

**Improving Access to Care for Veterans: Removing Barriers and Implementing Facilitators  
in Utilizing the VA Video Connect (VVC)  
in a Primary Care Setting**

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## **Dedication and Acknowledgements**

When we embark on a multiyear journey to accomplish our goals, life does not stop or conveniently slow down. Even with the best-laid plans we frequently face unexpected obstacles along the way. I never anticipated a global pandemic or that I would witness so much death while working as a critical care nurse in the intensive care unit (ICU) at a Veterans Affairs (VA) hospital. The last few years have had a profound impact on me that will take years to process. This journey would not have been possible without the support and encouragement from my family and friends. I would like to dedicate this Doctor of Nursing Practice (DNP) quality improvement (QI) project to them and particularly to my husband, Ed.

The first year of my DNP Program (2019-2020) will be remembered for the COVID-19 global pandemic. By spring of 2020, Americans watched daily as the COVID-19 positivity rates, case counts, hospitalizations, and deaths continued to increase. Wearing masks to prevent the spread of the virus became politicized and created division within America. The pandemic forced businesses to shut down, people were ordered to stay at home, and essential workers were issued travel vouchers to allow them to travel back and forth to work. Supply chains slowed to a crawl while necessities such as personal protective equipment, hand sanitizer, and toilet paper became scarce.

Like many of my DNP colleagues, I worked full time as an ICU nurse while attending graduate school. At the hospital where I worked, N95 masks were kept under lock and key and counted at shift change by the outgoing and incoming Charge Nurses. The N95 masks were intended to be used once and then disposed of after each patient encounter. Supplies were so limited that we were asked to wear the same N95 mask for at least a week before receiving a new one. Across the country, nurses were taking care of COVID-19 patients without access to the

proper protective equipment including masks, gowns, and gloves. Nurses became thought of as “Heroes”.

The pandemic forced schools to close for in-person learning. Students and parents were forced to adjust to virtual learning from the safety of their homes. Our DNP program improvised and held classes over Zoom. Most medical offices were closed for in-person appointments and our clinical rotations were placed on hold due to the pandemic. Students across the globe were impacted, graduations were postponed, and virtual programs were approved to help students obtain the required clinical hours to graduate.

Hospital beds were filled with COVID-19 patients forcing the cancellation of elective procedures. Oftentimes there were no ICU beds available for people with medical emergencies like heart attacks, strokes, or motor vehicle accidents. Most hospitals stopped allowing visitors to better control the spread of the virus. Nurses used FaceTime and smart devices to help connect patients with their loved ones - many times as they were taking their last breath. We held their hands, provided comfort, and made sure that since their families could not visit, they did not die alone. I had never witnessed so much death. The pandemic challenged us physically, mentally, and emotionally. We were forced to depend on each other and utilize teamwork to simply survive.

The pandemic also forced medical offices to close for appointments. Healthcare providers and patients were suddenly forced to use telehealth for virtual visits. I completed part of my DNP clinical rotations at a VA Community Based Outpatient Clinic (CBOC) in the Southeast. As the pandemic forced VA outpatient clinics to cancel in-person appointments, I was introduced to a new telehealth technology known as the VA Video Connect (VVC). Telehealth became the only

means for veterans to receive healthcare from their VA primary care providers (PCPs) between March and August 2020. This experience provided the inspiration for my DNP QI project.

The second year of my DNP program (2020-2021) will be remembered for the ongoing global pandemic but also for the political unrest that surrounded the 2020 United States presidential election. Many medical offices including the VA outpatient clinics had started to reopen for in-person appointments. Several COVID-19 vaccines (Pfizer, Moderna, and Johnson & Johnson) had been developed and were being studied for safety and efficacy. The vaccines were eventually determined to be safe and highly effective and by December 2020, the FDA issued an Emergency Use Authorization (EUA) for the Pfizer and Moderna vaccines. The Pfizer and Moderna vaccines used a new messenger RNA (mRNA) technology. Johnson and Johnson used a more traditional vaccine technology and received FDA EUA in February 2021. Nationwide vaccine distribution proved challenging. The COVID-19 vaccines were made available by eligibility tiers and initially provided to the most vulnerable populations. Long-term care (LTC) residents and healthcare workers were the first group (1a) to become eligible to receive the vaccines.

In spring 2021, our clinical rotations involved working with LTC residents. We were fortunate to be able to complete these rotations because many of these facilities had experienced high death rates due to COVID-19 outbreaks and were on lockdown. Our DNP program and clinical sites required us to be tested twice a week to enter our clinical sites. The LTC residents were confined to their rooms to minimize the spread of the virus. We recognized how this lack of human interaction and touch for nearly a year had negatively impacted their mental, emotional, and physical health. As the semester ended, vaccines were more easily accessible. The spread of the virus slowed and LTC facilities as well as hospitals began to reopen to visitors.

As the fall semester (2021) began, COVID-19 continued to impact our daily lives. Political division and public distrust created vaccine hesitancy which prevented the country from achieving herd immunity. The virus had mutated to the Delta variant which proved more virulent. We experienced more patients requiring intubation and ultimately dying in the ICU compared to the first round of COVID-19. Debates over another shutdown ensued but people were tired of wearing masks and hearing about the pandemic. Most businesses stayed open and schools returned to in-person learning. Medical offices stayed open for in-person appointments and the need for telehealth decreased. Vaccines were approved for children ages 5-11 and boosters were made available to everyone who had been vaccinated. By October 2021, positivity rates began to decline, however, as we celebrated the Thanksgiving holiday, we learned of the new Omicron variant.

By spring semester (2022) we faced the third round of COVID-19 with the Omicron variant. We learned the Omicron variant was more easily transmitted, but less virulent. Nevertheless, hospital beds filled to capacity once again - primarily with unvaccinated patients. Most COVID-19 deaths are now occurring among the unvaccinated. Yet, many people still refuse to take the vaccine.

My biggest fear over the last two years as an ICU Nurse taking care of COVID-19 patients has been that I would unknowingly spread the virus to my family, classmates, and friends or that I would lose a loved one to COVID-19. I have been troubled by the fact that people would refuse to take a vaccine and then come to the hospital for help when they contracted the virus. I wondered if they were so focused on protecting their individual rights that they simply didn't think about putting others, particularly healthcare workers and our families, at risk of contracting a deadly virus. I have had difficulty understanding this mentality, particularly from veterans, my

heroes, the people who sacrificed so much for my freedom. However, after taking care of them, listening to them, and watching so many of them die, I realized that they are the real victims of the political divisiveness and misinformation that has surrounded this pandemic since the beginning. Many of them did not believe that COVID-19 was real and refused to acknowledge that they had contracted the virus. Some of them argued that doctors and hospitals were being paid government incentive money to diagnose patients with COVID-19. Others believed that COVID-19 was just a bad cold or like the flu. They believed the reported positivity rates, hospitalizations, and death counts were politically motivated “fake news”. They never anticipated needing to come to the hospital and certainly never expected to die from COVID-19. As Americans remain divided, COVID-19 continues to mutate, and we all suffer the consequences. However, they paid the ultimate price - with their lives.

Based on my personal and professional experiences throughout my DNP journey it has become my mission to ensure that veterans have access to their healthcare providers from the safety of their homes. I became interested in researching the VVC as a possible solution to providing safe access to healthcare for veterans in situations like the COVID-19 global pandemic. With the continued uncertainty around COVID-19, ongoing variants, and future pandemics, routine healthcare through video telehealth should be made easily accessible for both veterans and providers.

## Abstract

**Background:** In February 2020, the Department of Veterans Affairs (VA) closed many outpatient clinics to in-person appointments in response to the COVID-19 pandemic. As a result, primary care providers (PCPs) were required to utilize telehealth - some for the first time. Before the pandemic occurred, one objective of the 2018 MISSION Act and the VA “Anywhere to Anywhere” initiative was to ensure that 100% of VA PCPs would be experienced and proficient in using the VA Video Connect (VVC) by 2021 (Dept. of Veterans Affairs, 2018). With the emergence of the COVID-19 pandemic and the unexpected transition to telehealth, the need for the VVC became urgent prior to many of the providers completing the self-training modules. In addition to training issues, providers faced many technological barriers as they attempted to utilize the VVC.

**Purpose:** The purpose of this DNP quality improvement (QI) project was to improve access to care for veterans by removing barriers and implementing facilitators in utilizing the VA Video Connect (VVC) in a VA primary care clinic in the Southeast.

**Methods:** A review of the current literature identified the characteristics of veterans who commonly use the VVC, the benefits of the VVC to the veterans, barriers to using the VVC for both veterans and providers, and ways to improve adoption of the VVC. A strengths, weaknesses, opportunities, and threats (SWOT) analysis was completed. Lewin’s Change Model was the theoretical model chosen for this DNP QI project. Interventions to remove barriers and implement facilitators included developing VVC Champions, providing instructor-led VVC training, and troubleshooting tips within the primary care clinic. The Plan-Do-Study-Act (PDSA) was the translational framework used to implement and evaluate these changes. The total number of visits (face-to-face, telephone, and VVC) conducted in the primary care clinic were collected and evaluated for changes pre and post intervention.



**Results:** The PCPs and the support staff who were part of this DNP QI project agreed that developing VVC Champions, as well as providing additional training and resources to staff facilitated using the VVC. However, the data indicated that despite the interventions, providers continued to conduct face-to-face and telephone visits more than VVC.

**Conclusions and Recommendations:** Developing VVC Champions as well as providing additional training and troubleshooting tips to staff can improve confidence in utilizing the VVC in a VA primary care setting. However these interventions may not increase the use of the VVC. Further research is needed to understand and address ongoing barriers in utilizing the VVC in VA primary care clinics.

*Keywords:* VA Telehealth, VA Video Connect, VVC, VA Primary Care, VHA Telehealth

## **Background and Significance**

Currently, the Veterans Health Administration (VHA) is the nation's largest healthcare system with 171 medical centers and 1,112 outpatient sites which provide health care services to over nine million enrolled veterans (U.S. Department of Veterans Affairs, 2021). Between February and May of 2020, the VHA canceled over 10.5 million veteran appointments in response to the COVID-19 pandemic (U.S. Department of Veterans Affairs, 2020a). As a result, providers and veterans were forced to use telehealth for ongoing health care services.

Telehealth is not a new concept in the VHA. It was first documented in the 1960s when VHA physicians used televisions to communicate with their patients (U.S. Department of Veterans Affairs, 2020b). As technology progressed, the VHA pioneered the testing and implementation of telehealth beginning in 2003 (Myers et al., 2020).

Currently, VHA telehealth technologies are categorized by where the veteran is located: in the hospital, in a clinic, or at home (U.S. Department of Veterans Affairs, n.d.). VA Video Connect (VVC) is one of the telehealth technologies that allows veterans to connect with their healthcare providers from their home. Like FaceTime or Zoom, the VVC provides a video interface between the veteran and the provider through a secure platform. It was launched specifically to improve access to care for veterans who live in rural areas or are a long distance from a VA facility, who have transportation issues, or who suffer from physical and/or mental health issues. In 2017, shortly after being launched, the VVC was used by VA providers to connect with veterans in the aftermath of Hurricanes Harvey, Irma, and Maria (Der-Martirosian et al., 2020a).

In 2018, Congress passed the MISSION (“Maintaining Internal Systems and Strengthening Integrated Outside Networks”) Act which sparked the VHA “Anywhere to Anywhere” initiative.

One of the objectives of this initiative was to ensure that 100% of outpatient mental health providers and PCPs were proficient in using the VVC by the end of 2021 (U.S. Department of Veterans Affairs, 2018a). Also as part of this initiative, a federal rule was enacted to protect VA providers from different state laws allowing them to treat veterans via telehealth across state lines (U.S. Department of Veterans Affairs, 2018b). In that same year, the VHA conducted over a million VVC visits out of a total of 2.3 million telehealth visits across all modalities (U.S. Department of Veterans Affairs, 2020b).

Despite the “Anywhere to Anywhere” initiative many PCPs had not yet completed the self-guided VVC training, much less conducted an actual VVC visit, when the COVID-19 pandemic forced the VA to cancel in-person appointments. In an effort to respond rapidly to the COVID-19 crisis and continue to provide access to care, the VHA gave temporary permission to providers not yet trained in using the VVC to use other remote video technologies such as FaceTime, Zoom, Doximity, or Skype (U.S. Department of Veterans Affairs, 2020c).

During the early stages of the pandemic, VA leadership where this QI project was completed encouraged providers to use the VVC for at least 30 percent of their total visits. Unlike a telephone visit, video visits allow providers to complete a limited physical exam which can affect reimbursement rates. However, video and telephone visits have been reimbursed at the same rate throughout the pandemic. Additionally, as PCPs and support staff members within this CBOC completed the self-training modules and tried to utilize the VVC, they faced many barriers. These included inadequate broadband, connectivity issues, technical difficulties with the scheduling process, a lack of on-site technical support, and frustrated veterans who needed assistance connecting to their VVC appointments from home. Most PCPs who were new to

telehealth found using the telephone or other video platforms (FaceTime, Zoom, Doximity, or Skype) much easier and less time consuming than using the VVC.

### **Purpose**

The purpose of this DNP QI project was to improve access to care for veterans by removing barriers and implementing facilitators in utilizing the VA Video Connect (VVC) in a VA primary care clinic in the Southeast.

## Review of Current Evidence

A review of the current literature regarding VA Video Connect (VVC) telehealth was conducted. The databases searched initially included CINAHL, PubMed, and ProQuest Central. The search terms initially included: VA Video Connect, VA Video Connect (VVC), VA Video Visits, and VA Telehealth, which resulted in 21 research articles. The search was expanded to include the terms Telehealth, Virtual Care, Virtual Visits, and Video Telehealth. The search criteria included articles published within the last five years, written in English, and that were peer-reviewed. A total of 5,643 articles were identified from the literature. To narrow the scope of the review, the Boolean/Phrase “and” was used to connect the terms: Telehealth and Veterans, Telehealth and Veterans and Primary Care, Virtual Care and Veterans, Virtual Visits and Veterans, Video Telehealth and Veterans, Video and Veterans and Primary Care, which reduced the results to 269 research articles. The literature was reviewed for relevancy and duplicates were removed leaving 51 research articles for further evaluation. Initially, 20 research articles were reviewed and evaluated. The literature was continuously searched for updates throughout the DNP project. The quality of the literature was evaluated using the John Hopkins Nursing Evidence Based Practice (EBP) Levels of Evidence Model and Guidelines (Dang and Dearholt, 2018). A total of 23 articles were organized by year, authors, purpose, design, setting, population, sample size, instrument, key findings, gaps in the literature, conclusions, and level of evidence into a Microsoft Excel spreadsheet (Version 16.57), which became the study database. The articles were then grouped by themes, sub-themes, and key details. The studies included two Level-1 systematic reviews of randomized control trials (RCTs) and one Level-3 quantitative study. Four common themes emerged throughout the literature including the characteristics of veteran telehealth users, the benefits of using telehealth for veterans, the barriers to using

telehealth reported by providers and veterans, and the facilitators recommended to improve the adoption of telehealth by providers.

### **Veteran Telehealth User Characteristics**

Three months into the COVID-19 pandemic, Ferguson et al. (2020) evaluated 5,400,878 veteran patients nationwide. They found that veterans were most likely to receive virtual care during the pandemic if they had lower income, more chronic conditions, and greater disabilities. Virtual care according to this study included telephone or video visits. The authors found that veterans who used video were more likely to be between the ages of 18-44, urban, and non-homeless. The study looked at VA telehealth use across five service lines: Diagnostic/Ancillary Care, Mental Health, Primary Care, Specialty Care, and Rehabilitation within this three-month period. According to their research, telehealth usage increased across all service lines combined from 14% to 58%. VA mental health clinics accounted for 55% of all video visits while VA primary care accounted for 37% of all telephone visits. The authors further explained that although mental health clinics had the highest percent of video visits, they also had the smallest increase because they were trained and already using video telehealth before the pandemic unlike many primary care clinics.

Veteran telehealth user characteristics seem to vary by telehealth modality. Clinical Video Telehealth (CVT) is a telehealth modality categorized as “In Clinic” and used by veterans and providers in VA mental health and specialty clinics. CVT users were typically younger, rural, female, and had more comorbidities compared to non-CVT users (Adams et al., 2019). In contrast, veterans who used VA-issued video enabled tablets to connect through the VVC from their homes were found to be older with fewer chronic conditions (Zulman et al., 2019). Der-Martirosian et al, (2020b) determined in a later study that veterans who used telehealth were

older, had more comorbidities, outpatient appointments, emergency room visits, and hospitalizations. The study did not differentiate what percent used telephone versus VVC and this study did not mention veterans using VA-issued tablets.

More research is needed to better understand the digital divide and determine which telehealth modalities are best suited to reach different veteran populations.

### **Telehealth Benefits for Veterans**

As evidenced by the literature, the most predominant telehealth benefit is that it improves access to care (Adams et al., 2019; Der-Martirosian et al., 2020a; Gordon et al., 2020; Hale et al., 2020; Jiang et al., 2020; Lum et al., 2019; Perry et al., 2019; Samples et al., 2020; Slightam et al., 2020). Veterans also reported high satisfaction rates with the use of telehealth (Gordon et al., 2020; Lum et al., 2019; Slightam et al., 2020; Veazie et al., 2019). Other telehealth benefits included convenience, money and/or time savings (Jacobs et al., 2020; Jiang et al., 2020; Lum et al., 2019).

#### ***Improves Access to Care***

According to the veterans and providers, CVT improved access to care (Adams et al., 2019; Gordon et al., 2020; Perry et al., 2019; Samples et al., 2020). Veterans using VA-issued video enabled tablets perceived improvements in access to care and gave them the opportunity to overcome access barriers (Slightam et al., 2020). VetConnect, a video telehealth technology, improved access to care for veterans living in VA contracted nursing homes (Hale et al., 2020). The VHA's telehealth has improved access to care for older veterans living in rural areas and has been essential in addressing health disparities in this population (Lum et al., 2019). Telehealth decreased wait times to see a specialist, improved the management of more complex conditions, and resulted in timelier diagnoses (Jiang et al., 2020; Lum et al., 2019). Additionally, a study



conducted by Der-Martirosian et al. (2020a) concluded that telehealth should be further evaluated as a post disaster delivery tool to improve coordination of and access to care.

The current evidence indicates telehealth improved access to care for veterans regardless of the modality.

### ***High Satisfaction Ratings***

Veterans reported high satisfaction with telehealth related to improved access to appointments, decreased travel and waiting room times, and less stress related to city driving, planning routes, and finding parking (Gordon et al., 2020; Lum et al., 2019). High satisfaction among veterans was also found to be related to the quality of technology and technical assistance provided with VA-issued video tablets (Slightam et al., 2020). A systematic review conducted by Veazie et al. (2019) revealed that veterans were as satisfied with mental health services via video as in-person visits.

In summary, veterans reported high satisfaction with telehealth for a variety of reasons.

### ***Convenience, Saves Money &/or Time***

According to the current literature, veterans reported that telehealth provided convenience, reduced transportation barriers, saved money, and saved time (Jacobs et al., 2020; Jiang et al., 2020). Lum et al. (2019) conducted a study which determined that telehealth saved the veterans in the study a total of 179,121 travel miles with an average savings of \$58 per veteran in out-of-pocket travel expenses.

The data suggests telehealth provides convenience and saves transportation costs and travel time for veteran users. However, the VA provides travel reimbursement for some veterans. Further studies are needed to evaluate the cost savings to veterans and the VA without travel pay reimbursement.

## **Telehealth Barriers for Providers and Veterans**

The term telehealth often refers to both telephone and video modalities. People are already accustomed to using telephones in their daily lives. Video telehealth requires computers or smart devices equipped with speakers, microphones, cameras, software programs, email, internet access and some level of training or technical savvy. These requirements can present technical barriers in utilizing video telehealth. The current literature provides evidence of these barriers within the VA as they relate to training, technology, staffing, scheduling, and even physical barriers as described in the following sections.

### ***Training***

Prior to the pandemic, studies demonstrated that a lack of provider and/or veteran training created barriers for telehealth adoption within the VA (Muir et al., 2020; Samples et al., 2020; Perry et al., 2019; Zulman et al., 2019). However, when COVID-19 suddenly forced the VA to cancel in-person appointments, 40,000 VA clinicians in primary care, mental health, and specialty care were ordered to complete online telehealth training modules. Many of these providers had never used virtual care much less conducted a VVC visit (Heyworth et al., 2020). Additionally, the veterans, who were also new to telehealth, were dependent upon local staff to help them navigate how to get connected on their smart devices for their appointments. This assistance was often provided over the phone which made it difficult for both the veteran and the staff member trying to help. Different instructions were applicable depending on what type of device the veteran used.

According to Johnston et al. (2021) the VA Office of Connected Care Quality and Training (QT) Division streamlined these virtual training modules to enable clinicians to respond more rapidly to the pandemic. This study determined that nearly 87,000 total training courses were

completed in March 2020 (including over 24,000 VVC training courses). This exceeded the prior 12-months course completions combined (approximately 83,000). The authors explained that one of the challenges to providing training on a national level was that it did not cater to everyone's needs. Despite this streamlining and increase in completed VVC self-training modules, studies showed that inadequate training of staff and veterans created barriers for video telehealth during the COVID-19 pandemic and many providers reported a preference for using the telephone (Jiang et al., 2020; Reddy et al., 2020). However, studies also determined that providers who were more technologically savvy or who had already adopted the VVC as part of their practice adapted more easily to VVC use in the pandemic than those who had never used the VVC (Heyworth et al., 2020; Muir et al., 2020). Another lesson learned from implementing the VVC was that providers reported limited time for training while trying to manage their patient load during the pandemic (Myers et al., 2020).

In summary, training issues were a barrier to adopting telehealth at the VA pre and post pandemic. Like many other companies and healthcare systems, the VA uses self-training modules to allow employees to train at their convenience and pace. Additional research is needed to determine why the self-guided VVC training modules were not adequate to improve the adoption of the VVC in primary care.

### ***Technology***

One of the most notable technological barriers mentioned in the literature was the lack of infrastructure in rural areas to support telehealth technology (Heyworth et al., 2020; Reddy et al., 2020; Samples et al., 2020). Other studies determined that many veterans lacked access to technology, such as email, internet, and smart devices, which created barriers in utilizing the VVC (Jiang et al., 2020; Padala et al., 2020; Reddy et al., 2020). The need to build separate sub-

clinics for VVC scheduling and billing also created a technological barrier for clinics and staff (Hale et al., 2018; Myers et al., 2020; Der-Martirosian et al., 2021). When the pandemic forced all providers to simultaneously start utilizing telehealth to contact their patients, they experienced VVC connectivity and equipment issues and a lack of technical support (Muir et al., 2020; Der-Martirosian et al., 2021). One study showed that providers and veterans resisted adopting the telehealth video technology (Heyworth et al., 2020). A more recent study found that VA providers reported other video platforms like FaceTime and Doximity were more user friendly for conducting telehealth visits than the VVC (Der-Martirosian et al., 2021). Providers and veterans reported poor video or sound quality with digital stethoscopes (Jiang et al., 2020). Some providers reported difficulty hearing the veterans over video (Hale et al., 2018). One study looked at the technological barriers disabled veterans had with using telehealth (Jiang et al., 2020). Providers also pointed out that it was difficult to capture the amount of time they spent managing the technical issues as part of the workload involved with telehealth (Hale et al., 2018). The evidence shows that providers and veterans both faced many technological barriers in trying to utilize the VVC, particularly during the pandemic.

### ***Staffing***

Several studies indicated that video telehealth created additional administrative work on staff, who were already overburdened with multiple duties (Hale et al., 2018; Muir et al., 2020; Perry et al., 2019). Staffing shortages and/or turnover were also noted to create barriers for telehealth (Hale et al., 2018; Muir et al., 2020; Zulman et al., 2019). In summary, the evidence shows that utilizing video telehealth required additional tasks to be managed by trained support staff and providers. Staffing shortages created additional work for others and turnover required

additional time for hiring and training new staff; all of which created additional barriers to utilizing video telehealth.

### ***Scheduling***

Based on the evidence, one of the major barriers to implementing video telehealth within the VA was setting up VVC sub-clinics for scheduling appointments (Hale et al., 2018; Muir et al., 2020; Myers et al., 2020; Der-Martirosian et al., 2021). Additionally, there were also barriers with completing the multiple steps necessary to correctly schedule veterans for VVC appointments (Myers et al., 2020).

### ***Physical Barriers***

The evidence shows that veterans reported difficulty developing a relationship with their provider due to the lack of physical contact (Jiang et al., 2020; Gordon et al., 2020). Gordon et al. (2020) found that veterans also expressed concern about accuracy with their care because of the limitations of the physical exam over video and that the providers were distracted and not engaged in the conversation. Some of the veterans in Gordon et al. (2020) also reported feeling rushed by the clinician and not being able to find the appropriate time to ask questions during the video visit. In summary, the evidence showed that telehealth presented challenges through physical barriers or a lack of physical contact.

### **Telehealth Facilitators**

Throughout the literature the recommendations for improving the implementation and increasing the adoption of telehealth were: additional in-personal training, hands-on-experience, and on-site support champions (Daniels, 2020; Hale et al., 2018; Muir et al., 2020; Nearing et al., 2020; Myers et al., 2020; Zulman et al., 2019).

### ***Additional Training and Hands-On Experience***

The current literature determined that additional in-person training with hands-on practice facilitated implementation of the VVC (Hale et al., 2018; Muir et al., 2020; Nearing et al., 2020). Nearing et al. (2020) showed that additional training boosted staff confidence in utilizing the VVC. In 2020, Daniels conducted a VVC program evaluation in a mental health setting and determined that face-to-face training facilitated adoption of the VVC. In summary, the current evidence recommended instructor-led VVC training and hands-on experience to facilitate the adoption and implementation of the VVC.

### ***Champions***

Multiple studies concluded that utilizing on-site champions (aka project coordinators) facilitated VVC implementation (Daniels, 2020; Hale et al., 2018; Muir et al., 2020; Myers et al., 2020; Zulman et al., 2019). One study also determined that external support staff who were already trained in using online video technology could also assist with the implementation of video telehealth (Muir et al. 2020). Overall, the evidence indicated that developing and utilizing VVC Champions would help facilitate the adoption of the VVC.

### ***Conclusions***

The literature indicated that VVC telehealth user characteristics typically included veterans aged 18-44, urban, non-homeless, lower income, more chronic conditions, and greater disabilities (Ferguson et al., 2020). VA telehealth benefits included improved access to care, high veteran satisfaction rates, convenience, and monetary/time savings (Adams et al., 2019; Der-Martirosian et al., 2020a; Gordon et al., 2020; Hale et al., 2020; Jacobs et al., 2020; Jiang et al., 2020; Lum et al., 2019; Perry et al., 2019; Samples et al., 2020; Slightam et al., 2020; Veazie et al., 2019). VA telehealth barriers included inadequate training, technological issues, difficulty

with staffing, scheduling, and physical barriers (Der-Martirosian et al., 2021; Gordon et al., 2020; Hale et al., 2020; Heyworth et al., 2020; Jiang et al., 2020; Johnston et al., 2021; Muir et al., 2020; Myers et al., 2020; Padala et al., 2020; Perry et al., 2019; Reddy et al., 2020; Samples et al., 2020; Zulman et al., 2019). The evidence indicated that providing additional in-person training and hands on practice with the VVC, as well as developing on-site VVC Champions facilitated the adoption of the VVC (Daniels, 2020; Hale et al., 2018; Muir et al., 2020; Myers et al., 2020; Nearing et al., 2020; Zulman et al., 2019).

## **Theoretical Model / Conceptual Framework**

Kurt Lewin's Change Model was the theoretical model chosen for this DNP QI project. Lewin's model divides the process of organizational change into three steps: unfreezing, changing, and refreezing (Hussain et al, 2016).

### **Unfreezing**

The first step is to “unfreeze” the current processes which involves motivating people to let go of old practices that are unproductive and/or removing barriers that negatively impact progress (Nursing Theory, 2020). The PI (Project Investigator) started the unfreezing process by meeting with leadership in the spring of 2020 immediately after the VA had closed to in-person appointments and providers were required to utilize telehealth. The PI shared the evidence found in the current literature about the VVC with leadership. Leadership acknowledged the benefits of telehealth and agreed that the providers were facing barriers in utilizing the VVC. The PI had witnessed providers utilizing the telephone, as well as applications like Doximity and FaceTime, instead of the VVC to contact their patients. Leadership, aware of the problem, had asked the providers to increase the utilization of the VVC to 30% of their virtual appointments. The PI requested permission to conduct a DNP QI project within one of the primary care clinics in order to remove barriers, implement facilitators, and improve the utilization of the VVC. The PI was granted permission.

### **Changing**

The second step of Lewin's Change Model is to “change” and involves taking feelings, thoughts, and/or behaviors to the next level required to make the necessary change (Nursing Theory, 2020). The PI began the change process by engaging key stakeholders and completing a VVC Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis.



On April 14, 2021, the PI met with four of the five PCPs from one of the clinics. The PI selected this clinic because they conducted more VVC visits than the other primary care clinic within this CBOC. The one provider who declined to attend the meeting was newly hired and had never conducted a VVC visit. The PI conducted the meeting from 1230 to 1530 and provided lunch for the four participating PCPs. The providers were given a SWOT template on which they individually recorded their opinions about the VVC strengths, weaknesses, opportunities, and threats. Once completed, the PI collected the individual SWOT analyses and consolidated the results for a group discussion.

This same process was repeated on June 2, 2021, with the support staff members. Eight of the 10 support staff members attended, two were on vacation. The PI provided lunch for the attendees and while they completed the individual SWOT templates. The PI collected the individual SWOT analyses and consolidated them for a group discussion.

The SWOT analysis provided an opportunity for providers and staff members to openly share their experiences and thoughts about the VVC. Providers described experiences where getting connected with the veteran through the VVC took up to half of the veteran's scheduled appointment time. The support staffers shared their experiences with scheduling issues and having to guide veterans, who received no VVC training, how to link to their VVC appointments. Although it was easier for both groups to focus on the weaknesses and bad experiences with the VVC, the format encouraged them to intentionally think about and discuss the VVC strengths and opportunities for improvement. Both groups identified additional in-person VVC training as a high impact intervention. The providers requested instructor-led training that focused on troubleshooting issues. The support staffers specifically requested step-by-step training materials on how to assist veterans who were calling them with Android,

iPhones, and iPad devices for help with connecting to the VVC. Additionally, the support staff requested on-site technical support to help with VVC issues. During the meeting, both groups shared information with each other to resolve various technical issues and manage different VVC scheduling problems. This exercise served as a springboard to encourage the providers and support staff to take their thinking to the next level necessary to make this change. It also served to inform the PI as to the interventions that would be most impactful for the DNP QI project. The complete findings of the SWOT analysis are discussed in the following section, “Translational Framework”.

The remainder of this change process involved removing barriers and implementing facilitators to improve the use of the VVC in this primary care clinic. Three instructor-led VVC training sessions were provided along with troubleshooting tips to help remove barriers in utilizing the VVC. These sessions provided an opportunity for the providers and support staff to share their experiences and learn new ways to manage and troubleshoot issues with the VVC. VVC Champions were developed within the primary care clinic to help facilitate the adoption and utilization of the VVC. This process is also described in detail in the following section “Translational Framework”.

### **Refreezing**

The final step of Lewin’s Change Model is to “refreeze” the established changes as the new standard operating procedures (Nursing Theory, 2020). This step to refreeze the changes began when the instructor-led VVC training sessions were completed and new processes were learned to address technical and scheduling issues. Multiple VVC Champions were developed to ensure sustainability of the DNP QI project. This refreeze step was completed when the VVC

Champions demonstrated that the interventions had improved the utilization of the VVC within the primary care clinic and they began to develop additional VVC Champions.

## **Translational Framework**

The Plan Do Study Act (PDSA) provides a four-step translational framework for a quality improvement process (Hall, 2016). The PDSA was identified as the appropriate translational framework for this DNP QI project.

### **Plan**

The first step “Plan” involves identifying exactly what will be done and should include a measurable outcome, the population, and a timeframe (Agency for Healthcare Research and Quality, 2020).

### ***Project Implementation***

The “Plan” for this DNP QI project involved utilizing the findings from the current literature, forming a team, and completing a SWOT analysis to inform the PI which interventions would be most effective, measurable, and possible within the given timeframe.

### ***The Findings from the Literature***

As evidenced by the literature, VVC telehealth user characteristics typically included veterans aged 18-44, urban, non-homeless, lower income, more chronic conditions, and greater disabilities (Ferguson et al., 2020). VA telehealth benefits included improved access to care, high veteran satisfaction rates, convenience, as well as monetary/time savings (Adams et al., 2019; Der-Martirosian et al., 2020a; Gordon et al., 2020; Hale et al., 2020; Jacobs et al., 2020; Jiang et al., 2020; Lum et al., 2019; Perry et al., 2019; Samples et al., 2020; Slightam et al., 2020; Veazie et al., 2019). VA telehealth barriers included inadequate training, technological issues, difficulty with staffing, scheduling, and physical barriers (Der-Martirosian et al., 2021; Gordon et al., 2020; Hale et al., 2020; Heyworth et al., 2020; Jiang et al., 2020; Johnston et al., 2021; Muir et al., 2020; Myers et al., 2020; Padala et al., 2020; Perry et al., 2019; Reddy et al., 2020; Samples et al., 2020; Zulman et al., 2019). The evidence indicated that providing additional in-person

training and hands on practice with the VVC, as well as developing on-site VVC Champions facilitated the adoption of the VVC (Daniels, 2020; Hale et al., 2018; Muir et al., 2020; Myers et al., 2020; Nearing et al., 2020; Zulman et al., 2019).

### ***Setting/Population/Sample***

The DNP QI project took place in a primary care clinic in the Southeast (setting). There were six primary care clinics (population) within this CBOC. The PI formed a team by selecting the clinic that had produced the most VVC visits. The team (sample) consisted of five primary care providers and their 10 support staff members who all worked together in the same clinic.

### ***SWOT Analysis***

In April and June 2021, a VVC SWOT analysis was conducted with the providers and the support staff members, respectively. The results of the combined SWOT analyses strongly correlated with the current evidence. (See Appendix A). The strengths (S) of the VVC, identified by the SWOT analysis, included: increased access to care, provided convenience, and saved time/money for veterans. The strengths (S) correlated with the benefits identified in the literature. The weaknesses (W) identified by the providers and staff, included: technical/connectivity issues and inadequate training for staff and veterans. The weaknesses (W) were also very similar to the telehealth barriers found in the literature. The opportunities (O) identified by the SWOT analysis, included: providing additional in-person training for employees and veterans, providing on-site VVC support staff (aka VVC Champions), and addressing technical issues. The opportunities (O) correlated with the facilitators found in the literature. The SWOT analysis indicated that a major threat (T) to the VVC was an ongoing reluctance to adopt the VVC by providers and veterans.

Based on the evidence and the results of the SWOT analysis, the PI and the team agreed that the high impact interventions of this DNP QI project should include providing the team with additional in-person VVC training, troubleshooting tips, and developing on-site VVC Champions to support them with utilizing the VVC.

The total number of provider visits including VVC, telephone, and face-to-face within this primary care clinic would be collected pre and post intervention to provide a way to measure outcomes. It was agreed that the pre intervention data would be collected between February and April 2021, the intervention would take place between May and July 2021, and the post intervention data would be gathered between August and October 2021.

## **Do**

The second step “Do” involves executing the plans, implementing the interventions, and recording observations (AHRQ, 2020).

The “Do” step of this DNP QI project involved removing barriers and implementing facilitators as supported by the literature and the SWOT analysis.

## ***Interventions***

The interventions supported by the literature and the results of the SWOT analysis included providing additional in-person VVC training and troubleshooting tips, as well as developing VVC Champions. Three instructor-led VVC virtual training classes were provided to the team by the VVC Regional Trainer on June 7th, June 20th, and June 23, 2021. The PI attended and interacted in each of these sessions. Every provider and support staff member attended at least one session, including the provider and the support staff members that were absent in the first meeting for the SWOT analysis. Additionally, a VVC resource page titled “Telehealth Tips and

Tricks for Common Problems” and the National Telehealth Technology Help Desk 1-866 number was provided to all team members. (See Appendix B).

### ***Developing VVC Champions***

One of the support staff members had been given the title of VVC Champion by her Nurse Manager, but she had never received any additional VVC training. The PI selected four additional VVC Champions, within this primary care clinic, based on their knowledge, experience, and enthusiasm about the VVC. Four of these were support staff members; one was the provider who had produced the highest volume of VVC visits.

Initially, the PI engaged the VVC Champions by having them demonstrate the technical issues to the PI while using the VVC. These demonstrations took place weekly over the first three weeks of May 2021. Next, the PI engaged the VVC Champions during the instructor-led training sessions. The VVC Champions were able to describe specific technical issues to the Regional Trainer who was able to answer their questions and provide recommendations and solutions during the training sessions. The PI continued to schedule time each week to visit the clinic and work with the VVC Champions, providers, and support staff. During this time, the PI observed the VVC Champions scheduling VVC appointments and preparing VVC visits for their providers using the training and troubleshooting tips that had been provided. The PI worked with the team to troubleshoot and resolve technical issues and enlisted the National Telehealth Technology Help Desk for more complex problems.

### ***Data Collection***

The VA Health Administration Service (HAS) office provided the monthly data regarding the number of VVC, telephone, and face-to-face visits that were conducted in this clinic during

the project timeline from February to October 2021. (See Appendix C). They also provided corresponding monthly data for 2020 for comparison at the request of the PI. (See Appendix D).

### **Study**

The third step “Study” involved assessing and recording the results of the interventions (AHRQ, 2020).

The “Study” step of this DNP QI project involved observing the team each week as they utilized the additional VVC training and troubleshooting tips to manage VVC connections. The PI also observed the other support staff members as they engaged with the VVC Champions and learned how to manage more complex VVC issues, particularly scheduling errors. The support staffers worked in one large room allowing them to see and hear each other. This provided the advantage of easily sharing information, both positive and negative, with each other. The VVC Champions became more confident in their abilities and began to teach the other support staff members what they knew. The PI noticed less and less VVC connectivity and technical issues as the project interventions progressed. By the end of June, everyone had received the additional VVC training and the “Telehealth Tips and Tricks for Common Problems” resource links. By the end of July, all the support staff members in this clinic had developed into VVC Champions and were better able to support their providers. However, the flow of information among the providers did not work the same. The one provider who was the VVC Champion did not have the time to work individually with the other providers due to their patient schedules. The providers benefitted from the VVC training but were dependent upon their support staff members to assist them with VVC technical issues. Despite the additional VVC training, troubleshooting tip links, support from VVC Champions, and the 1-800 National Telehealth Support line, the PI observed



that the team members continued to demonstrate and verbalize a preference for face-to-face and/or telephone visits compared to VVC visits.

### ***Data Analysis***

Monthly pre and post intervention data regarding VVC, telephone, and face-to-face visits for the primary care clinic was collected during the project period and analyzed. (See Appendix C). The pre-intervention data period ran from February to April 2020, the intervention period was from May to July 2020, and the post intervention period from August to October 2020. There were several known variables that impacted the data. The first factor was that by February 2021, when the PI began to collect pre-intervention data, the VA was fully reopened to in-person visits. The number of face-to-face visits had increased while the number of VVC and telephone visits decreased. This trend continued throughout 2021. Puzzled by this consistent decrease in telehealth usage during the DNP QI Project, the PI requested 2020 data from the HAS office for comparison. (See Appendix D). From March until August 2020, the VA was closed to in-person appointments, forcing providers to use either VVC or telephone to conduct visits as indicated by the data. The PI was surprised at the volume of VVC visits conducted according to the data in 2020. Upon further investigation the PI learned that although the visits were scheduled and captured as VVC visits, that many of them ended up being conducted over the telephone due to technical problems. A second factor that impacted the data involved a new grid scheduling system created by the VA, which limited each provider to two VVC appointment slots per day. This inherently limited the number of VVC visits that could be conducted during the DNP QI project. Also, by the time the PI began to implement the interventions, the staff had learned a workaround that involved scheduling the appointment as a face-to-face visit but notifying the provider that it was to be conducted over VVC. This provided veterans with more flexibility in

scheduling their appointments. However, it resulted in the VVC appointment being captured as a face-to-face visit rather than a VVC visit. This skewed the data set by overstating the face-to-face visits and understating the VVC visits. Another factor that impacted the data set involved a provider in the clinic who was diagnosed with COVID-19 but worked from home. That provider utilized the VVC for all appointments, which created an increase in the total number of VVC visits and a decrease in the number of face-to-face and telephone visits conducted in September 2021. The PI consulted the University's Statistician and concluded that data was not reliable for further statistical analysis and could not be used to determine if the interventions used in the DNP QI project were relevant.

### ***Results***

The providers and support staff reported that the additional instructor-led virtual VVC training, troubleshooting tips, as well as having VVC Champions improved their ability to utilize the VVC. The PI also observed that the team was more confident and efficient in managing technical issues when using the VVC with the additional training and resources. Nevertheless, even with the interventions, the team continued to conduct more face-to-face and telephone appointments compared to VVC visits.

### ***Limitations & Strengths***

There were several notable limitations to this DNP QI project. The first limitation was that the project was conducted in a small VA primary care clinic with five providers and 10 support staff members. The second limitation was that the project took place during a time period when the VA was reopened to in-person appointments and providers were increasing their face-to-face visits and decreasing the use of telehealth. Additionally, the VA changed the VVC scheduling system, limiting each provider to a maximum of two VVC visits per day once the VA reopened

to in-person appointments. The timing of the study and the changes to the scheduling system placed an inherent limitation on the project outcomes. Another limitation involved the data collection process, which depended on the visits being coded properly as a VVC, telephone, or face-to-face visit. This process became unreliable once the staff created a work-around for the VVC scheduling system to allow providers to schedule more than two VVC visits per day. The work-around process resulted in VVC visits being captured as face-to-face visits, understating actual VVC visits and overstating face-to-face data. Finally, the number of VVC visits in the data set was determined to be too small for further statistical analysis. As a result of these limitations, the project has poor generalizability and cannot be applied across other VA primary care settings.

Despite the limitations, the project also had strengths. The instructor-led VVC training sessions were educational and informative. They provided the team with the additional information that they needed to address some of the technological challenges that they had been facing. Additionally, the “Telehealth Tips and Tricks for Common Problems” expanded the tools available to the team to make the VVC visits more successful. Finally, developing VVC Champions within the primary care clinic improved communication between the support staff members and encouraged them to share ideas and solutions. This newfound knowledge empowered the team and boosted confidence in the utilization of the VVC within this primary care clinic.

## **Discussion**

### ***Summary of Findings***

In spring of 2020, when the VA canceled in-person appointments due to the COVID-19 pandemic, VA PCPs were suddenly forced to utilize telehealth. They experienced difficulties in utilizing the VVC and resorted to using the telephone and other platforms for virtual appointments with their patients instead. The purpose of this DNP Quality Improvement (QI) project was to remove barriers and implement facilitators to improve the utilization of the VA Video Connect (VVC) in a VA primary care clinic in the Southeast. In summary, the DNP QI project involved providing additional instructor-led VVC training and troubleshooting tips, as well as developing VVC Champions within the primary care clinic. The results were that the team demonstrated improved knowledge and confidence when utilizing the VVC and when troubleshooting technical issues post intervention. However, despite the quality improvements, one of the unexpected findings was that the team continued to conduct more face-to-face and telephone appointments than VVC visits. Further investigation revealed that VVC was simply not user friendly and required too much time and effort.

### ***Context***

Providing additional training and developing on-site champions was recommended by the literature to help facilitate the adoption of the VVC. The opportunities (O) identified by the team through the SWOT analysis and evidence in the literature were consistent. They both found that additional training and developing on-site experts would improve the adoption of the VVC. As a result, providing additional VVC training and developing VVC Champions were determined to be high impact interventions to fulfill the purpose of this project. Kurt Lewin's theoretical framework was utilized to unfreeze the existing practice, which was that providers avoided using

the VVC. Once the interventions were in place, providers and support staff demonstrated greater confidence and efficiency in utilizing the VVC, were able to schedule VVC appointments with less difficulty, and were able to utilize the links provided to troubleshoot technical issues. The team was also able to engage the National Telehealth Technology Support Desk for assistance and was more confident about helping veterans get connected through the VVC. The VVC Champions shared their knowledge with the other staff members and developed additional VVC Champions within this primary care clinic. The providers were better supported by their staff members, who were now VVC Champions, when utilizing the VVC. The DNP project findings were consistent with the literature, which determined that additional training with hands-on practice in utilizing the VVC would help facilitate implementation (Hale et al., 2018; Muir et al., 2020; Nearing et al., 2020). Nearing et al. (2020) showed that additional training boosted staff confidence in utilizing the VVC. Multiple studies also concluded that utilizing on-site champions (aka project coordinators) would facilitate VVC implementation (Daniels, 2020; Hale et al., 2018; Muir et al., 2020; Myers et al., 2020; Zulman et al., 2019). However, even with the additional training, resources, and support, the providers and support staff in this DNP QI project continued to conduct more face-to-face and telephone visits than VVC. Further investigation revealed that despite the interventions, most of the support staff and providers felt the VVC was simply not user friendly and required too much time and effort.

### ***Implications***

The implications of these findings suggest that future VA policy, practice, research, and education could be changed to improve the adoption and implementation of the VVC. Providing employees with additional instructor-led VVC training and troubleshooting tips and developing on-site VVC Champions can improve the adoption and implementation of the VVC across other

VA primary care settings. However, staff and providers will continue to conduct face-to-face and telephone visits over the VVC unless changes are made to make the VVC more user friendly. More research is needed to determine why the VVC is more successful in VA mental health compared to VA primary care. Ultimately, more research is needed to determine if the VVC is truly a sustainable telehealth modality for VA primary care.

### ***Lessons Learned***

The key lessons learned from this project included the difficulty in recruiting participants and maintaining enthusiasm among participants. The team members came to the table with months of negative experiences with utilizing the VVC. It was difficult to get them to imagine that changes could be made to improve the VVC. Those who felt overburdened with work were less enthusiastic about participating and supporting the project. Although they requested additional training, many of the staffers expressed frustration when it was time to join the training calls because it was interfering with their existing duties. Busy provider schedules also made it difficult for the PI to routinely follow up with them. One of the most difficult lessons was trying to roll out a project that involved increasing the utilization of the VVC once the VA had reopened to in-person visits. COVID-19 also impacted the project in terms of staffing shortages due to illness and quarantine. It also impacted the collected data set when a provider worked from home and all their patient appointments for 10-days were captured under the VVC. Ultimately, despite the improvements, the team continued to prefer face-to-face and telephone visits due to the time and effort required to conduct a VVC appointment.

## **Act**

The final step “Act” involves drawing conclusions about the improvements and whether further action is necessary for the next cycle or whether it is ready to be implemented across the practice (AHRQ, 2020).

## ***Conclusions***

As the “Act” step of this DNP QI project, the PI concluded that the improvements resulted in the team being more confident and efficient in utilizing the VVC. Providers felt better supported by their staff as VVC Champions within the primary care clinic. However, even after the interventions, the team continued to conduct more face-to-face and telephone visits than VVC. Further investigation revealed that most of the support staff and providers felt that the VVC required too much time and effort compared to a telephone or face-to-face visit.

## ***Recommendations:***

Further studies are needed to determine why the VVC is more successful in VA mental health clinics than primary care. Instructor-led VVC training and developing VVC Champions are recommended to improve the adoption and implementation of the VVC. Technological improvements, particularly with scheduling VVC appointments, are needed. VVC appointments should not be limited for providers or veterans. An improved scheduling system which allows the VA to correctly capture the VVC visits would be beneficial in evaluating its usefulness. Finally, the VA should further evaluate the VVC to determine what changes would be needed to make the VVC a desirable platform for providers.

## ***Sustainability***

Offering instructor-led VVC training by the Regional Trainer, providing links to “Telehealth Tips and Tricks for Common Problems”, and developing multiple VVC Champions facilitated

the adoption and implementation of the VVC. However, the sustainability of the VVC is at risk as providers and support staff continue to prefer face-to-face and telephone visits over the VVC despite these interventions. More research is needed to understand why the VVC is utilized more in VA mental health clinics than VA primary care clinics. Ultimately, for the VVC to be sustainable in VA primary care, the platform will need to be more user friendly - requiring less time and effort than face-to-face or telephone visits.



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## Appendix A

### VVC SWOT Analysis

4/14/21 & 6/2/2021

#### **STRENGTHS: What is good about using the VVC? What works well with the VVC?**

- Increases access to care through telehealth modality
- Improves access to care via computer or cellphone
- Convenient for veterans
  - who travel long distances
  - who have physical or emotional disabilities
  - who are not feeling well
  - who depend on others for transportation
  - who can't take time off from work, but can schedule an appt during break
- Saves Time for veterans
  - reduces travel time to and from appointments
  - reduces waiting time in the lobby
- Saves money for veterans
  - Decreases travel related expenses
- Allows nurse and provider to both be involved with veteran's visit
- Enables provider to complete parts of the physical exam unlike the telephone
- Provides ability to get real-time vital signs while veteran is in their home environment
- Improves time management for provider (when working correctly)
- Video improves personal interaction and communication between veteran and provider compared to telephone
- Reduces risk of exposure for both providers and veterans

#### **WEAKNESSES: What does not work well with the VVC?**

- Session times out before provider can join the patient in the waiting room
- Connectivity issues r/t equipment, bandwidth, internet speed either VA or veteran side
- Technical issues (computer, internet) on the veteran's side
- Lack of training for providers and veterans
- Not user friendly or intuitive; requires some technical savvy
- Veteran population not comfortable with technology
- Poor quality video
- Poor intermittent audio quality
- Connectivity and technical issues limit veteran's appointment times
- Difficult to troubleshoot problems or call Help Desk in midst of appointment
- Veterans don't receive email link
- Veterans are unable to link to the waiting room
- Veterans were not screened properly for Wi-Fi, Email, and Equipment requirements when VVC appointments were scheduled
- Non-structured pre-visit process

- Connectivity & technical delays are inconvenient to the veteran and negatively impact provider's remaining appointment schedule
- Grid scheduling by appt type – limits providers to 2 VVC appointments slots daily making it very inconvenient to use by veterans

**OPPORTUNITIES: What needs to be improved or corrected?**

- Provide Veteran training for VVC
- Provider structured troubleshooting & process training for healthcare team
- Provide on-site trained VVC support staff
- Allow nurse appointments for RNs to monitor veteran's BP and Blood Sugars (improve EQM Scores)
- Improve implementation
- Improve ease of use
- Improve video quality
- Improve audio quality
- Provide consistent pre-visit nursing care w/ vitals; reminders; etc...
- Address technical issues prior to scheduled visit
- Involve IT or 1-800 # w/ technical issues
- Use VVC to improve veteran education by RN, i.e. how to take BP or monitor BS
- Veteran retention with VVC compared to referring out to community care
- Stronger PACT collaboration including providers, RNs, LPNs, and MSAs
- Address Bandwidth, Internet Speed
- Educate providers on process r/t qualifying Veterans for free WIFI and IPAD
- Improve knowledge r/t scheduling VVC appointments

**THREATS: What happens if the VVC remains unchanged?**

- Providers will cease to use VVC if issues are not resolved
- Veterans will be reluctant to schedule VVC appointments unless issues are resolved
- VVC appointments may no longer be an option
- Decreases access to care for veterans
- Decreases quality of care for veterans
- Veterans will go without timely follow up care

Submitted for IRB approval 4/15/21



## Appendix B

### Telehealth Tips and Tricks for Common Problems

- Tip 1: I can't find my VA Video Connect appointment email. ([0:11](#))
- Tip 2: My appointment link won't work. ([0:42](#))
- Tip 3: The virtual medical room page won't load in the browser. ([1:18](#))
- Tip 4: The virtual medical room takes a long time to load. ([1:51](#))
- Tip 5: I cannot hear or speak to my provider. ([2:20](#))
- Tip 6: I cannot see myself or my provider on the screen. ([3:09](#))
- Tip 7: The video picture freezes or audio cuts in and out. ([3:47](#))

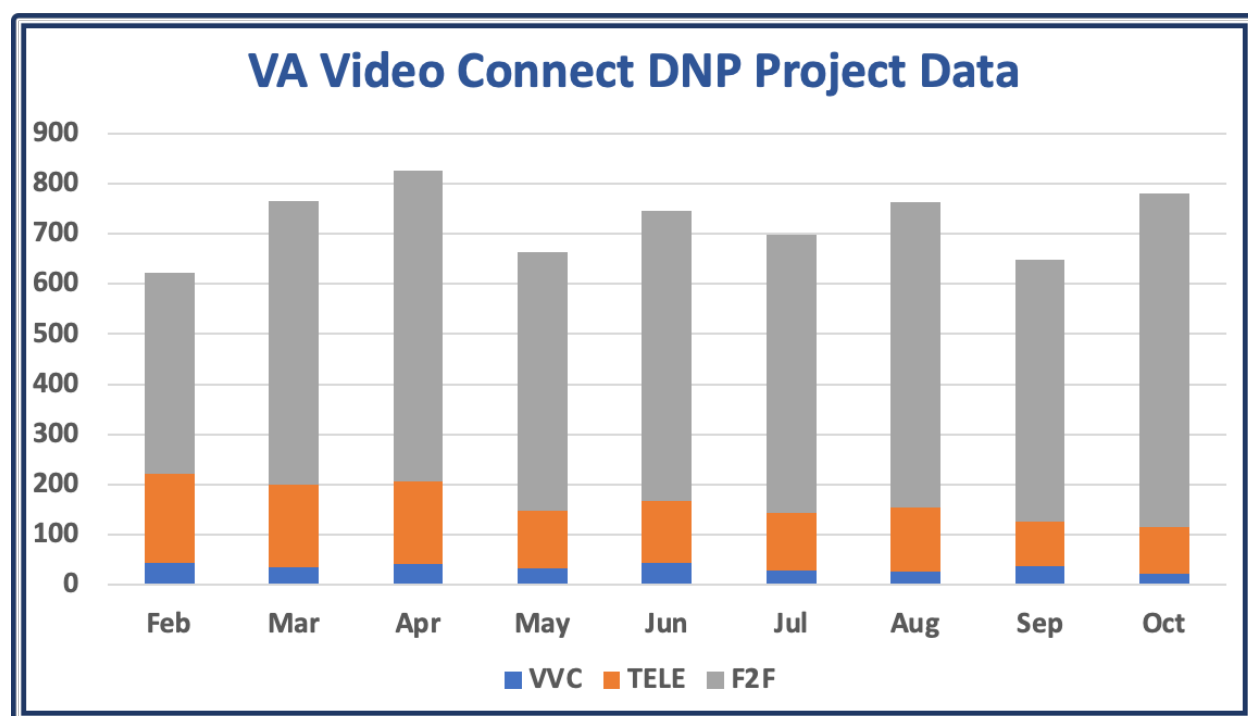


**National Telehealth Technology Help Desk (NTTHD)**

**1- 866-651-3180**

**Appendix C**  
**2021 DATA SET**

2021	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
<b>VVC Totals</b>	44	35	42	34	44	29	27	38	22
<b>TELE Totals</b>	177	164	165	113	123	114	128	87	94
<b>F2F Totals</b>	400	565	619	516	579	554	607	523	664
<b>TOTALS</b>	621	764	826	663	746	697	762	648	780



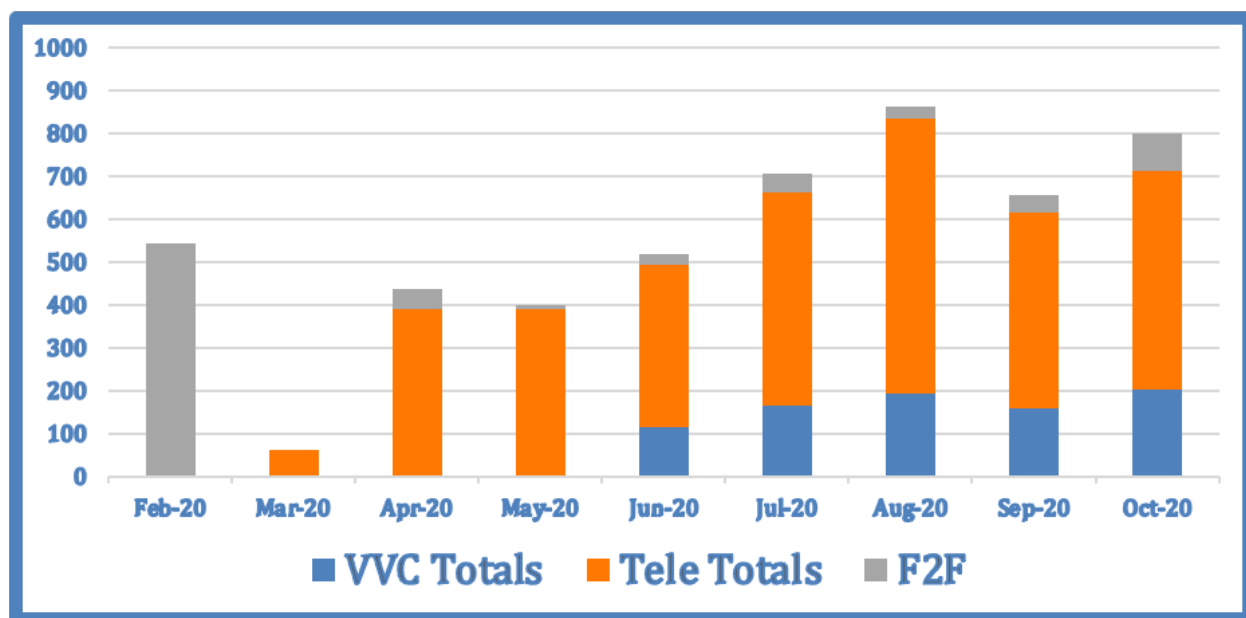
KEY: VVC=VA Video Connect visits; Tele = Telephone Visits; F2F = Face-to-Face visits.

- Data was collected for the primary care clinic from February through October 2021
- Quality Improvements were implemented during May and June 2021.
- Pre-intervention data months February, March, April 2021.
- Post-intervention data months July, August, September 2021.

## Appendix D

### 2020 DATA SET

2020	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
VVC Totals	0	0	0	0	115	164	193	157	203
Tele Totals	0	60	391	389	377	497	641	459	508
F2F	543	0	47	11	26	45	27	39	89



February 2020 all visits were face-to-face before the VA cancelled in-person appointments.

March – May 2020 providers were using the telephone while trying to learn how to use the VVC

June-October 2020 providers conducted mostly telephone visits, but increased VVC visits

“I have abided by the Academic Integrity Policy on this Assignment”

Lisa T. Moore Date: 2-8-2022