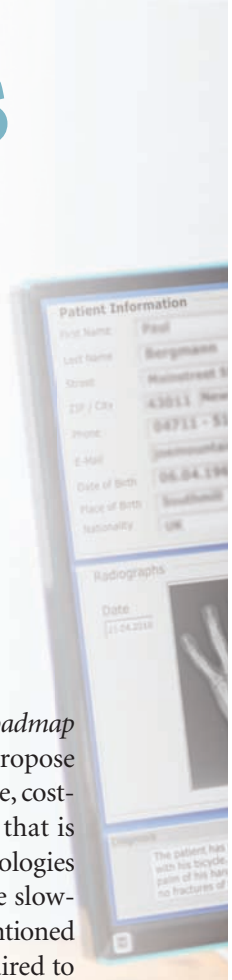
How NPs can help expand telehealth services

Abstract: Consumers of healthcare services are demanding more convenient and accessible options to care. Technologic advancements can support this demand, but telehealth knowledge is lacking. This article will describe the current state of telehealth and examine the role that NPs can play in furthering its adoption.

By Teresa A. Rincon, PhD, RN, CCRN-K, FCCM



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The earliest form of telehealth was introduced in 1878 with the transmission of heart sounds over phone lines; in 1905, an ECG was also transmitted over phone lines.[1,2] The telephone has been a conduit of healthcare services for over 100 years, when it was first adopted by physicians in the early 1900s.[3] By the 1970s, the telephone was used to connect NPs with physicians in the patient's home and a pediatric clinic added a bidirectional (two-way) cable TV to the phone connection to support a TV consultation.[4-6] In 1977, the Sioux Lookout Zone in northwestern Ontario, Canada, began to use slow-scan video equipment (a narrowband technology that enabled multiple still frame image sharing) to connect patients in rural health aid stations staffed with minimally trained indigenous personnel with nurses, NPs, and physicians located in northern primary care clinics.[7] Clinicians today continue using the telephone for triage and prescribing, medical management for acute and chronic illness, case management, patient education, counseling, and communicating diagnostic results (lab and imaging).

In their book *Health Care Without Walls: A Roadmap for Reinventing U.S. Health Care*, the authors propose that healthcare should be a convenient, accessible, cost-effective, and health-inducing system of care that is focused on keeping patients healthy.[9] The technologies available today are leaps and bounds above the slow-scan video system and bidirectional cable TV mentioned earlier, yet the suite of telehealth offerings required to meet the healthcare needs of millions of people in the US is still not widely accessible. These advanced technologies are tools that allow for the rendering of care regardless of where the patient and care provider are located. This article examines the role that NPs can play in furthering adoption of technologies that can improve access to, affordability of, and convenience in healthcare without sacrificing patient safety or care quality.

Telehealth pioneers

According to the Centers for Medicare and Medicaid Services (CMS), qualified distant site providers (practitioners who furnish telehealth services at a distance) include physicians, clinical psychologists, clinical social workers, registered dietitians or nutrition professionals,

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and other advanced practice providers such as APRNs, NPs, physician assistants, certified nurse-midwives, clinical nurse specialists, and certified registered nurse anesthetists.[10] Whether distant providers are at the originating site (where the patient is) or the distant site (remote from the patient), telehealth technologies are important tools that can improve access and affordability of high-quality care.

In the Kaiser Permanente health system, about 50% of more than 120 million patient encounters occur over telecommunication technologies (phone, email, or video).[9] In New York City, people can use kiosks in pharmacies for a video visit with an emergency physician at the New York-Presbyterian Healthcare System.[9] The Veterans Health Administration has been providing telehealth and digital services for more than a decade.[9] But concerns about licensing and credentialing, reimbursement, fraud and abuse, and patient privacy keep some healthcare systems and providers from exploring this emerging care delivery modality. Whether health services are provided in person at a face-to-face visit or via telehealth technologies, maintaining structure and accountability around how clinicians offer health services is crucial.

Telehealth pitfalls

In a recent study examining claims data, researchers reported that direct-to-consumer telehealth visits may lead to overprescribing of antibiotics and underuse of guideline-concordant antibiotic management for pediatric patients.[11] A limitation of studies that use claims data is that these data do not include important variables associated with choice of services. Knowing the reason why parents might choose to use a direct-to-consumer visit with a generic provider pool versus an in-person visit with their primary care provider (PCP) group would be important to know and understand. Would results differ if the choice were between a virtual visit or an in-person visit with a provider from their child's PCP group? Discouraging the use of direct-to-consumer visits in pediatrics may be premature, but learning from these types of studies is important to ensuring safe and effective care.

In 1915, a medical newspaper writer recommended use of the telephone for medication orders be forbidden after a fatal error in medication dosing occurred when executing a telephone order.[12] Over the last century, clinicians have continued struggling with telephone orders.

Every day in the US, hospitals send images over the internet (teleradiology) for interpretation and diagnosis. In fact, by 2010 nearly half of radiology services in the US outsourced some amount of their services.[13] According to a white paper commissioned by the American College of Radiology, the practice of radiology over distance has been at the forefront of innovative technologies that benefit patient care by improving access to radiologic services and subspecialty expertise.[13] The authors of the white paper warn that teleradiology companies that focus solely on report delivery may contribute to devaluing the role of the radiologist as a fully engaged member of the care team.

A look inside the tele-ICU

Remote patient monitoring (RPM) allows patients to use medical devices outside of the acute care setting to perform routine tests, such as capillary glucose levels, vital sign and heart rhythm monitoring, daily weights, health questionnaires, and other self-monitoring information.[14] In late 2017, the American Medical Association's Current Procedural Terminology (CPT) Editorial Panel developed three new RPM codes that were finalized by the CMS and effective in 2019.[15] The use of smartphone apps to monitor for early signs of behavioral-mental health relapses, weight management and physical activity, and management of chronic conditions (heart failure, COPD, asthma, diabetes) has rapidly expanded innovative RPM services.[16-18] Other examples include hospital-at-home RPM services offered to patients in their private homes and in assisted-living environments.[9]

For more than 2 decades, telehealth intensive care units (tele-ICUs) have extended the reach of intensivist physicians, nurses, and advanced practice providers.[19] A tele-ICU provides critical care services using a network of audio-visual communication, clinical decision support tools, and health information systems.[20,21] The first wave of tele-ICUs opened across the country in the early 2000s and now more than 40 tele-ICU centers are providing services to over 400 ICUs across the US.[22] Although consistent outcomes after implementing tele-ICU have been elusive, several prominent studies have led researchers to examine why some programs were more successful than others.[23] Researchers have reported that tele-ICUs provide the following distinct and valuable services:[24-26]

- purposeful and continuous monitoring (surveillance) of physiologic deterioration
- translation of evidence into practice
- expert advice and guidance

- collection and analysis of data and quality performance reporting.

For the last 50 years, APRNs have provided primary, acute, and specialty healthcare across the US.[27] Telehealth tools can be used to further extend those services. The telehealth landscape from a regulatory as well as billing and reimbursement standpoint is changing rapidly. Regardless of whether care provision occurs in a more traditional setting or across distance using telehealth tools, APRNs must adhere to their state's practice and prescribing authority.

Billing and reimbursement

Although billing and reimbursement will continue to be a linchpin in whether more services are provided using telehealth technologies, many telehealth services are being provided and billed for today. The CMS Medicare Learning Network (MLN) Telehealth Services 2019 booklet provides a list of telehealth services.[10] These codes, with the exceptions of tele-stroke and some of the behavioral health/psychiatry codes, can only be used for patients residing in and receiving care in a county outside a metropolitan statistical area or a designated Health Professional Shortage Area in a rural census tract.[10]

The Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment (SUPPORT) for Patients and Communities Act removes the originating site geographic requirements and adds the patient's home as a permissible originating site for telehealth services furnished on or after July 1, 2019, for purposes of treatment of a substance use disorder or for a co-occurring mental health disorder. Beginning on or after January 1, 2020, the SUPPORT for Patients and Communities Act establishes a new Medicare benefit category for opioid use disorder treatment services furnished by opioid treatment programs under Medicare Part B.[28]

Within the context of CMS allowable codes, individual state regulations related to billing and reimbursement must be understood and considered. It is important to note that CMS does not consider RPM a Medicare telehealth service and, as such, these codes can be billed under the following CPT codes:[29]

- 99453, which is the setup and patient education of a device, can be billed for a one-time payment
- 99454 for remote monitoring of physiologic parameter(s), billed every 30 days
- 99457 for 20 minutes or more of clinical staff time for interactive communication between patient-care providers, billed every 30 days.

At the time of this article's publication, only 21 state Medicaid programs provided reimbursement for RPM, 49 states and Washington, D.C., provided Medicaid reimbursement for some form of live video in fee-for-service, and 11 state programs reimbursed for store-and-forward.[30] More information related to state-level laws and reimbursement policies can be found at the Center for Connected Health Policy (CCHPCA) at www.cchpca.org/telehealth-policy/current-state-laws-and-reimbursement-policies.

The CCHPCA describes that the location of the patient (originating site) is considered the "place of service" in a telehealth encounter, which is why the provider of the care must be licensed within the state in which the patient is located.[31] The CCHPCA goes on to explain that some states have begun to provide exceptions that facilitate cross-border healthcare delivery, while others outright ban it. They also go on to describe how the Nurse Licensure Compact and newly created Interstate Medical Licensure Compact are being used to reduce the burden of multistate licensure. An APRN compact has been drafted to allow an APRN to hold one multistate license with a privilege to practice in other compact states, but only three states have joined the APRN compact so far (Idaho, Wyoming, and North Dakota).[32] The compact will not be implemented until 10 states have enacted the legislation. Information related to model APRN compact legislation and key provisions can be found at www.ncsbn.org/aprn-compact.htm.

Balestra described the potential legal and malpractice issues as well as key regulatory requirements associated with treating patients at a distance.[33] The author goes on to describe how the anticipated growth of telehealth will lead to the need to master the technology used to facilitate patient care from a distance and the need to follow best practices to ensure safe and effective patient care. Licensing and credentialing, reimbursement, fraud and abuse, patient privacy, and peer review are all important considerations of care provision, whether providing care at a distance or within a more traditional care setting.

The role of APRNs in expanding telehealth

At the University of California at Davis, School of Medicine, one of the Programs in Medical Education (PRIME) is focused on producing physician leaders who are trained and committed to serving California's underserved rural communities with the use of

advanced telehealth technologies.[34] Rural-PRIME was developed to reduce healthcare disparities related to access to specialists in California by equipping future physicians with extensive training on the use of telehealth and simulation equipment.[34] Although this innovative training program is focused on equipping physician providers, in the same manner, NPs working within their scope of practice can learn how to use telehealth technologies to connect their patients with specialty care, regardless of where they practice.

NPs are being used within the acute and critical care settings to fill physician shortages at the originating site as well as provide services from the remote location. APRNs working with acute, subacute, and primary care environments can utilize telehealth store-and-forward tools (a transmission method that allows messages, images, and/or videos to be stored and sent later) to obtain expert advice in wound management, dermatologic evaluation, and tele-ophthalmology.[35-37] A wide range of psychiatric services can be provided through live-interactive communication as well as store-and-forward of images and video, allowing NPs to work collaboratively with psychiatric-behavioral-mental health experts to ensure that patients receive timely and appropriate evaluations and care.[38] Tele-stroke and other acute telehealth neurology services have been used for more than a decade and are now considered mainstream care.[39,40]

Tele-ICU provides another example of how NPs are being used in both the originating and distant sites to enhance the care for critically ill and injured patients.[41,42] Although mixed results have been reported in the literature, a number of studies have identified benefits and cost-effectiveness of tele-ICU programs, such as decreases in mortality and lengths of stay, increased compliance to best practices, reductions in cost per case, and increased revenue per case.[43-47] For example, at UMass Memorial Health Care, APRNs and PAs work collaboratively with nursing and physician providers in both originating and distant sites to ensure that critically ill and injured patients, wherever they are found, receive high-quality, evidence-based care.[42,43,48,49] At Emory Healthcare, reductions in average spending per care episode were realized after implementing the tele-ICU program, which included deploying critical care trained APRNs at originating sites.[50]

Conclusion

Many other considerations should be examined before starting or engaging with a telehealth program, so connecting with experts in telehealth (clinical, legal, compliance, regulatory) is important to a successful implementation of telehealth services. The American Telemedicine Association, the CCHPCA, the Alliance for Connected Care, and the CMS have many resources available online to assist clinicians and healthcare administrators in making decisions around telehealth services. NPs can engage other clinical team members and healthcare administrators in examining how to provide better, safer care using these new innovative technologies and service lines.

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Teresa A. Rincon is the Director of Clinical Operations/Innovation, at Virtua Medicine, Department of Telehealth, UMass Memorial Health Care, Worcester, Mass.

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