Innovations in Virtual Care During the Pandemic: Implications for the Future

Gregory K. Griggs

COVID-19 turned health care, and most of the world, upside down. Telehealth, along with additional financial support at the federal and state level, helped stabilize the economic situation and provide much-needed care when North Carolinians feared visiting health care facilities. Crisis can breed opportunity, and that is exactly what happened with the use of technology to provide virtual care during COVID-19.

Introduction

When the calendar flipped to 2020, few people could have predicted the challenges health care would face in just a few short months. In many ways, the COVID-19 pandemic exposed everything that is wrong with fee-for-service health care. In the past, health care has been somewhat recession proof. Yet, when patient visits and procedures dried up due to Stay at Home orders in the spring of 2020, many practices and health care systems teetered on the financial brink. By May 2020, 87% of North Carolina's family physicians and pediatricians reported significant or extreme financial impact from the pandemic [1]. Even when accounting for telehealth visits, nearly two-thirds of these individuals reported a 40% or more drop in patient volume [1].

While telehealth has been around for decades, the pandemic exponentially accelerated its adoption. As early as the 1920s, physicians used the radio to give medical advice to clinics on ships. One of the earliest and most famous uses of hospital-based telemedicine was in the late 1950s and early 1960s when a closed-circuit television link was established between the Nebraska Psychiatric Institute and Norfolk State Hospital for psychiatric consultations [2].

The Quick Growth of Telehealth During the Pandemic

Early in the pandemic, the Centers for Medicare and Medicaid Services (CMS) took swift action to expand telehealth, allowing physicians and other clinicians to bill Medicare and state Medicaid programs for both video and audio-only services. In North Carolina, Medicaid and many other payers followed suit, paying for virtual visits at parity with face-to-face visits.

A report published by the Centers for Disease Control and Prevention (CDC) in October 2020 noted a 154% increase in telehealth visits during the last week of March 2020 compared to the same period in 2019 [3]. CMS reported that fee-for-service Medicare beneficiaries only averaged 13,000 telehealth visits weekly prior to the pandemic. In the last week of April, nearly 1.7 million Medicare beneficiaries received telehealth services [4]. In a July 15, 2020, online article in *Health Affairs*, Seema Verma, then the CMS administrator, noted that the expansion of telehealth may have changed the health care delivery system for good. While it will never replace in-person care, Verma said, "Telehealth serves as an additional access point for patients, providing convenient care from their doctor and health care team and leveraging innovative technologies that could improve health outcomes and reduce overall health care spending." [4].

In fact, CMS and NC Medicaid both decided to make many of the telehealth changes permanent moving forward. Some of the immediate benefits of telehealth that the CDC noted during the pandemic included expanding access to care, reducing disease exposure for staff and patients, preserving scarce supplies of personal protective equipment (PPE), and reducing patient demands on facilities [3].

By the end of September 2020, North Carolina Medicaid had processed claims for more than 1.1 million telehealth visits and 350,000 telephonic-only visits. In a press release on September 29, North Carolina Department of Health and Human Services Secretary Dr. Mandy Cohen noted, "Improved telehealth supports our vision of a sustainable, person-centered and innovative NC Medicaid program. We've seen during the pandemic how telehealth is allowing many North Carolinians to get the care they need, and we are building a foundation that will last long after the pandemic ends" [5].

Back to the Basics—How Telehealth Returned Primary Care to the Home Visits of the Past

Primary care physicians across North Carolina have touted the virtue of telehealth visits throughout the pan-

demic, working to provide care in new and innovative ways. Home visits are nothing new to family medicine, but the fee-for-service payment system forced many family physicians to move away from visiting patients in their homes due to the extra time required. Telehealth has reopened a window into patients' lives at home.

Some of the benefits of telehealth visits that North Carolina Academy of Family Physicians members have mentioned throughout the pandemic have included:

Greater Medication Adherence

Physicians have reported that patients who typically forget to bring their medications to an in-person visit have shown the clinician their medication containers during a home visit. Physicians have been able to ensure that the patient is taking the medication appropriately by getting a quick "pill count" and verifying when the patient last refilled a prescription.

Healthy Eating/Healthy Actions

Taking a virtual look into a person's home also provided insight into eating and other habits of patients. Some visits included a look into a patient's cupboard or refrigerator to discuss nutrition. In at least one instance, a physician found their patient with heart failure smoking a cigar during the visit. This provided an opportunity for an intervention around smoking cessation.

Social Determinants of Health

A peek into a patient's living conditions can provide other beneficial information. For instance, some physicians noted that they now understood what may have been triggering additional asthma attacks among their patients. By seeing firsthand moldy walls or carpet, the care team could take action that they may never have been able to before.

Inter-generational Care

In some instances, a primary care physician can see multiple generations of the same family in one interaction. "I got to look into the lives of a grandparent, parent, and grandchild that live together all in one interaction," said Dr. Jessica Triche, a family physician in Chocowinity, in a personal communication with the author. "This gave me greater insight into not one, but three of my patients."

Post-acute Care

In North Carolina Medicaid's Annual Report, Dr. Karen Smith, a family physician from Raeford, discussed her follow-up care for a COVID-19-positive patient who spent 23 days in the ICU. Dr. Smith shared that the psychological aspect of almost dying from the virus was one of the most difficult challenges for the patient. Because of her ability to stay in touch using telehealth, Dr. Smith was able to help this patient cope with the trauma of such a serious illness [6].

Hybrid Visits

North Carolina's primary care physicians took innovation even further during the COVID-19 pandemic by conducting hybrid visits (part virtual, part in person). Several pediatricians noted that they would perform portions of a well-child visit via telehealth and then bring the patient into the parking lot for needed immunizations or other aspects of care that could not be done virtually.

New Insights into the Lives of Their Patients

Numerous physicians reported gaining new knowledge about their patients via telehealth. David A. Rinehart, MD, a family physician who practices in Belmont, put it this way in a personal communication with the author:

"I obtained new insight into my patients that quite frankly had been lost since I quit doing as many home visits. You can learn so much more about a patient as a human being by seeing them in their own environment. Whether you learn about their favorite sports team or their hobbies, it can really add to the trusting relationship between a patient and their family physician."

Remote Patient Monitoring

The use of remote patient monitoring (RPM) also increased during the pandemic, although not as quickly as telehealth. Given Medicare's move to alternate payment models such as Accountable Care Organizations, the use of RPM technology was already growing, but accelerated in 2020. The Center for Connected Health Policy defines RPM as using "digital technologies to collect medical and other forms of health data from individuals in one location and electronically transmit that information securely to health care providers in a different location for assessment and recommendations" [7].

As patients with certain chronic diseases visited physician offices much less frequently during COVID-19, RPM became critical to the ongoing collection of data on the patients' health care conditions. For example, a Bluetooth-enabled scale allows primary care physicians to collect daily weights on a congestive heart failure patient, leading to early detection and intervention if fluid begins to build up. Blood pressure monitors can deliver data directly to the physician's office, rather than relying on patient reporting. One non-North Carolina example of the use of RPM during COVID-19 is Boston Medical Center's monitoring of new mothers who had gestational hypertension or preeclampsia. The center combined EHR data with patient-generated blood pressure data from a cellular-connected blood pressure cuff to help avoid the risk of stroke after pregnancy while limiting the patient's risk of COVID-19 exposure in the health care setting [8].

Pitfalls of Telehealth

As Seema Verma noted, telehealth can never replace the gold standard of an in-person visit. And telehealth at times

can exacerbate existing disparities. Early in the pandemic, NC Medicaid found that while African American beneficiaries made up 39% of the population, they only accounted for 32% of telehealth claims [9]. While the gap in telehealth utilization between African American and White Medicaid recipients closed to some degree later in the pandemic, the use of technology could lead to additional disparities, especially in rural areas with lack of broadband access. In addition, many older patients are not as familiar with new technology such as smartphones or tablets and have trouble accessing care via telehealth. Fortunately, Medicare and Medicaid have both allowed video- and audio/telephonic-only visits, with audio-only visits providing a much-needed lifeline to elderly patients throughout the pandemic.

As the health care system moves to value-based care, there are concerns that telehealth could end up fragmenting care instead of facilitating further coordination. Some policymakers have suggested tying telehealth to the medical home to ensure greater coordination. Having a long-term relationship with a patient and understanding their medical and family history is key to making all care, including telehealth, as effective and efficient as possible.

A policy paper from the Brookings Institution and John Locke Foundation put it this way: "The importance of one's access to primary care is hard to state. For many patients, their primary care doctor will be the health professional that they see the most. If questions around utilization emerge around telehealth, primary care should be flagged as a priority application" [10]. On the other hand, the use of third-party vendors that have no relationship or history with the patient has the potential to further fragment care and potentially increase costs. More research is needed on the cost-effectiveness and quality of care received virtually when no previous relationship exists between the patient and the clinician. In her *Health Affairs* commentary, Seema Verma noted, "As the health care system enters a new normal, it is important to consider whether allowing people with particularly acute needs to be seen by a clinician for the first time via telemedicine, instead of in person, will result in the best possible outcomes" [4].

A Positive Future: Moving to Value

As health care moves from fee-for-service payment to payment models based on outcomes, the use of technology is likely to grow even more. Eventually, how the patient is seen may not matter as much. Dr, Brian Clark, medical director of Bicycle Health, a virtual clinic for treating opioid use disorder, summarized it this way:

"In a medical system that values patient outcomes and holds providers accountable to those outcomes, we drop the telemedicine modifier entirely and instead reimburse for addressing a problem and achieving an expected or better-than-expected outcome" [11].

As we move into the future, the promise of integrating telehealth and other technology into a value-based health care system based on foundational primary care is truly exciting for both patients and the clinicians providing care. Moving forward, using telehealth to extend the medical home can help meet the quadruple aim of higher quality, lower costs, greater patient satisfaction, and greater clinician satisfaction. NCMJ

Gregory K. Griggs, MPA, CAE executive vice president and CEO, North Carolina Academy of Family Physicians, Raleigh, North Carolina.

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