and be treated for minor, common health conditions by doctors, nurse practitioners and physician assistants from both Mayo Clinic and Mayo Clinic Health System," said Matt Bernard, M.D., Southeast Minnesota region Primary Care Service Line chairman. "Mayo is committed to reducing health care expenses for employees and employers by improving access to medical services through convenient and

more-affordable care."

The pilot project is expected to "decrease absenteeism, lower costs and increase wellness, a win-win for employers and employees," Bernard said. Initially, the kiosk system will be available to approximately 2,000 Mayo employees and their dependents. Negotiations are underway with other organizations interested in using the Mayo Clinic Health Connection to help drive down their health care costs.

“ ”
from the field

"Patients can conveniently walk up to the kiosk without scheduling an appointment and be treated for minor, common health conditions by doctors, nurse practitioners and physician assistants from both Mayo Clinic and Mayo Clinic Health System."

— Matt Bernard, M.D., Mayo Clinic regional primary care service line chairman

UVA Center for Telehealth

The University of Virginia's (UVA) Center for Telehealth (part of the University of Virginia Health System) has grown rapidly since its inception in 1994. Currently, the Center partners with 132 hospitals, clinics, Community Service Boards (CSBs), health department sites, schools, federally qualified health centers (FQHCs), skilled nursing facilities (SNFs), dialysis facilities and a home telehealth company. These networks have supported more than 40,000 patient encounters in more than 45 sub-specialties across the Commonwealth of Virginia. UVA's health partners send important health information directly to UVA specialists, who review the information before meeting with patients. Using teleconferencing

technology, UVA specialists meet virtually with patients to discuss the best treatment plans.²⁸

The center has measured its success via patient satisfaction data by the number of miles of travel avoided by patients and clinical process metrics. To date, the center has provided 40,884 total telehealth services and saved 14,789,738 miles in travel for patients. Furthermore, hospital readmissions have decreased through UVA's Care Coordination Remote Patient Monitoring program by more than 40 percent.

As the center's programs continue to develop, its director, Karen Rheuban, M.D., anticipates even more robust growth. "With favorable public policies in our state, we are in a position to greatly increase access

to care with innovative solutions. Among these solutions are mobile telehealth applications and patient monitoring programs." Financially, the center has a nearly sustainable program from patient consult revenues and video-teleconferencing support fees. "If you factor in reduced penalties for hospital readmissions or downstream revenues from patient transfers, the institution is more than made whole by the program," explained Rheuban.

Public policies have helped to better integrate use of telehealth services into mainstream health care in Virginia by allowing for reimbursement from the state's Medicaid program and a legislative mandate requiring parity of third party payments for telehealth services.²⁹

reimbursed by only a handful of state Medicaid programs. State Medicaid programs rarely cover e-mail, telephone and fax consultations, unless they are used in conjunction with some other type of communication. Twenty-four states pay providers either a transmission or a facility fee, or both. A few states have adopted the Medicare policy that restricts coverage to only telehealth services that are provided in rural or underserved areas.³¹

Medicare

Medicare's restrictive coverage and reimbursement policies for telehealth services result from the program's narrow definition and scope regarding telehealth:

- Telehealth services may be provided only to Medicare beneficiaries who live

in, or who use telehealth systems in, eligible facilities located in rural Health Professional Shortage Areas, either located outside of a Metropolitan Statistical Area (MSA) or in a rural census tract, as determined by the Office of Rural Health Policy within the Health Resources and Services Administration (HRSA); or in a county outside of an MSA.

- Medicare does not cover telehealth services provided via store-and-forward technology, except in Alaska and Hawaii.
- Telehealth services will be covered only if the beneficiary is seen at an approved "originating site" authorized by law (including physician offices, hospitals and skilled nursing facilities).
- Only Medicare-eligible providers

(such as physicians, nurse practitioners and clinical psychologists) can provide the services.

- Medicare provides coverage only for a small, defined set of services (including consultation, office visits, pharmacological management and individual and group diabetes self-management training services).³²

For services that meet these criteria, hospitals are paid a facility fee of approximately \$25 for each claim to cover services provided to patients in an inpatient or hospital outpatient clinic setting. Off-site hospital-owned sites also are considered "facilities" in the context of a facility fee.³³ Professional fees for provision of telehealth services are the same as those paid for an in-person encounter and are based on

Geisinger Remote Patient Monitoring Reduces Readmissions and Cost of Care

Geisinger Health Plan (GHP), a regional full-service managed care organization serving patients residing mainly in rural central Pennsylvania, developed and has operated a focused heart failure telemonitoring program since March 2008. The program is used to help extend the case manager's reach for monitoring individuals at risk of heart failure.

GHP gives patients Advanced Monitored Caregiving Bluetooth scales with an Interactive Voice Response (IVR) system that is used with landline or cellular phone service to transmit weight measurements and to take the IVR calls. The IVR system includes a list of questions specifically designed to detect changes in physical condition indicating exacerbation, such as shortness of breath, swelling, appetite and prescription management.

One of the key elements of case management is timely follow-up and appropriate touch points with the patients. The telemonitoring program is an important asset to case managers, increasing their efficiency by

enabling them to quickly identify and focus on those patients facing greater needs on a given day. With the near real-time data collected via the telemonitoring program, case managers are able to identify biometric readings or IVR responses that are out of specified ranges and send an alert to the patient's primary care provider. The case manager then collaborates with the primary care team to address the situation, which may include setting up follow-up appointments, activation of a patient-specific medication management plan, reinforcement of self-management activities such as diet, or other updates to the care plan as necessary.

GHP researchers reviewed claims data for patients enrolled in the heart failure telemonitoring program from January 2007 through October 2012.³⁴ Even though the telemonitoring program officially started in March 2008, the study period included one year prior to the official start date to capture any baseline trends and preintervention claim patterns. The results of the claims review indicate

significant reductions in all-cause admissions, 30-day and 90-day readmissions, and cost of care. In a given month of the study, patients enrolled in the program were 23 percent less likely to experience a hospital admission. The odds of experiencing a 30-day readmission were 44 percent lower and the odds of experiencing a 90-day readmission were 38 percent lower than patients not enrolled in the telemonitoring program.³⁵

Also, implementation of the program was associated with approximately 11 percent cost savings during the study period. The estimated return on investment associated with the telemonitoring program was approximately \$3.30 return in terms of cost savings accrued to GHP for every \$1 spent to implement the program.

These findings suggest that the GHP telemonitoring program provides a potentially useful tool for disease and case management of those patients who are likely to benefit from frequent and regular monitoring by health care providers.

the Medicare physician fee schedule. Beginning Jan. 1, 2015, Medicare will cover and pay for several additional services when provided via telehealth, including certain wellness visits,

psychotherapy services, extended office visits, chronic care management and remote patient monitoring of chronic conditions. These additions to the list of telehealth services show

Medicare's intention to expand its coverage for telehealth services, but significant geographic restrictions remain. However, changes to the geographic restrictions require Congressional action.

“ ”
from the field

“The tool that we're introducing into your everyday life is a direct communication line to your care team ... your case manager is going to get the information that's being collected through this call, or when you step on the scale.”

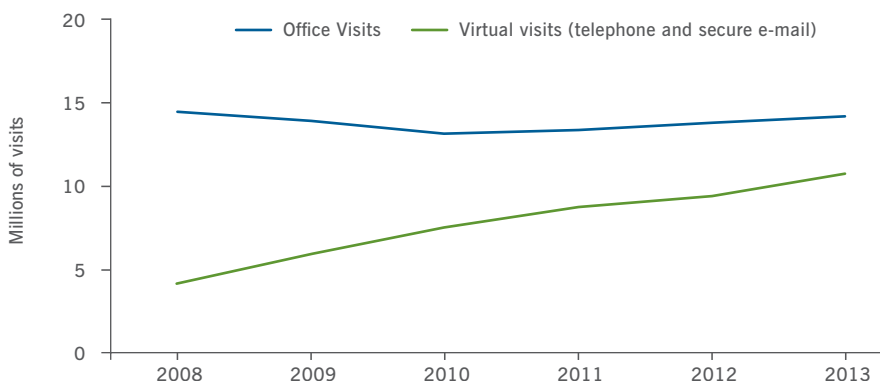
– Doreen Salek, Geisinger health plan's director of population management operations

Provider-based Health Plans

Generally, provider-based health plans are more favorable to telehealth strategies because they are not subject to private or public payer coverage rules. Further, cost savings that are realized from telehealth accrue to the provider-based health plan. For example, in 2008, Kaiser Permanente of Northern California (KPNC) implemented an inpatient and ambulatory care electronic health record system for its 3.4 million members and developed patient-friendly telehealth tools using phone, email and video. The number of virtual “visits” grew from 4.1 million in 2008 to 10.5 million in 2013. KPNC has found that the advantages resulting from the telehealth technologies have been central to its efforts to achieve superior quality and service while keeping costs competitive.³⁶

Kaiser Permanente Northern California has offered virtual visits to enhance access to care and service to patients.

Chart 5: In-Person and Virtual Patient-Physician Visits, Kaiser Permanente Northern California, 2008–13



Source: Internal data from Kaiser Permanente Northern California. Note: Virtual visits are encounters via telephone or secure e-mail; they do not include video visits. aEstimated values based on data for the first three quarters of the year.

Conclusion

Hospitals and health systems are adopting telehealth technologies to provide convenient access for patients and these technologies hold great promise to increase access and patient satisfaction. However, implementation has been hampered by operation challenges, as well as the confusion caused by the patchwork of reimbursement rules and rates for public and private payers. To

date, there is no consensus on criteria or reimbursement rates for telehealth services, while payers are concerned that paying for virtual visits in a fee-for-service system may increase volume and costs.³⁷

The implementation and effective use of Internet, mobile and video technologies offer hospitals, physician groups and health plans ways to

improve their performance and provide greater convenience and value to patients. As new health care delivery and payment models evolve, and the systems to support the use of new technologies improve and become less costly, telehealth offers the potential to improve the efficiency, convenience and cost-effectiveness of our health care system.

POLICY QUESTIONS

Legal and regulatory barriers affect the ability of hospitals to initiate or expand their telehealth services. Hospitals can work with federal and state policymakers to address how to remove these obstacles. Hospitals also need to fully analyze other legal and regulatory challenges implicated by the use of telehealth technologies, many of which are addressed in the second part of this TrendWatch series.

- How can Medicare accelerate its coverage of telehealth services to address increased demand?
- How restrictive are state Medicaid policies regarding coverage of and payment for telehealth services?
- What state insurance, state medical board or Medicaid policy changes are needed to allow clinicians in addition to physicians, such as advanced practice nurses and physician assistants, to provide telehealth services?
- How can hospitals encourage states to enact full parity laws that require private health insurers to pay for services provided via telehealth the same way in-person services are paid?
- How can hospitals and health systems collaborate with state policymakers to develop effective telehealth networks to increase access to limited health care services, such as telepsychiatry?

ENDNOTES

1. AHA Annual Survey, Health Information Technology Supplement. (2013)
2. NTT Data, *Trends in Telehealth* (2014), available at <http://americas.nttdata.com/Industries/Industries/Healthcare/~media/Documents/White-Papers/Trends-in-Telehealth-White-Paper.pdf>; *Survey: 76% of Patients Would Choose Telehealth Over Human Contact*, available at <http://hitconsultant.net/2013/03/08/survey-patients-would-choose-telehealth-over-human-contact/>.
3. *Survey: 76% of Patients Would Choose Telehealth Over Human Contact*, available at <http://hitconsultant.net/2013/03/08/survey-patients-would-choose-telehealth-over-human-contact/>.
4. 42 CFR 410.78
5. Medicaid.gov description of Telemedicine <http://www.medicaid.gov/medicaid-chip-program-information/by-topics/delivery-systems/telemedicine.html>
6. NTT Data, *Trends in Telehealth* (2014), available at <http://americas.nttdata.com/Industries/Industries/Healthcare/~media/Documents/White-Papers/Trends-in-Telehealth-White-Paper.pdf>.
7. NTT Data, *Trends in Telehealth* (2014), available at <http://americas.nttdata.com/Industries/Industries/Healthcare/~media/Documents/White-Papers/Trends-in-Telehealth-White-Paper.pdf>.
8. Akanksha Jayanthi. The Rise of mHealth: 10 Trends. Becker's Health IT and CIO Review (June 27, 2014), available at: <http://www.beckershospitalreview.com/healthcare-information-technology/the-rise-of-mhealth-10-trends.html>
9. NTT Data, *Trends in Telehealth* (2014), available at <http://americas.nttdata.com/Industries/Industries/Healthcare/~media/Documents/White-Papers/Trends-in-Telehealth-White-Paper.pdf>.
10. Alexander Vo et al., *Benefits of Telemedicine in Remote Communities & Use of Mobile and Wireless Platforms in Healthcare*, University of Texas Medical Branch Health (2011), available at http://internetinnovation.org/files/special-reports/91311_Vo_Telehealth_Paper.pdf.
11. NTT Data, *Trends in Telehealth* (2014), available at <http://americas.nttdata.com/Industries/Industries/Healthcare/~media/Documents/White-Papers/Trends-in-Telehealth-White-Paper.pdf>.
12. North Carolina Center for Policy Research. *Evaluating the Use of Telepsychiatry for Rural Mental Health Services*. March 31, 2014. Accessed December 15, 2014. <http://www.nccprp.org/drupal/content/news/2014/03/31/4348/evaluating-the-use-of-telepsychiatry-for-rural-mental-health-services>
13. MUSC Press Release, August 2013 <http://academicdepartments.musc.edu/pr/pressrelease/2013/teleicu>
14. PricewaterhouseCoopers Health Research Institute. New Health Economy. April 2014.
15. Craig M. Lilly, M.D., FCCP et al., *A Multicenter Study of ICU Telemedicine Reengineering of Adult Critical Care*, CHEST 145(3): 500-507 (2014), article abstract available at <http://journal.publications.chestnet.org/article.aspx?articleID=1788059>.
16. Madan Dhamar, et al, *Impact of Critical Care Telemedicine Consultations on Children in Rural Emergency Departments*, CRITICAL CARE MEDICINE (Oct. 2013).
17. "Telehealth Services in the United States Department of Veterans Affairs, Adam Darkins, 2014 <http://c.ymcdn.com/sites/www.hisa.org.au/resource/resmgr/telehealth2014/Adam-Darkins.pdf>
18. Bruce Japsen, *ObamaCare, Doctor Shortage to Spur \$2 Billion Telehealth Market*, Forbes (Dec. 2013), available at <http://www.forbes.com/sites/brucejapsen/2013/12/22/obamacare-doctor-shortage-to-spur-2-billion-telehealth-market/>
19. "Telehealth Services in the United States Department of Veterans Affairs, Adam Darkins, 2014 <http://c.ymcdn.com/sites/www.hisa.org.au/resource/resmgr/telehealth2014/Adam-Darkins.pdf>
20. Pub. L. No. 111-148 (Mar. 23, 2010), as amended by the Health Care and Education Reconciliation Act of 2010, Pub. L. No. 111-152 (Mar. 30, 2010). As amended by ACA, Section 1899(b)(2)(G) of the Social Security Act provides that ACOs "shall define processes to promote evidence-based medicine and patient engagement, report on quality and cost measures, and coordinate care, such as through the use of telehealth, remote patient monitoring, and other such enabling technologies."
21. Medicare Program; Medicare Shared Savings Program: Accountable Care Organizations, CMS-2014-0155-0001, 12/02/2014
22. Pub. L. No. 111-148 (Mar. 23, 2010), as amended by the Health Care and Education Reconciliation Act of 2010, Pub. L. No. 111-152 (Mar. 30, 2010). As amended by ACA, Section 1899(b)(2)(G) of the Social Security Act provides that ACOs "shall define processes to promote evidence-based medicine and patient engagement, report on quality and cost measures, and coordinate care, such as through the use of telehealth, remote patient monitoring, and other such enabling technologies."
23. *Telehealth Special Report: Health Care and Business*, Teladoc Inc, June 14, 2012 <http://www.teladoc.com/employers/resource/telehealth-special-report-health-care-and-business/>
24. Caryn Freeman, *Analysts say Telemedicine Can Cut Costs, Boost Productivity by Reducing Doctor Visits*, Bloomberg BNA (Sept. 2014), available at <http://www.bna.com/analysts-say-telemedicine-n17179894561/>.
25. Jonah Comstock, *Employer Use of Telemedicine to Rise 68 Percent by 2015*, Mobi Health News (Aug. 2014), available at <http://mobihealthnews.com/35737/employer-use-of-telemedicine-to-rise-68-percent-by-2015/>.
26. Towers Watson, *Current Telemedicine Technology Could Mean Big Savings*, available at <http://www.towerswatson.com/en-US/Press/2014/08/current-telemedicine-technology-could-mean-big-savings>.
27. http://www.postbulletin.com/news/local/mayo-clinic-to-bring-a-medical-kiosk-to-an-employer/article_ed6c50df-dc7f-5906-b404-4e37df403d02.html
28. University of Virginia Center for Telehealth (<http://www.healthsystem.virginia.edu/pub/office-of-telemedicine/office-of-telemedicine/clinical-services/patients.html#documentContent>).
29. U.S. House of Representatives, Testimony Before the Committee on Small Business Subcommittee on Health and Technology (July 31, 2014), available at http://smallbusiness.house.gov/uploadedfiles/7-31-2014_rheuban_testimony_final.pdf.
30. American Telemedicine Association, STATE TELEMEDICINE GAPS ANALYSIS: COVERAGE & REIMBURSEMENT, available at <http://www.americantelemed.org/docs/default-source/policy/50-state-telemedicine-gaps-analysis---coverage-and-reimbursement.pdf?sfvrsn=6>.
31. Center for Connected Health Policy, STATE LAWS AND REIMBURSEMENT POLICIES, available at <http://cchpca.org/sites/default/files/uploader/50%20STATE%20MEDICAID%20REPORT%20SEPT%202014.pdf>.
32. 42 C.F.R. § 410.78.
33. Medicare Program; Revisions to Payment Policies Under the Physician Fee Schedule, Clinical Laboratory Fee Schedule, Access to Identifiable Data for the Center for Medicare and Medicaid Innovation Models & Other Revisions to Part B for CY 2015, 79 Fed. Reg. 67547 (Nov. 13, 2014).
34. R. Pearl. "Kaiser Permanente Northern California: Current Experiences with Internet, Mobile and Video Technologies. Health Affairs 33, No. 2 (2014): 251-257.
35. "Can Telemonitoring Reduce Hospitalization and Cost of Care? A Health Plan's Experience in Managing Patients with Heart Failure," Daniel D. Maeng, PhD, Alison E. Starr, DBA, Janet F. Tomcavage, RN, MSN, Joann Sciandra, RN, BSN, CCM, Doreen Salek, BS RN, and David Griffith, BS1, *Population Health Management 2014*
36. "Can Telemonitoring Reduce Hospitalization and Cost of Care? A Health Plan's Experience in Managing Patients with Heart Failure," Daniel D. Maeng, PhD, Alison E. Starr, DBA, Janet F. Tomcavage, RN, MSN, Joann Sciandra, RN, BSN, CCM, Doreen Salek, BS RN, and David Griffith, BS1, *Population Health Management 2014*
37. R. Pearl. "Kaiser Permanente Northern California: Current Experiences with Internet, Mobile and Video Technologies. Health Affairs 33, No. 2 (2014): 251-257.



TrendWatch, produced by the American Hospital Association, highlights important trends in the hospital and health care field.

TrendWatch — January 2015
Copyright © 2015 by the American Hospital Association.
All Rights Reserved

American Hospital Association
800 Tenth Street, NW
Two CityCenter, Suite 400
Washington, DC 20001-4956
202.638.1100
www.aha.org