FORUM

translating research into quality healthcare for Veterans

Summer 2021

VA | **U.S. Department of Veterans Affairs**

Veterans Health Administration
Health Services Research & Development Service

Commentary

VA: A National Leader in Adoption of Telehealth

Neil C. Evans, MD, and Kevin Galpin, MD, both with VA's Office of Connected Care, Washington, DC

VA has long been considered a national leader in the use of telehealth, connecting Veterans with critical VA clinical services in their homes, in their communities, and in VA facilities. VA's telehealth efforts are enhancing the accessibility, capacity, quality, and experience of VA healthcare for Veterans, their family members, and their caregivers. Telehealth is an essential part of VA's long-term strategy. VA's connected care mission is to deliver high-quality Veteran-centered care, optimize individual and population health, advance healthcare that is personalized and proactive, and enhance the healthcare experience through virtual modalities of care. In driving toward this goal, VA strives to provide trusted care to Veterans, anytime and anywhere.

VA's telehealth efforts reach millions of Veterans every year. In fiscal year 2020, more than 1.6 million Veterans used telehealth to access VA care. It is this vast telehealth experience that enabled VA to pivot quickly to a virtual-first healthcare delivery model during the COVID-19 pandemic, meeting Veterans at the location of their choosing and ensuring delivery of high-quality care while following safe physical distancing guidelines.

VA's Telehealth Modalities

VA delivers telehealth primarily through three modalities: synchronous, asynchronous, and remote patient monitoring.

Synchronous telehealth: sometimes referred to as clinical video telehealth, connects Veterans and their care providers in real time using video modalities of care.

Asynchronous telehealth: sometimes referred to as store-and-forward telehealth, leverages technologies that allow clinical care to be rendered without the provider and Veteran needing to be connected at the same time.

Remote patient monitoring: sometimes referred to as home telehealth, is a combination of both synchronous and asynchronous care. VA care teams monitor Veterans over time, allowing more immediate care interventions by VA and supporting Veterans' long-term health goals.

Care Settings for Telehealth

VA telehealth supports enhanced care delivery in one of three locations – in Veterans' homes and communities, in the VA ambulatory care environment, and in the VA acute care environment. Examples include:

Home and community

- Remote patient monitoring through VA's home telehealth program supports Veterans in their homes as they manage complex chronic illnesses.

- Video visits through VA Video Connect (VVC) support Veterans at home and in their communities, allowing them to receive video-based care at their location of choice.

VA ambulatory care environment

- Clinical video telehealth visits hosted at VA's community clinics allow Veterans to be seen and remotely examined by specialists elsewhere in VA – connecting Veterans to providers best suited to meet their needs.

- Store-and-forward telehealth encounters in specialties such as dermatology and eye care allow primary care teams and Veterans to access key screening tests and clinical opinions more readily and efficiently.

- VA's telehealth-based clinical resource hubs help assure consistent access to ambulatory care across the entire VA network, allowing VA to hire healthcare professionals in markets where professional resources are more readily available to provide services elsewhere – often in rural or underserved areas.

VA acute care environment

- VA's tele-critical care program connects VA's intensive care units with experienced critical care nursing and physician staff located in one of VA's continuously-operating tele-critical care hubs. The program leverages advanced analytics, evidence-based practices, and the benefits of a hybrid team to proactively support local critical care delivery.

- VA's tele-stroke program provides rapid, remote evaluation by highly-trained stroke neurologists, for Veterans who present to a VA emergency department with symptoms of acute stroke – providing faster access to the expertise Veterans need in such a circumstance and supporting local care teams in therapeutic decision making.

DIRECTOR'S LETTER

VA is the leading provider of telehealth in the United States. Thanks to the forward-thinking leadership of prior Under Secretaries for Health and in the Office of Connected Care, VA has recognized for two decades that offering more options for remote care could be better for Veterans. Because VA serves patients who often live far from major medical centers and because we are not constrained by payment structures that disincentivize telehealth visits, VA has developed a robust set of telehealth interventions including store-and-forward technology for services such as radiology and diabetic eye screening; video patient visits, initially between VAMCs and CBOCs but now directly to the home; and text and email communications between patients and provider teams.

As telehealth has advanced, our research needs to catch up. Early telehealth research often focused on the simple question of whether a telehealth visit led to comparable outcomes as a face-to-face visit. In a world where patients will increasingly get their care through a combination of in-person visits and remote contacts, we need to adapt our research priorities to a new set of critical questions.

1) What level of in-person care is optimal for which patients? The paradox is that those high-risk patients whom clinicians most want to see in person are often those for whom travel is most difficult. Given that we have precious little evidence to determine optimal visit frequency, we have even less to inform how to optimize the mix of visit types.

2) What are the long-term effects of more remote care on important patient outcomes such as trust, patient engagement, and continuity? What role does in-person contact, especially with different team members, and human touch play in building a lasting relationship with a provider and a care team? With whom can telehealth increase engagement by reducing barriers to access?

3) How do we integrate team care into a virtual environment and how can technology help us do that more effectively? We know in the COVID-19 pandemic that certain aspects of team-based care suffered; handoffs were harder, intake screenings were foregone, basic data for measurement-based care were often missing (e.g., depression screening scores).

4) How can we conduct group visits effectively in a remote environment? There are many services for which group visits have proven very effective and efficient, such as diabetes education. Many counseling services work more effectively with a peer group. How can we transition those group meetings into a remote environment?

The COVID-19 pandemic has shown us that we can deliver a lot more care remotely than we thought. We are never going back to the pre-COVID-19 era where face-to-face care was the default standard for medical care, any more than we are going back to a world where we spend 100 percent of our work life in an office. The challenge for researchers, in this fast-changing world, is to help our partners learn how to capitalize on all the potential benefits of this new paradigm while reducing and mitigating the potential downsides.

David Atkins, MD, MPH, Director, HSR&D

Adoption of Telehealth Growing

Telehealth is being integrated into core operations throughout VA, with adoption growing remarkably over the past several years. As an example, in 2018 VA set a goal for all ambulatory care providers to be capable of delivering care to their Veterans through VA Video Connect by the end of FY2021. The goal requires staff to have access to the necessary equipment and scheduling support, to complete training, and to successfully initiate at least one video visit. As of third quarter 2021, over 94 percent of primary care providers, over 97 percent of mental health care providers, and over 81 percent of other ambulatory care providers have achieved

the goal, which has proven a critical part of VA's COVID-19 pandemic response. Another example is seen in the growth of VA's tele-critical care program, which was supporting about one third of VA's facilities with ICUs prior to the pandemic. The program quickly scaled to offer support to 100 percent of VA's facilities with ICUs on a temporary basis during the COVID-19 pandemic, and is now initiating permanent support for nearly three quarters of VA facilities with intensive care capabilities.

Impact of COVID-19

The COVID-19 pandemic had a dramatic impact on VA operations and more specifically

led to remarkable increases in the use of telehealth. Safe access to healthcare for those who didn't have a compelling need to be seen in person, in the context of COVID-19 related physical distancing recommendations, quickly became the main driver for VA telehealth utilization.

This change in priorities led to a dramatic shift in the location of care delivery across VA. Instead of providing care in the clinic, VA shifted the location of care for many Veterans to the home, using both video and telephone technology. Prior to the pandemic, 78 percent of video telehealth visits were between one VA clinic location and another VA location, with

The Virtual Care CORE and the Future of VA HSR&D's Telehealth Research

Scott Sherman, MD, MPH, and Navid Dardashti, MPH, both with the VA New York Harbor Healthcare System, Tim Hogan, PhD, and Nicholas McMahon, MPH, both with the Bedford/Boston VA Medical Centers, and Donna Zulman, MD, MS, and Cindie Slightham, MPH, both with the VA Palo Alto Health Care System

Both within and beyond VA, the use of different technologies to deliver healthcare services at a distance has evolved rapidly in recent decades. Telehealth has emerged as an optimal way to address what has been at times a fundamental mismatch between the supply of healthcare providers and their clinical expertise, and the demand among patients for their services. For example, academically-affiliated VA facilities (particularly in urban areas) often had an overabundance of providers across specialties, while Veterans living in rural areas often had limited access to local mental health or specialty care. In response, some VA medical centers created telehealth "hubs." Several years ago, the VA New York Harbor Healthcare System established a telemental health hub to provide virtual mental healthcare to rural parts of Texas, Oklahoma, and Pennsylvania. This allowed efficient use of a stable pool of mental healthcare providers at a time when New York facilities experienced a decrease in Veterans walking through their doors due to demographic and geographic changes. Such lessons learned and corresponding practice changes have been a defining story in recent years across healthcare organizations.

As Drs. Evans and Galpin described in their *FORUM* contribution, the COVID-19 pandemic has served as a powerful catalyst for change in how technologies like synchronous and asynchronous telehealth and remote patient monitoring are used to deliver services. Prior to the pandemic, researchers predicted that by 2025 providers would offer as much as 25 percent of primary care and other visits on a virtual basis. COVID-19 accelerated that time frame by five years. While some preferences for service delivery are drifting back towards pre-pandemic patterns, telehealth and the broader realm of virtual care are now fundamental aspects of the healthcare experience. The task at hand for all healthcare systems, including VA, is to find the right balance of care provided in virtual and traditional, brick-and-mortar settings that matches the needs and preferences of individual Veterans.

In addition to telehealth services, VA offers a broad range of other virtual care technologies to support Veteran healthcare engagement. VA must now determine how to support sustained use of technologies such as VA's patient portal; to identify and test effective strategies that promote wider uptake of technologies like VA's automated texting system and suite of mobile health applications; and to think creatively about how these various modalities can be used together to enhance the overall care experience. Doing so will bring us closer to ensuring that virtual care lives up to its potential to improve both access and quality for patients while decreasing disparities.

The Virtual Care Consortium of Research (CORE) was launched in June 2020 to support and foster collaboration among VA HSR&D investigators conducting research with a virtual care focus. Supported by HSR&D, the CORE's goals are to:

- Facilitate increased adoption and use of virtual care in VA,

- Foster research on the impact of virtual care in VA, and

- Create a robust network of virtual care investigators aligned with the needs and priorities of VA's Office of Connected Care (OCC).

Highlights of the Virtual Care CORE's first year include the following.

1. ***The Virtual Care CORE Network*** – In its first year, over 200 researchers, clinicians, and operational partners joined the Virtual Care CORE network. The CORE offers an email listserv, monthly newsletters, and quarterly Cyberseminars to share information with the network.

2. ***Funding for Pilot Projects*** – Working together with OCC, the Virtual Care CORE circulated two general and one targeted Request for Applications for pilot projects. From the 91 applications received, 18 projects were funded for a total of $2.6 million. This included six projects focused on topics related to virtual care and COVID-19, 11 projects focused more generally on virtual care, and one field-based evaluation of an anesthesia virtual care program. In addition, we provided support for six early career Virtual Care CORE Associate Investigators to pursue projects that would support their virtual care research and career goals.

3. ***Workgroup Development*** – We have created the first two of what we envision to be a series of workgroups that will address issues important to virtual care researchers in the field. The Data Sources Working Group includes investigators from some of the OCC-funded pilot projects, united by a common need to understand existing structures related to OCC and other virtual care data. Comprised of experts in telemental health, the Mental Health Working Group has an initial goal of identifying a core set of measures that can be used more uniformly by the telemental health field. Our hope is that these and additional workgroups will identify common goals and work together to achieve them, thereby facilitating collaboration in the future.

4. ***Virtual Care Portfolio Review*** – To complement existing systematic reviews of the published literature, we are conducting a systematic portfolio review, identifying all VA virtual care studies and projects within the last 10 years. This includes work funded by HSR&D, QUERI, and operational offices.

New EXTEND QUERI Center Pursues Evidence-Based Telehealth Services for Veterans

Teresa Damush, PhD, Dawn Bravata, MD, Linda Williams, MD and Alan McGuire, PhD, all with the EXTEND QUERI and HSR&D Center for Health Information and Communication, Indianapolis, Indiana

EXTEND
Expanding Expertise Through E-health Network Development
VA QUALITY ENHANCEMENT RESEARCH INITIATIVE

In partnership with local, regional, and national VA leadership, the new EXpanding expertise Through E-health Network Development (EXTEND) Center plans to expand the reach and effectiveness of VA care to improve Veteran outcomes by delivering high-quality, evidence-based telehealth services.

The Indianapolis, Indiana-based Quality Enhancement Research Initiative (QUERI) Center has been continuously funded since 2004 and has evolved from an initial, cerebrovascular-focused QUERI Center to its currently funded EXTEND QUERI Center. Over the next five years (FY 21-25), the EXTEND QUERI Center plans to:

- Expand Veteran access to evidence-based care via telehealth services;

- Implement and sustain effective telehealth models that directly improve the quality of delivered healthcare;

- Identify and apply successful strategies for optimizing shared care between primary and specialty care services; and

- Assess the business case for implementing, scaling, and sustaining telehealth care services.

EXTEND Will Implement Multiple Evidence-Based Practices

EXTEND is implementing multiple evidence-based practices that have robust effectiveness evidence and that have the potential for positive impact on high priority Veteran conditions: TeleGrace (coordinated geriatric care); TeleNeurology (Neurology specialty care for outpatient stroke and transient ischemic attack (TIA) management); and TelePrimaryPain (collaborative care for pain in

primary care). We strategically designed these projects to target multiple evidence-based practices implemented across various levels of the emerging telemedicine context – local, VISN, and national levels – to achieve VA's goal of "Anywhere to Anywhere," a 2017 VA-enacted telehealth practice that uses VA Video Connect technology to cross traditional organizational and geographic boundaries, and to connect with Veterans on electronic devices.

TeleGrace is led by Co-Principal Investigator (Co-PI) Dr. Dawn Bravata in collaboration with Veterans Health Indiana Chief of Geriatrics, Dr. Cathy Schubert. The program will be implemented in the Veterans Health Indiana healthcare system. The TeleGrace project supports the overall EXTEND program goal by expanding access to the evidence-based VA Geriatric Resources for Assessment and Care of Elders (GRACE) program. The VA GRACE program involves geriatric-focused home visits, followed by multidisciplinary meetings to discuss each Veteran's plan of care, along with ongoing collaboration with VA primary care. The VA GRACE program directed by Dr. Schubert has been shown to improve outcomes among high-risk older persons. However, VA GRACE is limited by a 20-mile drive distance for the home visits that are an essential component of the program. The TeleGrace project seeks to improve the reach of VA GRACE by implementing virtual home visits to overcome the drive-time distance barrier that currently prevents its widespread application to eligible older Veterans.

The TelePrimaryPain project, led by Co-PI Dr. Alan McGuire, a VA clinical research psychologist, is based upon the robust effectiveness pain trials of collaborators and Indianapolis-based HSR&D scientists Dr. Kurt Kroenke and Dr. Matthew Bair. TelePrimaryPain will focus on providing primary care collaborative pain management

Key Points
- The Indianapolis-based EXTEND QUERI Center is dedicated to improving the effectiveness and outcomes of VA care by expanding Veteran access to evidence-based telehealth services.

- This article describes several evidence-based practices that the EXTEND QUERI Center is currently implementing and which are aimed at high priority Veteran conditions.

via telehealth featuring telehealth nursing care. We will partner with Veterans Affairs Medical Centers across the United States to test two bundles of strategies for implementing this evidence-based, telehealth program. Sites will receive toolkits and guided training plus an enhanced implementation bundle with additional elements such as external facilitation, local site adaptation and tailoring, remote monitoring, and systems redesign. We will compare sites on their ability to reach Veterans and clinics, change in Veterans' pain functioning, and other key implementation outcomes.

TeleNeurology will provide telehealth-based, outpatient, post-stroke/TIA management for Veterans at VA medical centers and community-based outpatient clinics with limited access to neurology care. TeleNeurology is a national initiative by the VA Office of Specialty Care (Neurology) Services. EXTEND QUERI Co-PI Dr. Linda Williams, a VA stroke neurologist and HSR&D clinical scientist, is leading the evaluation of TeleNeurology and plans to compare and evaluate two models of telehealth delivery: e-consultation (neurologist to primary care physician) versus a video Teleneurology consultation (neurologist to Veteran patient). Veterans receiving care at participating VA Medical Centers enrolled in the TeleNeurology program (currently planned for 10 facilities)

across the VHA will be randomly assigned to the e-consult versus usual Teleneurology. We will compare the quality of the consultation using a composite of key evidence-based stroke care processes relevant for secondary stroke prevention and will also evaluate Veteran and VA provider satisfaction with the consultation.

The EXTEND QUERI's implementation core is led by Co-PI Dr. Teresa Damush, an HSR&D Research Career Scientist, and includes a multidisciplinary team of implementation scientists including HSR&D research scientists Drs. Edward Miech, Lauren Penney, and Nicholas Rattray and an HSR&D data scientist, Dr. Laura Myers. The core spans across each project to operationalize bundles of strategies to implement the respective evidence-based

practices, measure and evaluate the context in which implementation occurs, prepare local adaptations, plan and evaluate sustainment, and disseminate implementation playbooks. The EXTEND QUERI Center is featuring a newly developed tool, the Site Implementation Progress Report (the SIPREP), an app-based tool developed by Dr. Miech to assist with implementation and sustainment.

The EXTEND QUERI Center is an expanded level three QUERI Center that now includes additional cores and responsibilities. Dr. Dawn Bravata and Dr. John Ney, health economist from the Bedford VAMC HSR&D Center of Innovation will guide the budget impact analyses across the three targeted programs. The EXTEND QUERI is now charged with mentoring VA scientists on

implementation science and methodology. Drs. Bravata, Damush, and Penney are leading the mentoring program with a combination of didactic learning and applications through a community of practice. In FY21, we have begun mentoring 11 VA clinicians and scientists. Finally, the EXTEND QUERI is also tasked with executing Rapid Response Teams (RRT) to engage operational partners with rapid quality improvement evaluations. Dr. Alan McGuire is leading our first RRT focused on ehealth use in VAMC inpatient mental health services in partnership with Dr. Gayle Iwamasa, PhD, HSPP, National Director, Inpatient Mental Health Services.

For more information about the EXTEND QUERI Center, please contact our administrator, Ms. Jennifer Myers, Jennifer.Myers@va.gov.

the other 22 percent occurring in a Veteran's home or other offsite location. During the pandemic in the first half of FY2021, only 3 percent of video telehealth visits occurred between one VA location and another, with 97 percent of video telehealth visits occurring in a Veteran's home or other offsite location.

VA provided over 3.8 million video visits to Veterans' homes in FY 2020, an increase of greater than 1,200 percent compared to FY 2019. FY 2021 has seen continued high utilization with over 6.7 million video visits to Veterans' homes through early June 2021.

The shift in location of care for Veterans, coupled with many providers shifting at least part-time to their homes, represented a paradigm shift in clinical operations and also contributed to the utilization of telehealth at unprecedented levels.

In addition, the COVID-19 pandemic highlighted the importance of leveraging telehealth to share clinical resources across the enterprise, matching demand for care with supply provided by experts from across the healthcare system. Examples include the clinical resource hubs in every VISN that are meeting clinical needs across each of their networks and that were able to flex to

support pandemic-related demands. VA's tele-critical care expansion described above offers another example.

Post-Pandemic Future

As we now look to a post-pandemic future, we anticipate continued growth of telehealth utilization across VA, making quality VA healthcare more accessible, convenient, and efficient. VHA has endorsed a five-year strategic vision for connected care that is organized into three high-level goals, supported by eight key strategies. The key goals include enhancing Veteran digital engagement, delivering healthcare without walls, and solidifying connected care's foundations. This vision includes deploying digital tools that allow Veterans to connect with VA and their healthcare services at any time, delivering even more care into the home through video telehealth and remote monitoring, expanding clinic capacity by using telehealth to match supply and demand across VA's expansive geographic footprint, enhancing Veteran access to rare national expertise irrespective of the Veteran's location in the country, and much more.

Despite VA's history and leadership as a provider of care through telehealth, understanding how best to leverage modern technologies to deliver

healthcare remotely, at significant scale, and evaluating the impact of doing so, is still an emerging opportunity for research efforts, to include better understanding of the impact of telehealth on health disparities, best practices to enhance adoption and use of virtual care, new barriers to access such as the digital divide, the long term financial impact of expanded telehealth services within VA, the outcomes of telehealth-enhanced VA clinical programs, and more. HSR&D and the VA Office of Connected Care have partnered to launch the Virtual Care CORE (Consortia of Research), which has formed a network of over 200 investigators at more than 36 VA Medical Centers who, along with the broader research community, are helping advance our knowledge in this important and strategic space.

VA is committed to building on its success and leadership as a provider of technology enabled care through telehealth. By continuing its connected care innovation, VA strives to further enhance the human connections that are at the heart of healthcare, to help more Veterans turn to VA as their healthcare system of choice, to enhance quality and convenience, to support efficiencies in care delivery within the VA healthcare system, and to deliver trusted care, anytime and anywhere.

Characteristics of Veterans Who Drop Out of Home Telehealth Programs and Those Who Adhere to the Use of Home Telehealth Technologies

Jenice Ria S. Guzman-Clark, PhD, GNP-BC, FAMIA, Southern Arizona VA Health Care System, Tucson, Arizona, Melissa M. Farmer, PhD, HSR&D Center for the Study of Healthcare Innovation, Implementation and Policy, VA Greater Los Angeles Healthcare System, Los Angeles, California, and Bonnie J. Wakefield, PhD, RN, HSR&D Comprehensive Access & Delivery Research & Evaluation Center, Iowa City VA Healthcare System, Iowa City, Iowa

Use of remote patient monitoring for chronic disease management has been on the rise. Even prior to COVID-19, use of VA's remote patient monitoring program increased, and resulted in reduced VA hospital admissions and length of stay while maintaining high patient satisfaction. With the rapid expansion of tele and virtual health with COVID-19, it is even more critical to understand the high rates of drop-out and poor adherence to the use of remote patient monitoring over time.[1, 2]

A recent retrospective study of Veterans with heart failure helps unravel factors that drive Veteran drop-out from Home Telehealth (HT), and also illuminates the level of adherence to daily HT technology use that many remote patient monitoring programs require.[1, 2] Using VA administrative data linked to HT program data on participants from January through June 2014, we followed patients' use of asynchronous technologies that monitor vital signs and disease symptoms for one year. We calculated weekly compliance levels, time to drop-out, and average adherence at 1, 3, 6, and 12 months. We used a mixed effects Cox regression model to determine the risk of drop-out from the HT Program over a one-year period and general estimating equation with facility as a covariate to model average adherence at 1, 3, 6, and 12 months after first using HT.[1, 2]

Among the 3,449 Veteran participants, average age was 71 years (standard deviation or SD of 10.4 years).[1, 2] The majority were white (75 percent) and male (98 percent). Four percent had one or more hospital readmissions within three days of discharge in the prior year.[1] Fifty-eight percent had a CAN score (Care Assessment Need; probability of hospitalization or death in 90 days) of greater than or equal to 95 percent. Forty-seven percent were enrolled in the VA online patient portal MyHealth*e*Vet, and 30 percent had a depression diagnosis. Thirteen percent died in the first year after HT enrollment.[1] Percent average adherence increased the longer the patient stayed in the HT program, from 53 percent at one month to 69 percent at one year after first using the HT technologies.[2]

Veterans at lower risk of drop-out from HT programs were generally younger, Black, healthier (low CAN score and less functional impairment), and enrolled in MyHealth*e*Vet.[1] In addition, these Veterans had higher average adherence to the use of HT technologies and no prior hospital readmissions. This is problematic as Veterans who are older, sicker, and frail are often the target population for recruitment into the HT Program for chronic disease management and improvement in health service use, and yet they are the ones who are most at risk for drop-out of HT programs.[1] Individualized interventions should be included in the HT plan of care for Veterans enrolled in the HT program to promote continued engagement over time and to address potential barriers to adherence, especially during transitions of care and post discharge.[1] This may include looking at potential functional needs and resources that will allow for continued safe community dwelling and self-management in the home setting. In addition, enrollment in an online patient portal may reflect a measure of familiarity with technology that translates to use of HT technologies.

Average adherence increased the longer the patient remained in the HT program.[2] Poor daily adherence to the use of HT has been posited as a potential reason for lack of benefit found in some randomized controlled trials on the use of remote patient monitoring for heart failure.[1] We examined predictors of average adherence to the use of HT technologies at different time points (1, 3, 6, and 12 months) in Veterans with heart failure.

Veterans who had lower average adherence at all time points studied were younger, Black, and had depression.[2] We found that Black Veterans were less likely to drop out initially, but when in the program, they had lower adherence. This points to the need to educate patients continually on the importance of using their HT technologies on a daily basis and not just episodically. In addition, the association between depression and adherence is particularly concerning due to the high prevalence of depression in patients with heart failure. Depression needs to be addressed in patients with heart failure enrolled in HT to promote continued adherence over time.

In summary, individualized plans of care should be developed for subgroups of Veterans who are a) at high risk of drop-out from HT programs, and b) found to have low adherence to the use of HT technologies. Further study is needed to determine organizational factors that may help prevent HT drop-out and improve adherence (e.g., HT enrollment done face to face instead of by phone) and strategies that target subgroups of patients (e.g., those with depression) who may benefit from additional efforts to improve adherence to HT technologies. Additional research is also needed to fully understand the relationship between racial differences and discontinuation from HT programs and poor adherence.[1, 2]

Key Points
- The rapid increase in the use of tele and virtual health underscores the importance of understanding the reasons for patient drop-out and poor adherence to remote monitoring over time.

- A recent retrospective study of Veterans with heart failure points to several reasons behind Veteran drop out from Home Telehealth.

- The study results point to the need to educate patients continually on consistent use of HT technologies.

References

1. Guzman-Clark J, et al. "Why Patients Stop Using their Home Telehealth Technologies Over Time," *Nursing Outlook* 2021; 69:159-66.

2. Guzman-Clark J, et al. "Home Telehealth Technologies for Heart Failure: An Examination of Adherence Among Veterans," J*ournal of Gerontological Nursing* 2020; 46(7):26-34.

The Role of Telehealth in Increasing Treatment Utilization Among Veterans with Substance Use Disorders

Lewei (Allison) Lin, MD, MS, Rachel Girard, BA, Frederic C. Blow, PhD, all with HSR&D's Center for Clinical Management Research (CCMR), VA Ann Arbor Healthcare System, Ann Arbor, Michigan

Overdose mortality continues to rise in the United States, but major shifts have occurred in who is at highest risk. In recent years, rapid increases in opioid-involved overdose have been driven by heroin and synthetic opioids. However, less recognized are the major increases in morbidity and mortality related to other substances and use of multiple substances. More than 60 percent of opioid overdoses now involve at least one other substance and many involve multiple other substances, with major increases in overdoses related to methamphetamine and cocaine.[1] Simultaneously, mortality related to alcohol use has increased and is implicated in the deaths of more than 95,000 people annually.[2] We now see that the overdose epidemic is really an epidemic of the impacts from substance use and other comorbid medical conditions. Thus, it is critical that the Veterans Health Administration (VHA) continues to lead national efforts to address the impacts of substance use in the Veteran population.

Substance use disorders (SUDs) remain the common denominator and major risk factor for overdose even as trends have shifted in the type and combination of substances. Yet, despite such extensive negative impacts from SUDs, treatment rates remain low and are much lower than other mental health conditions. In 2019, 6 percent of Veterans had an SUD, an increase over prior years, but 85 percent of these Veterans did not receive any treatment for their SUD.[3]

Key barriers to SUD care include stigma (at the societal, healthcare system, and patient levels), the underlying complex symptoms of addiction, and limited accessibility of treatment. Limited accessibility, including both a limited number of clinicians and clinics, and long distances to care, is an under-recognized and modifiable barrier for SUD treatment. Distance to care is especially relevant for SUD care, which typically requires frequent visits over a long period of time in a patient population that often has limited transportation, childcare, and other psychosocial resources.

VHA has been a national leader in developing, testing, and implementing telehealth interventions to improve access to care. Across decades of research, telehealth-delivered treatments have been shown to be non-inferior to in-person treatment, including for mental health conditions. In addition, there are indications that telehealth can potentially reduce barriers to care, including stigma and accessibility. However, to date, there have been very few studies on the use of telehealth for treatment of SUDs, including in VHA.

The COVID-19 pandemic has prompted a rapid and unprecedented expansion of telehealth across health conditions. Specifically for SUD care, changes in national regulations and state guidance have decreased barriers and enhanced support for the use of telehealth in delivering SUD care.[4] These changes were specifically to support social distancing and healthcare operations during the pandemic. Additional data is needed to help inform whether these policies should persist, particularly those impacting essential care for SUDs. Thus, this proves to be a critical time to better understand which patients benefit from telehealth, the impacts of telehealth on both patients and clinicians, and ongoing barriers to SUD care. Below, we describe three ongoing projects aimed at understanding the impacts of telehealth and at informing how to harness fully the potential of telehealth for improved SUD care in the future.

First, to better understand patient experiences using telehealth for SUD treatment, we completed semi-structured qualitative interviews of Veterans with opioid or alcohol use disorders. We conducted the vast majority of interviews after the start of COVID-19. The goals of these interviews were to elucidate design characteristics of telehealth SUD treatment, perceptions of telehealth for SUD treatment, and barriers and facilitators to SUD telehealth care. Our findings demonstrate the wide range of Veteran views and experiences, which depend on patient-specific factors including living environment, comfort with technology, experiences with in-person care, resources, and feasibility of treatment alternatives. Table 1 highlights some of the key themes categorized as potential telehealth advantages, disadvantages, and ongoing considerations to improve the care experience.

Many patients discussed the increased ease and accessibility of treatment they had received via telehealth, which had allowed them to fit ongoing treatment into their busy schedules, saving time and money in travel costs, and providing the ability to discuss sensitive topics in the privacy and comfort of their own homes. However, some Veterans mentioned drawbacks related to personal preference. These Veterans stated that the use of technology "doesn't feel the same," and found value in leaving their home for care. We also identified several ongoing barriers to care, including limited access to the internet and lack of privacy at home, which posed a specific barrier to videoconferencing. Our findings highlight the critical importance of telehealth for those Veterans who have minimal access to in-person specialty SUD care, but also the importance of the option of telehealth for the broader population of Veterans to help decrease stigma and increase accessibility to SUD care.

> **Key Points**
> - Substance use disorder (SUD) treatment rates among Veterans are much lower than treatment rates for other mental health conditions.
>
> - Changes in national regulations and state guidance have decreased barriers and enhanced support for the use of telehealth in delivering SUD care.
>
> - The authors discuss findings from three ongoing projects that explore the potential of VHA's implementation of telehealth for improved SUD care in the future.

Table 1. Themes of Veteran Perceptions of Telehealth for Substance Use Disorder Treatment

Telehealth Advantages	Telehealth Disadvantages	Ongoing Challenges to Address
Convenience "It's just very convenient you know, you don't have to worry about going out, parking, getting gas…just turn on the iPad and you're good to go"	**Decreased connection** "When you remove that human element where you're in the same room with me…you remove the human aspect of it"	**Technology issues** "We tried to do the video thing and like you know I can hear her, she couldn't hear me and then there was no video"
Decreased stigma "I would say that it would be the phone, in some ways I feel better, it makes it easier. The actual non-contact is easier, not because of COVID, but just because it makes it easier to talk to somebody, um, because you can't see if they're judging you or not"	**Lose an opportunity for reflection** "It (driving home from the clinic) gives you that extra hour to really let everything sink in for what you guys have discussed. Instead of someone saying ok yah that was a great conversation on the phone, you were actually interacting with somebody"	**Lack of privacy at home** "I think I still prefer to go in person just because if I'm at home, my family's there you know I don't necessarily want them to hear everything I'm saying either"

Second, in response to increased rates of opioid use disorder (OUD) and opioid-related overdose in the Veteran population, increasing access to OUD pharmacotherapy, specifically to the medication buprenorphine, is a key VHA priority. This priority underscores the need for a better understanding of the impact of telehealth for OUD treatment on patient outcomes. We recently examined VHA's innovative use of telehealth for buprenorphine treatment pre-COVID-19[5] and are currently evaluating impacts from the dramatic increase in telehealth (both phone and video) for buprenorphine treatment on patient outcomes and disparities in care since the start of COVID-19. In many ways, VHA has led the nation in implementing telehealth, and this provides a critical window to examining impacts of this investment on the vulnerable SUD patient population.

Third, a critical barrier to access to OUD treatment is limited capacity because of a lack of trained buprenorphine providers at many VHA facilities. Prior work has identified patient-level demographic and clinical factors that contribute to low buprenorphine treatment. However, we have little understanding of

clinician-level factors, which are a key driver of care delivery. To better understand this, we are currently disseminating a survey across VHA assessing buprenorphine prescriber attitudes and practices initiating and continuing buprenorphine for Veterans with OUD, including via telehealth.

Prior to COVID-19, some clinics were beginning to use telehealth for SUD care but only in limited ways. In contrast, since the start of COVID-19, care has transformed so that telehealth is now the default mode for providing care. Next, we must determine the future role of telehealth and how can it be used to support high-quality patient-centered SUD care in a post-COVID world. Our recent work emphasized the importance of choice for all Veterans and acknowledged that feasible treatment alternatives vary for each Veteran; there are likely some Veterans for whom in-person care is preferred and others for whom telehealth is not only more effective, but may actually increase access to needed treatments that were previously not accessible. In addition, to truly harness the potential of telehealth to increase care for the 85 percent not in SUD treatment, we must develop new models of care that can

help engage patients and deliver more patient-centered and accessible care.

References

1. Gladden RM. "Changes in Opioid-Involved Overdose Deaths by Opioid Type and Presence of Benzodiazepines, Cocaine, and Methamphetamine — 25 States, July–December 2017 to January–June 2018," *Morbidity and Mortality Weekly Report*, 2019; 68. doi:10.15585/mmwr.mm6834a2

2. Esser MB. "Deaths and Years of Potential Life Lost From Excessive Alcohol Use — United States, 2011–2015," *MMWR Morbidity Mortality Weekly Report,* 2020; 69. doi:10.15585/mmwr.mm6939a6

3. Substance Abuse and Mental Health Services Administration. *2019 National Survey on Drug Use and Health: Veteran Adults,* 2020. https://www.samhsa.gov/data/sites/default/files/reports/rpt31103/2019NSDUH-Veteran/Veterans%202019%20NSDUH.pdf

4. Lin LA, Fernandez AC, Bonar EE. "Telehealth for Substance-Using Populations in the Age of Coronavirus Disease 2019: Recommendations to Enhance Adoption," *JAMA Psychiatry*. Published online July 1, 2020. doi:10.1001/jamapsychiatry.2020.1698

5. Lin L, et al. "Comparing Telemedicine to In-person Buprenorphine Treatment in US Veterans with Opioid Use Disorder," *Journal of Substance Abuse Treatment.* In press.

Video-Enabled Tablets Expand Access to Care for Veterans During the COVID-19 Pandemic

Donna M. Zulman, MD, MS, Camila Chaudhary, MPH, Cindie Slightam, MPH, Josephine Jacobs, PhD, all with the HSR&D Center for Innovation to Implementation, VA Palo Alto Health Care System, Palo Alto, California

Access to healthcare is an overarching priority for VA as many Veterans experience barriers to VA clinical and social service use, including geographic and transportation difficulties, physical and mental health challenges, and socioeconomic stressors. Facilitating the use of video telehealth is one way to overcome these access barriers. In 2016, VA's Offices of Rural Health (ORH) and Connected Care (OCC) began distributing video-enabled tablets to Veterans with access barriers. The Tablet Evaluation QUERI is evaluating this program to identify opportunities to improve VA tablet distribution and impact, and to examine the economic costs and benefits associated with the shift to increased video-based care.

The Tablet Evaluation QUERI is guided by the RE-AIM Framework and aims to:

1. Evaluate opportunities to enhance the **Reach, Adoption, and Implementation** of tablets to better target high-need patients;

2. Evaluate the **Effectiveness** of tablets on patient access, clinical outcomes, and experience, and the implementation of the VA digital divide consult;

3. Examine the tablet initiative's **Maintenance** potential through a budget impact analysis; and

4. Evaluate shifting patterns of video-based encounters over the course of the COVID-19 pandemic, with a focus on Veterans with high levels of clinical and social service need.

Since March 2020, video-based care has rapidly expanded as a result of the COVID-19 pandemic. VA encouraged the use of video-to-home visits because of the perceived opportunity for a more comprehensive clinical experience relative to telephone visits, as well as early evidence indicating patients'

preferences for video-based care. The tablet program has facilitated this expansion for Veterans who may otherwise not have had access to video-based care during the pandemic. Between March 1 and April 30, 2020, VA distributed tablets to more than 850 inpatient settings and more than 7,000 high-risk Veterans with access needs, a 33 percent increase from pre-COVID distribution.[1] Over the first year of the COVID-19 pandemic, 75,845 patients received tablets (Figure 1). As was the case prior to the pandemic, the majority of tablet recipients (>70 percent) have a mental health condition, and tablets are most commonly used for mental health visits; however, a growing proportion of video-based visits are taking place in primary and specialty care.

Due to the rapid expansion of video-based care during the COVID-19 pandemic, Tablet Evaluation QUERI investigators examined how patterns of virtual care use varied across patients and VA facilities. Jacqueline Ferguson, PhD, evaluated the shift from in-person to video-based care early in the pandemic period and identified patient populations with lower rates of video-based encounters.[2] She found that older Veterans aged 45-64 and 65+ were substantially less likely to use video-based care compared to Veterans aged 18-44 years. Highly rural and rural dwelling Veterans were 17 percent and 12 percent, respectively, less likely to use video-based care during the pandemic compared to urban Veterans. Homeless Veterans (vs. non-homeless Veterans) were 11 percent less likely to use video care. There were minor, and likely not clinically significant, differences in video-based care by race or ethnicity. Importantly, patients with VA identified disabilities (vs. none) and patients with more chronic conditions were more likely to receive video-based care during the pandemic.

Key Points
- Facilitating the use of video telehealth is one approach to overcoming barriers that Veterans experience in accessing VA clinical and social services.

- VA distributed nearly 76,000 video-enabled tablets during the first year of the COVID-19 pandemic.

- Due to the rapid expansion of video-based care during the pandemic, QUERI investigators were able to examine how patterns of virtual care use changed across patients and VA facilities.

Josephine Jacobs, PhD, examined VA medical center (VAMC) video-based care uptake prior to and early in the pandemic period, assessing environmental and VAMC level factors that predict being in the top quartile of uptake.[3] She found that facilities with more high-risk patients, fewer long-distance patients, and better broadband coverage had higher video-based care uptake for primary care during COVID-19. Facilities with fewer high-risk patients, fewer long-distance patients, and higher levels of video-based care use pre-COVID had higher video-based care uptake for mental health care during COVID-19.

QUERI activities are ongoing, and future work will include a patient survey and cost evaluation. In addition, to better understand the experiences of VA clinicians who are providing video-based care, our team is interviewing providers in primary care, spinal cord injury, palliative care, and cardiology. Based on interviews conducted so far, providers, though experiencing some challenges adjusting to the new technology, have mostly embraced video-based visits, finding them comparable to in-person care. Benefits of video-based visits include enhanced awareness

of patients' home environments, increased patient satisfaction, particularly for those typically travelling long distances, and more efficient use of patient-provider time. Many expressed interest in continuing to offer video-based care even after the pandemic. Providers also described several challenges that will warrant interventions in the future, including technological barriers, and the need for tools to collect vital status information and record other physical patient characteristics by video.

The COVID-19 pandemic has highlighted the importance of access to telehealth and the evolving role that video-based care plays in improving access to care for Veterans. The Tablet Evaluation QUERI aims to monitor and assess the impact of video care on utilization, costs, and patient and provider experiences, to support VA and OCC's mission to expand access to telehealth through health informatics and telehealth technologies.

References

1. Heyworth L, Kirsh S, Zulman D, Ferguson J. "Expanding Access through Virtual Care: The VA's Early Experience with COVID-19," *NEJM Catalyst* July 1, 2020.

2. Ferguson JM, et al. "Virtual Care Expansion in the Veterans Health Administration during the COVID-19 Pandemic: Clinical Services and Patient Characteristics Associated with Utilization," *Journal American Medical Informatics Association* 2021; 28(3):453-62.

3. Jacobs J, et al. "Organizational and External Factors Associated with Video Telehealth Use in the Veterans Health Administration Before and During the COVID-19 Pandemic," *Telemedicine and e-Health* 2021.

Figure 1: Video-Enabled Tablet Distribution to VA Patients During the COVID-19 Pandemic
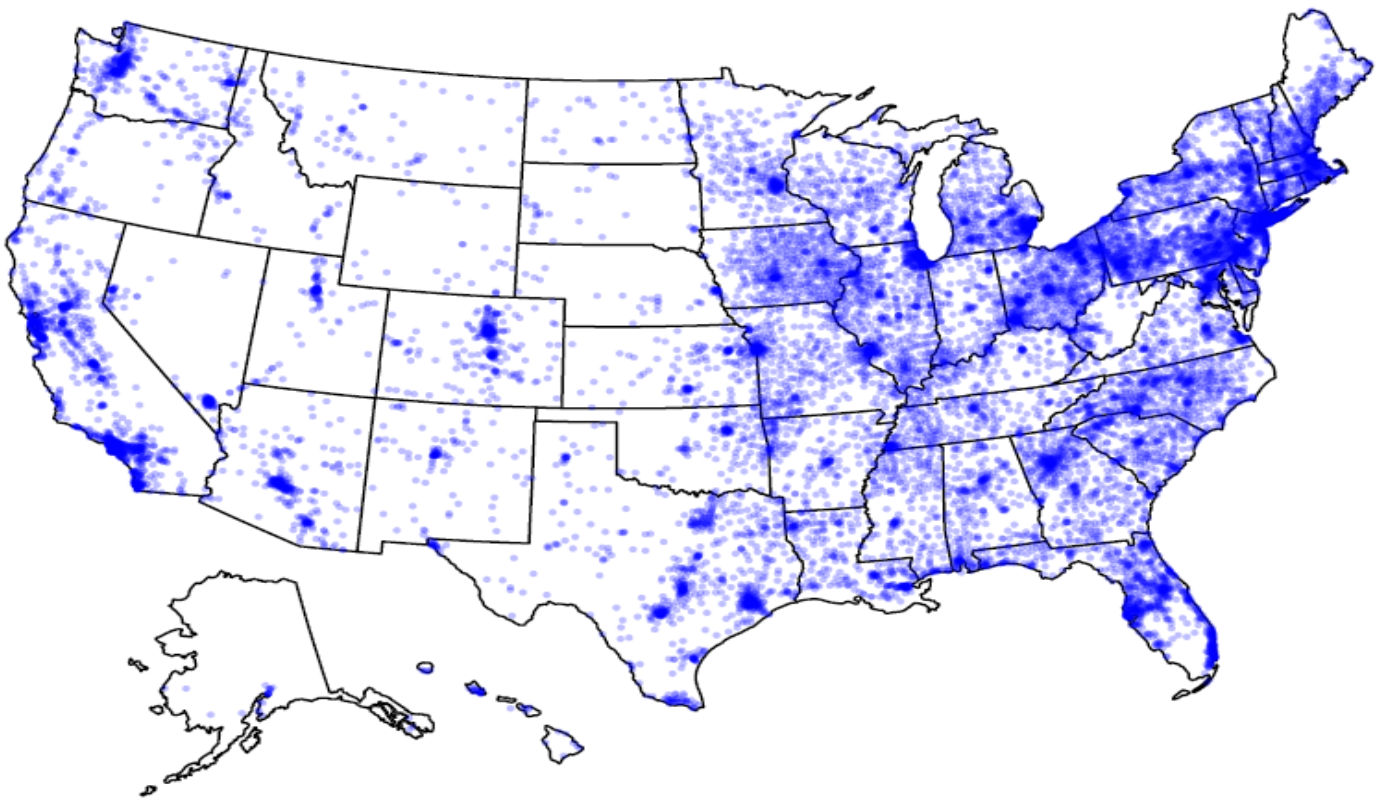
Between March 15, 2020 and March 15, 2021, tablets were shipped to 75,728 Veterans in 14,820 zip codes.

5. **State of the Art (SOTA) Conference** – We have begun planning for a 2022 SOTA aimed at identifying gaps in the literature and helping to target future research. We anticipate three focus areas for this SOTA: 1) strategies to help VA bridge the "Digital Divide" and address disparities in access to virtual care; 2) strategies to increase Veteran adoption of and engagement with VA virtual care technologies; and 3) efforts to identify the most promising opportunities to improve quality and outcomes through virtual care.

6. **Setting Research Priorities** – Combining the portfolio review with existing systematic reviews will help identify gaps in the virtual care literature and high priority questions that merit investigation

in future studies and projects. The SOTA will convene virtual care researchers and operations partners to prioritize those gaps and questions in order to offer guidance for HSR&D's future research agenda and to inform VA policy and clinical operations.

In the coming year, the Virtual Care CORE will focus on strengthening the network, supporting virtual care research and QI projects, and undertaking the portfolio review and SOTA activities that will guide future research, policy, and clinical operations in VA. We welcome new network members! To learn more about the Virtual Care CORE, check out our **website** or contact us at VHAVirtualCareCore@va.gov.

Innovation Update

The Experience of Providers and Patients in Navigating Telehealth Visits

Howard S. Gordon, MD, Jesse Brown VA Medical Center, Chicago, Illinois

Telehealth visits using video communication technology have become commonplace during the COVID-19 pandemic. Using a smartphone, tablet, or computer, a provider can make real-time video and audio assessment of a patient when the patient and provider are in separate locations. However, the technology that enables video visits may also result in unintended consequences for the patient-provider interaction. During a video visit, both technical and interpersonal aspects make communication between provider and patient different than communication during an in-person visit. Provider-patient communication during video visits may be less patient-centered than communication in face-to-face encounters.

In an HSR&D funded study, we interviewed patients and providers to evaluate communication during video visits and designed intervention materials to improve communication. We evaluated the perspectives of both patients and providers during video visits compared with in-person visits. Patients identified several challenges and concerns about video visits compared with in-person visits, including: the perception that providers paid less attention to them; more difficulty finding opportunities to speak up to ask questions or express concerns; and feeling rushed by the provider. Providers reported that the technology associated with telehealth visits changed how they develop therapeutic relationships with patients and how they provided patient education.

With the growing use of video telehealth, providers are increasingly aware of how technology influences communication during a patient visit. One drawback of telehealth visits is that the positioning of the camera can leave patients feeling a lack of eye contact or lack of engagement in the visit, especially when the provider gazes at multiple monitors. In addition, telehealth visits limit the opportunity for the human sensing allowed by an in-person visit (touch and smell), and vision is limited to a two-dimensional viewpoint.

Recognizing how the video visit setting influences provider-patient communication helps suggest remedies to minimize and overcome these challenges. Early in the pandemic, we created an infographic to help patients prepare for telehealth visits (available at https://hsg. people.uic.edu/getreadyvv.html). We also produced an infographic that helps providers conduct more patient-centered video visits. We then used the infographic to produce a brochure for providers that highlights five habits providers may use to navigate successive and successful steps in the medical interview. (https://hsg.people.uic.edu/mtmgraphic.html)