HHS Public Access

Author manuscript

Acad Emerg Med. Author manuscript; available in PMC 2024 April 01.

Published in final edited form as:

Acad Emerg Med. 2023 April ; 30(4): 368–378. doi:10.1111/acem.14682.

Telemental Health in Emergency Care Settings: A Qualitative Analysis of Considerations for Sustainability and Spread

McKenzie K. Roddy, PhD[1,2], **Patricia Chen, PhD**[3], **Alvin D. Jeffery, PhD, RN**[1,4], **Jeydith Gutierrez, MD, MPH**[5], **Melissa Rubenstein, MPH**[6], **Corey Campbell, DO**[7], **Eric Blake, AAS, EMT**[7], **Michael J. Ward, MD, PhD**[1,6,7,8]

[1]Veterans Affairs Tennessee Valley Healthcare System, Geriatric Research, Education and Clinical Center (GRECC), Nashville, Tennessee

[2]Department of Medicine, Vanderbilt University Medical Center, Nashville, TN, USA

[3]Baylor College of Medicine, Houston, TX, USA

[4]School of Nursing, Vanderbilt University, Nashville, TN, USA

[5]Iowa City Veterans Affairs Health Care System, Iowa City, IA, USA

[6]Department of Emergency Medicine, Vanderbilt University Medical Center, Nashville, TN, USA

[7]VA Tennessee Valley Healthcare System, Nashville, TN, USA

[8]Department of Biomedical Informatics, Vanderbilt University Medical Center, Nashville, TN, USA

Abstract

Objectives: Following rapid uptake of telehealth during the COVID-19 pandemic, we examined barriers and facilitators for sustainability and spread of telemental health video (TMH-V) as policies regarding precautions from the pandemic waned.

Methods: We conducted a qualitative study using semi-structured interviews and observations guided by RE-AIM. We asked four groups, local clinicians, facility leadership, Veterans, and external partners about barriers and facilitators impacting patient willingness to engage in TMH-V (Reach), quality of care (Effectiveness), barriers and facilitators impacting provider uptake (Adoption), possible adaptations to TMH-V (Implementation), and possibilities for long term use of TMH-V (Maintenance). Interviews were recorded, transcribed, and analyzed using framework analysis. We also observed TMH-V encounters in one ED and one Urgent Care (UC) to understand how clinicians and Veterans engaged with the technology.

Results: We conducted 35 interviews with ED/UC clinicians and staff (N=10); clinical and facility leadership (N=7); Veterans (N=5); and external partners (N=13) Jan-May 2022. We

Corresponding Author: Michael J. Ward, MD, PhD, MBA, Associate Professor, Department of Emergency Medicine, Vanderbilt University School of Medicine, 1313 21st Ave, Nashville, TN 37232, (615) 936-3754 (fax), michael.j.ward@vumc.org.

Author Contributions. MJW, ADJ, JG, and MKR conceived the study, designed the trial, and obtained research funding. MR oversaw the conduct of the trial, data collection, recruitment of participants, and managed the data. MKR, MR, and PC analyzed the data. MKR drafted the manuscript and all authors contributed to its revision.

DISCLOSURES

Conflict of Interest. The authors have no potential conflicts to disclose.

Conflicts: There are no conflicts of interest to declare.

completed 10 observations. All interviewees were satisfied with the TMH-V program, and interviewees highlighted increased comfort discussing difficult topics for Veterans (Reach). Clinicians identified that TMH-V allowed for cross-coverage across sites as well as increased safety and flexibility for clinicians (Adoption). Opportunities for improvement include alleviating technological burdens for on-site staff, electronic health record (EHR) modifications to accurately capture workload and modality (telehealth vs in-person), and standardizing protocols to streamline communication between on-site and remote clinical staff (Implementation). Finally, interviewees encouraged its spread (Maintenance) and thought there was great potential for service expansion.

Conclusions: Interviewees expressed support for continuing TMH-V locally and spread to other sites. Ensuring adequate infrastructure (e.g., EHR integration and technology support), and workforce capacity are key for successful spread. Given the shortage of MH clinicians in rural settings, TMH-V represents a promising intervention to increase the access to high quality emergency MH care.

Keywords

Virtual care; mental health; Veteran; emergency care; sustainability; qualitative methods

INTRODUCTION

The COVID-19 pandemic spurred rapid uptake of telehealth (1). During early phases of the pandemic, telehealth allowed patients to access care while keeping staff and patients safe (1) as a form of electronic personal protective equipment (2, 3). However, due to the potential need for immediate diagnostic and therapeutic interventions, emergency department (ED)/urgent care (UC) settings lagged in uptake of telehealth. Moreover, ED/UC settings are also chronically challenged by workforce issues and access to specialists, especially in rural areas (4).

Within the Veteran Health Administration (VHA), mental health (MH) conditions are the 6th most common reason for ED visits (5). Telehealth for mental health consultations represents an important potential direction to enhance access to specialty care for Veterans. Using telehealth for emergent MH concerns was successfully implemented in rural Australia (6) and Indiana (7). Rural Veterans and facilities are the most underserved in timely access to high quality on-site MH evaluations, and rurality contributes to disparities in access (4), suicide rates (8), and MH treatment rates (9). Further, there is a severe shortage of MH clinicians in rural settings (4). Rural Veterans presenting to VHA EDs are 3-times more likely than urban Veterans to undergo emergency interfacility transfer, and MH complaints are the most common reason for transfer (5). Increased access to MH care could prevent some of these costly and potentially avoidable transfers. Therefore, there is a substantial need to increase access to MH care in ED/UC settings, specifically rural ED/UC settings, and the implementation of telehealth may help to address this gap.

Use of telehealth is particularly relevant in the VHA, which has been using telehealth since 2013 (10–12). Early in the pandemic, telemental health video (TMH-V) use in the VHA increased 556% (13). With funding from the Veteran Affairs (VA) Office of Rural Health, a TMH-V intervention was developed and implemented at the ED/UC at VA Tennessee

Valley Healthcare System (TVHS) in March 2020 (14). Planning and evaluation of the initial implementation of the TMH-V intervention in the TVHS ED/UC was guided by the RE-AIM framework, which encourages attention to the Reach, Effectiveness, Adoption, Implementation, and Maintenance/sustainment of the intervention within the health system (15). Results from the initial implementation found that the TMH-V intervention was used for 83% of MH consults following implementation and that the intervention was effective, acceptable, and potentially sustainable (14). However, whether the use of TMH-V in emergency settings could be sustained once the perceived threats to personal safety and policies regarding precautions from the pandemic waned, remains unknown and the subject of this work.

Following the initial implementation of the TMH-V program during the onset of the COVID-19 pandemic (March 2020), knowledge gaps about the ongoing uptake and spread of TMH-V remain. After successful use of the intervention at TVHS over the past two years and cultural shifts around the use of telehealth, this qualitative study sought to investigate barriers and facilitators that impact uptake of video telehealth in an emergency MH setting and potential spread to additional clinical sites as precautions around COVID have waned. In this study, we used the RE-AIM framework (15) to conduct semi-structured interviews with Veterans, local clinicians and leadership familiar with the intervention as well as external partners who could advocate for an expansion of the intervention across the VHA system to understand sustained implementation of the intervention.

METHODS

Study Design and Setting

We conducted semi-structured interviews with four groups: (1) local clinicians (2) Veterans experiencing the TMH-V intervention; (3) local leadership; and (4) external partners. To collect data on how the use of TMH-V occurs and to understand its real-time processes, we conducted observations of clinic personnel and Veterans engaging in the TMH-V intervention in the ED/UC settings. All local participants and Veterans were employees or patients of the TVHS system during the study period: January 2022 – May 2022. External partners included VHA leadership at regional and national levels with expertise in telehealth and emergency medicine. We also included representatives from the private sector with experience delivering emergent MH care. No partners with a financial interest in telehealth were interviewed. TVHS consists of a main hospital and a satellite location 45 miles away. The main hospital operates 24/7 and has 26,000 annual ED patient visits and multiple graduate medical programs with an annual inpatient volume of approximately 6,300 patients per year along with multiple specialty care services (e.g., gastroenterology, cardiology, orthopedics, etc.) in Nashville, TN. The satellite location has an UC that only accepts walk-in visits (i.e., no ambulances) and offers coverage 8am-8pm Monday through Friday in Murfreesboro, TN. MH services are provided 24/7 in the ED and during operating hours at the UC. Prior to implementing the TMH-V intervention, MH clinicians would visit the ED/UC in-person to meet with the Veteran and consult with ED/UC clinicians and staff.

Intervention.—Described in more detail previously (14), the TMH-V intervention was delivered via a VHA-encrypted tablet on a rolling cart equipped with an external speaker. MH clinicians were supplied with a VHA-encrypted tablet to deliver the intervention remotely. MH clinicians could be located at the ED/UC or remotely (at home) and responded to referrals across both sites. MH providers were allowed to decide the modality (TMH-V vs. in-person) for each consultation. For each consultation, the MH clinician remotely reviews the Veteran's chart and initiates a call to the tablet at the patient site. Nurses and clinical support staff (e.g., clinical technicians) answer the call and bring the device to the Veteran's private room for the encounter. During fiscal year 2022, 683 unique Veterans received TMH-V; among these, 215 (31.7%) were classified as rural using rural urban commuting area (RUCA) classifications for their home zip code (16).

Selection of Participants

We used a combination of criterion and snowball sampling to recruit participants for the interviews (17). TVHS clinicians, local leadership, and external partners were identified by the teams' knowledge of the local and national context of telemental health in emergency settings. Additionally, all non-Veteran participants who completed an interview were asked to provide names of other individuals who may have relevant knowledge or experience.

Veterans were recruited on-site. Inclusion criteria for Veterans were age 18 years and older, ability to speak conversational English, experience with the TMH-V intervention, and no altered state that would negate their ability to provide consent to be interviewed (e.g., current hallucinations/delusions, severe dementia). A team member approached Veterans in the ED or UC following completion of an observed TMH-V visit. Team members consulted with the ED staff assigned to the case prior to inviting the Veteran to participate in the interview to ensure they were appropriate and interviewing would not interfere with care.

Data Collection and Procedures

Interviews with local clinicians and leadership, and external partners were conducted and recorded remotely using VA encrypted Microsoft Teams. Veteran interviews were conducted at the ED or UC in private patient rooms and recorded via Teams. All interviews were transcribed for analysis.

Interview guides were developed for Veterans, local leaders and clinicians, and external partners using the same processes (Table 1). The interview guides were informed by the RE-AIM QuEST framework (18) that integrates quantitative and qualitative data, allowing simultaneous data collection on reach, effectiveness, adoption, implementation, and maintenance outcomes (19, 20). Interview questions explored willingness to engage in TMH-V (reach), quality of care (effectiveness), barriers and facilitators that may impact provider's uptake of the intervention (adoption), facility-level factors that influenced the use of TMH-V (implementation), and possibilities for long term use of TMH-V (maintenance) and its expansion. The interview for local leaders and clinicians was piloted with two research team members, and Veteran interviews were piloted with a Veteran member of the research team.

Interviews were conducted by three study investigators [MKR (PhD), MR (MA), & HDS (BA)] with variable levels of experience with conducting qualitative interviews and research in emergency settings. Interviewing was led by author MKR, a clinical psychologist with experience and training with clinical interviewing. Participants were informed the purpose of these interviews was to understand the TMH-V program and if and how it should be continued in the future (Table 1). Verbal consent was obtained. Participation was voluntary with no compensation. Interviews ranged from 10 to 60 minutes.

All participants were asked to self-report demographics at the conclusion of their interview. Local leaders and clinicians and external partners were also asked to report their training background, job title, and experience with telemental health. Veterans were asked to share their experience with VA healthcare, MH care, and telehealth, specifically. The interviewers met weekly to review recent interviews and discuss data saturation. Transcripts were not returned to participants.

Team members visited the ED and UC to capture observations of the TMH-V intervention. Observers would introduce themselves to ED/UC staff during each visit but would not make themselves known to Veterans until after the TMH-V intervention had completed. Observers remained far enough away to observe the use of technology but not the content of conversations nor to interfere with patient care. An observational guide for the field notes was created to capture the context, content, and concepts of the encounter, with prompts to note the persons involved, the environment, and any relevant themes (Table 2). Interviewers served as observers, trained on field notes, and conducted site visits to familiarize themselves with the settings prior to initiating observations. Observations were written into the standardized field notes form during the visit and observers had the chance to consult with staff to complete any missed sections.

Data Analysis

We used framework analysis and drew on tools from rapid analysis methods to analyze the data (21–23). Interviews were analyzed separately, by group: local clinicians, local leadership, external partners, and Veterans. Our framework analysis consisted of two phases: data familiarization and mapping of the study data against the RE-AIM framework. During the data familiarization phase, we created a templated interview summary document (a tool used in rapid analysis) in Microsoft Excel into which all trained interviewers summarized interviews. Interviewers practiced summarizing several interviews together to learn appropriate summary techniques and ensure consistency across summaries. Then, we created a matrix from the templated summaries for each of the four groups (24, 25). Field notes from TMH-V observations were analyzed separately from interviews, but we applied the same analytic process to identify main themes (26). Interviews were analyzed by MKR and reviewed for concordance with MR, who helped conduct interviews. Following concordance, results were brought to the full research team for discussion.

In the second phase of analysis, RE-AIM domains were used to further make sense and organize the data. We followed previous studies that have similarly applied the RE-AIM framework to analyze qualitative data (20, 27). In this study, to understand TMH-V's *Reach,* we considered barriers and facilitators to patient use or engagement, and patients'

attitudes towards using TMH-V in an emergency setting as they relate to sustainability. We conceptualized *Effectiveness* as the impact of TMH-V on the timeliness of delivery and quality of care. To understand *Adoption,* we studied factors influencing provider uptake. Data mapped into *Implementation* and *Maintenance* domains discussed barriers and facilitators to implementation at a clinic level, and the continued use and spread of TMH-V. Finally, we asked participants about expanding TMH-V and provide information on these results.

This study was designated as quality improvement project and therefore was exempt from institutional review board review. We report our findings using the COREQ checklist (Supplemental Table) (28).

RESULTS

Recruitment

A total of 35 interview were conducted with 10 local clinicians, 7 local leaders, 13 external partners, and 5 Veterans.

Clinician, Leadership, and Expert Partners Sample.—Our team sent e-mail invitations up to 3 times between January and April 2022. We invited 50 individuals to interview, and 32 accepted (64%). We interviewed 94% of those who accepted (N=30). Of the 18 individuals who did not accept our invitation, 16 did not respond to email requests and two declined because their position changed. Mean age of clinicians, leaders, and partners was 48.6 years (SD = 10.0), and 43.3% identified as female. Most were White (83.3%), and the remaining were Asian (16.7%). They had on average 14.1 years (SD = 9.2) of experience related to emergency care, mental health care, and/or telehealth with a range of 3 to 40 years of experience. Their clinical backgrounds varied including psychiatry (36.7%), psychology (16.7%), nursing (16.7%), emergency medicine (13.3%), social work (6.7%), and other physicians (e.g., internist, family medicine; 10.0%).

Veteran Sample.—We approached 3 Veterans at the UC and 2 at the ED, and all consented to an interview. Veterans were 25 to 71 years old (median age = 53), and one (20%) identified as female. Three Veterans identified as White, one as Black, and one as Hispanic. Veterans received VA care between one and 15 years (median duration = 7). Veterans had prior experience with in-person group therapy at the VA and individual therapy at the VA in-person and with telehealth.

Observations.—Team members spent approximately 65 hours in the ED and UC to conduct observations from December 2021 to April 2022. Research team members were on-site during business hours (Monday-Friday, 8:00AM-5:00PM); team members visited in 4-hour shifts varying days, times, and sites. We captured 10 observations with 5 at the ED and 5 at the UC.

Qualitative Themes

Results are organized by the RE-AIM framework and presented below. Data from the observations are organized by domain.

Reach.—We discussed users' concerns and experiences with TMH-V which inform attitudes. Attitudes may influence whether a provider continues to offer TMH-V to their patient, and whether patients agree to its use.

Patient Barriers.: During interviews, providers expressed concern that older or hard-of-hearing Veterans sometimes have difficulty hearing the clinician on the tablet which could limit reach. However, during observations, we did not witness Veterans having difficulty hearing the clinician, even during times when the ED/UC was busy and noisy. One Veteran mentioned ensuring privacy as a concern.

Patient Facilitators.: Veterans had positive experiences with the intervention which facilitated its reach.

> "It was comforting. It works. She [MH clinician] was very good with me on everything and letting me know what was going on and it was easy to cooperate and answer questions." (71-year-old White male Veteran)

The sense of comfort and ease contributed to Veterans' willingness to engage with the TMH-V program, especially following the COVID pandemic when telehealth became the norm within the VHA. We observed that Veterans accepted the TMH-V intervention without protest.

Finally, local clinicians noted that some Veterans might be more willing to engage with the video than in-person because it is more convenient and less overwhelming.

> "When they're [Veterans] able to quickly see them [off-site MH clinicians] on the monitor within a few minutes … those patients don't have the time to change their mind or get frustrated with care or say, 'oh this has been taking too long.' So, it removes those possibilities of frustration." (Emergency medicine [EM] clinician)

Effectiveness.—Information regarding the timeliness and quality of care using TMH-V speaks to the perceptions of intervention effectiveness and willingness to continue its use. We queried perceptions of TMH-V effectiveness from all interviewees. Most had positive responses regarding timeliness and quality, although some raised issues with how remote modalities may miss important observations.

Timeliness.: Local clinicians, external partners, and veterans perceived the TMH-V program as timely which benefited Veterans and helped with ED throughput. This was observed by members of the research team when the off-site MH clinicians were able to connect with the Veteran shortly after the consult was entered.

> "I do know that the telehealth response has been quicker than instances where we're traveling back and forth from our offices to see a patient in person… probably saved us about 20 minutes. So I have really appreciated the efficiency that it's allowed in regard to how we practice especially during off hours where we're covering both [inpatient and ED] at the hospital." (Executive leadership)

Veterans appreciated the intervention was quick and worked well:

> "There was no issues connecting and it was convenient and fast… you can still see the person with Facetime and then you [the provider] don't have to interrupt your evening which is convenient and modern." (29-year-old Hispanic female Veteran)

Quality.: Most considered the quality of TMH-V equivalent to in-person care. Facility directors felt TMH-V met standards of care:

> "You know I think once you adjust to the sort of uniqueness of completing an interview over video, the interview is the same, the care provided is the same, and it seems there's no impact on quality that's offered." (Executive leadership)

And patients similarly felt that TMH-V was the same as in-person care:

> "*I got what I needed and what I was asking for. I think it would have been the same as if it was in person. As long as they give me the care that I need you know it's fine." (53-year-old Black male Veteran)*

Adoption.—The TMH-V intervention was introduced in early 2020 and adoption quickly moved to nearly 100% of MH providers due to the COVID pandemic (14). Local clinicians and leaders noted the program helped to keep MH clinicians safe regarding COVID-exposure and from volatile patients. As the prevalence of COVID-19 waxed and waned, some clinicians continued to use TMH-V while others returned to in-person consults. We present barriers and facilitators related to provider adoption of TMH-V during 2022, when providers had more flexibility to choose whether to use telehealth.

Provider Barriers.: Local leaders noted virtual MH clinicians may miss contextual information on the Veteran, such as how they have interacted with ED staff and local clinicians. Local clinicians were concerned that off-site clinicians may miss the full picture due to limited non-verbal cues:

> "If I walk into a room and I smell cigarette smoke, but the patient tells me they don't smoke I don't know if that's a big deal but it's kind of like a small example of just some of the spider senses that you have when you're in the room." (EM clinician & leadership)

In this case, the provider describes a hypothetical situation that TMH-V may be less robust than in-person care and such concerns are best understood as a pervasive attitude that may keep some MH providers from fully adopting TMH-V.

Provider Facilitators.: Just as Veterans appreciated the convenience of TMH-V, providers also noted how TMH-V enhanced their workflow.

> "There's been several times where my providers have been on the opposite campus and instead of delaying or waiting for them to make that hour trek depending on traffic, it's instantaneous. You're here and available…My only resources are now at the other campus and not a problem….So I think that it's single biggest benefit which is huge and not to minimalize it." (Nursing leadership)

Local clinicians and leaders, and external partners agreed that the ability of MH clinicians to cover multiple sites via video during the current and widespread staff shortages (29), was the single most important facilitator for adoption. Research staff observed multiple consults conducted smoothly via video with seamless teamwork from on- and off-site clinicians. The recognition of TMH-V's convenience and its benefits shaped positive experiences and attitudes towards TMH-V for providers, facilitating adoption.

Implementation.—Here we focus on problems that arose during the use of TMH-V to evaluate whether TMH-V worked as intended. We explored the "how" of implementation at a facility-wide level. Problems related to communication, documentation, and technology were identified as key factors that hampered the implementation of TMH-V.

Poor communication between on- and off-site clinicians was identified by local clinicians as negatively impacting implementation. Communication problems resulted in wasted time because on-site staff were unaware that a visit concluded This issue was observed by members of the research team when Veterans would come out of their rooms with the TMH-V tablet to alert on-site staff the visit had concluded.

> "The provider will have to call us (ED) a couple of times because sometimes you won't hear it because the ER's so busy… They call through the iPad a couple of times but then when they know like there's nobody answering they will call like our landline and let us know hey we're trying to call" (ED nurse)

Local leaders noted documentation across the two sites could create barriers to implementation and difficulties capturing workload accurately (i.e., identifying accurately if the encounter took in-person or via video). Delayed documentation was highlighted as another challenge that may affect timely communication with the ED about the treatment plan. This happened when TMH-V staff would have to attend to another consult immediately following the previous encounter and lacked an efficient way to communicate with on-site staff between back-to-back consults. A second example in which documentation was a barrier was when involuntary hold paperwork was needed andhad to be sent from the remote clinician to the on-site provider to complete.

Local leaders and clinicians, and external partners identified technological barriers, including difficulty establishing connection between off-site clinicians and on-site Veterans, which created technological burdens the nurses were frequently left to address. This was also observed by members of the research team when multiple on-site staff were trying to start the video call while on the phone with the off-site clinician to ensure they were both using the same system.

> "I think historically there's been some burden placed on nursing staff because somebody has to logistically like move the telehealth in front of the patient… when there are technical issues, they're [nurses] the ones left standing there trying to figure it out with us when they have other things that are more nursing related to do." (Psychiatrist)

Maintenance.—While the COVID pandemic facilitated initial adoption and implementation, the sustained delivery and effectiveness of the intervention is key to understanding future spread of the TMH-V intervention. We queried interviewees about possible expansions of the program to new delivery in the local context and spread to other sites.

Maintenance Threats.: Local clinicians and leaders discussed frequently changing technologies and protocols to the use of telehealth as a threat to maintenance. Local clinicians expressed frustration around staying updated on the frequently changing technology and video platforms. Local leaders noted staff training was a potential barrier as the program changed protocols, video platforms, and levels of clinicians (e.g., residents vs attendings). Finally, external partners highlighted the potential for licensure and hospital accreditation to be a barrier to remote clinicians providing care at multiple facilities.

Expansion.

Emergency: TMH-V could be expanded in two ways: 1) through the increase of VHA MH providers available for emergency care through TMH-V and 2) expanding the use of telehealth for emergency MH in community settings outside the VHA.

VHA Expansion: Local clinicians and leaders, and external partners concurred that an increase of on-demand, immediately available MH clinicians within the VHA would benefit Veterans, especially by reaching rural Veterans and/or Veterans with travel limitations. The need for an expansion was highlighted by one clinician:

> "Veterans… aren't rolling in cash so driving [to the ED is difficult] and then some can't drive for medical reasons, for PTSD [posttraumatic stress disorder] reasons, for financial reasons, [and/or] for DUI [driving under the influence] reasons." (Social worker)

Veterans in rural areas or with driving limitations would benefit greatly if they could access VHA providers without presenting to a main VHA facility.

Local clinicians and leaders, and external partners thought an expansion of TMH-V for emergency MH care within the VHA could be facilitated through the VHA's Community Based Outpatient Clinics the Veteran Crisis Line, a 24/7 crisis line available to Veterans, or direct-to-home. Expanding the availability of emergency health care through TMH-V would be especially beneficial to places with limited on-site MH resources and during night/weekend hours. In addition to staff concerns, regulatory concerns for an expansion exist.

> "The biggest challenges are going to be regulatory you know whether it's the laws or the federal law or state law… prescription of medications especially controlled substances those are governed by local and federal regulations so that limits what care you can provide." (Executive leadership)

Community Expansion.: Finally, external partners overwhelmingly agreed that extending the reach of the TMH-V program to non-VHA facilities could improve Veteran care by having access to their medical record and saving costs by avoiding unnecessary transfers

when Veterans present to non-VHA sites. However, there was concern about buy-in from community hospitals and credentialling for VHA clinicians.

> "It [TMH-V in non-VHA facility] would reduce admission [of Veterans to community hospitals] ten-fold because most of the people that are going to emergency care in the community ED and urgent care, they're psychosocial issues, they're behavioral issues, they're substance abuse issues, so having the ability for that ED/urgent care or inpatient to tap into VA providers instantaneously in the moment or within a couple of hours, I think that you'd see a drastic reduction in [Veteran] community hospital admissions." (Executive leadership, emergency care)

DISCUSSION

The TMH-V intervention for emergent MH consults was identified by a broad group of Veterans, emergency clinicians, and medical center leaders as promising for continuation and expansion. Interviewees expressed support for continuing the practice locally and spreading the TMH-V intervention to other sites. Our study identified several challenges that may hamper/impede sustainment and spread of the TMH-V intervention to other VHA or non-VHA sites.

Inconsistent or delayed communication between on- and off-site clinicians created delays in care for Veterans when on-site clinicians were unaware of the treatment plan following the video consult with the off-site MH clinician. Additionally, regular use of TMH-V equipment and technology failures burdened on-site nurses and technicians, who were pulled away from their duties to troubleshoot the tablets. Research team members observed this frustration, which was partially attributed to the frequently changing protocols and difficulty maintaining staff training on new protocols. Finally, there was some concern that off-site clinicians could miss the Veteran's context and subsequently the opportunity to discuss the case with the on-site clinicians. Access to an onsite technician for troubleshooting may alleviate some of the burden on nurses and streamline training.

To overcome identified challenges, opportunities for improvement as the program expands include standardizing protocols to streamline communication between on-site and remote clinical staff. Consideration should be given to ensure adequate staffing with appropriate licensure to accommodate virtual care provided across state lines. It follows that leadership support is critical to successful implementation. Similarly, an evaluation of rapid implementation of physical therapy delivered directly to patients via telehealth during COVID found organizational factors, centralized technological resources, and leadership support as likely crucial for maintenance and scale-up of the intervention (30).

There are several reasons to make these improvements to maintain TMH-V. Clinicians, leadership, and Veterans were largely satisfied with the TMH-V program and encouraged its continuation and spread to other facilities. A telehealth program for MH consults in rural EDs in Indiana similarly found patients and providers in favor of continuing the service (6). Additional perceived benefits of telehealth included increased safety and flexibility for clinicians and increased comfort discussing difficult topics for Veterans. Clinicians highlighted how TMH-V allowed for cross-coverage between sites, which could be easily

replicated in other hub-and-spoke model systems, whether distance or traffic create delays for providers moving between sites. Additionally, observers witnessed smooth coordination between on- and off-site clinicians. The ability to cover multiple facilities without added travel time was underscored by clinicians and leadership, alike, and is identified elsewhere as a benefit of telehealth consults (31). Most of the time, the technology and intervention ran smoothly, and Veterans perceived the intervention as timely and modern. In the context of the pandemic, TMH-V was protective (2), keeping clinicians and Veterans safe from exposure. In fact, another implementation in the emergency setting during COVID utilized telehealth for infectious patients and found increased provider and patient communication and safety for clinical workers (32).

The intervention was acceptable to Veterans and provided care perceived to be high quality. There was consensus that virtual care was comparable to in-person care. Some providers mentioned the inability to pick up small nuances due to lack of other sense (i.e., smell) or limited fields of vision as a challenge. Clinicians and Veterans recognized telehealth as the standard of care due to the pandemic, which increased acceptance of the intervention.

Interviews identified opportunities for the TMH-V program to provide unscheduled access to MH clinicians for rural Veterans. Telehealth was identified as a good fit to help meet other unmet MH needs including women Veterans (33). Given the disparities in care for rural Veterans (4) and challenges associated with seeking in-person MH care, an expansion of this program to local community clinics or potentially direct-to-home was hypothesized by leaders. Specifically, given the quality, acceptance, and efficiency gains from TMH-V, leaders identified the opportunity in TMH-V to provide unscheduled MH care to rural outpatient clinics and potentially into non-VHA settings.

Limitations and Future Directions

While the qualitative data provided in-depth insights to those interviewed, a different group of interviewees with distinct experiences may have led to a new set of themes emerging. Recall bias and demand effects may have influenced data collection. Given the infrequent nature of involuntary consults and for those transferred, we did not collect data on the nature of such visits but may identify additional themes beyond those reported here. Given the integrated nature of the VHA, generalizability to other systems may be limited. We collected a limited number of interviews from Veterans as an initial and exploratory analysis; more work is needed to fully understand their perspectives. Finally, interviews were conducted within a local context with two years' experience with the TMH-V intervention and speculations about the resources and adoption of the intervention to other health systems is needed.

CONCLUSIONS

The shortage of MH clinicians, which was exacerbated by the COVID-19 pandemic, and the MH needs of rural Veterans speaks to the urgent need to increase access to high quality MH care. The TMH-V intervention is a promising intervention to address these issues within emergency care settings, with the potential for broader implementation within the VHA and potentially beyond, to support Veterans seeking care in community settings.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgements:

We would like to thank Henrietta Denise Ssettimba for her contributions in data collection during this project and to all of the nurses, staff, and clinicians who participated in the interviews and observations.

Funding.

This study was funded by the VA Office of Rural Health #10808 (PI, Ward). MKR was supported by the Office of Academic Affiliations, Department of Veteran Affairs and the VA National Quality Scholars Program with use of facilities at VA Tennessee Valley Healthcare System, Nashville, Tennessee. ADJ received support for this work from the Agency for Healthcare Research and Quality and the Patient- Centered Outcomes Research Institute under award number K12HS026395. The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the Department of Veterans Affairs or the United States government.

REFERENCES

1. Demeke HB, Pao LZ, Clark H, Romero L, Neri A, Shah R, et al. Telehealth practice among health centers during the COVID-19 pandemic—United States, July 11–17, 2020. Morbidity and Mortality Weekly Report. 2020;69(50):1902. [PubMed: 33332297]
2. Turer RW, Jones I, Rosenbloom ST, Slovis C, Ward MJ. Electronic personal protective equipment: a strategy to protect emergency department providers in the age of COVID-19. Journal of the American Medical Informatics Association. 2020;27(6):967–71. [PubMed: 32240303]
3. Lindsay JA, Hogan JB, Ecker AH, Day SC, Chen P, Helm A. The importance of video visits in the time of COVID-19. The Journal of Rural Health. 2021;37(1):242–5. [PubMed: 32506751]
4. Mott JM, Grubbs KM, Sansgiry S, Fortney JC, Cully JA. Psychotherapy Utilization Among Rural and Urban Veterans From 2007 to 2010. J Rural Health. 2015;31(3):235–43. [PubMed: 25471067]
5. Mohr NM, Wu C, Ward MJ, McNaughton CD, Richardson K, Kaboli PJ. Potentially avoidable inter-facility transfer from Veterans Health Administration emergency departments: A cohort study. BMC Health Serv Res. 2020;20(1):110. [PubMed: 32050947]
6. Saurman E, Perkins D, Roberts R, Roberts A, Patfield M, Lyle D. Responding to mental health emergencies: implementation of an innovative telehealth service in rural and remote New South Wales, Australia. Journal of emergency nursing. 2011;37(5):453–9. [PubMed: 21889653]
7. Fairchild R, Ferng-Kuo S-F, Rahmouni H, Hardesty D. An observational study of telemental care delivery and the context for involuntary commitment for mental health patients in a group of rural emergency departments. Telemedicine reports. 2020;1(1):22–35. [PubMed: 33283206]
8. McCarthy JF, Blow FC, Ignacio RV, Ilgen MA, Austin KL, Valenstein M. Suicide among patients in the Veterans Affairs health system: rural-urban differences in rates, risks, and methods. Am J Public Health. 2012;102 Suppl 1:S111–7. [PubMed: 22390583]
9. Teich J, Ali MM, Lynch S, Mutter R. Utilization of Mental Health Services by Veterans Living in Rural Areas. J Rural Health. 2017;33(3):297–304. [PubMed: 27701791]
10. TeleMental Health in the Department of Veteran Affairs [press release]. Washington, D.C.: U.S. Department of Veterans Affairs 2018.
11. Affairs USDoV. VHA Telehealth Services Washington, D.C. : U.S. Department of Veteran Affairs; 2019. p. 2.
12. Lindsay JA, Day SC, Amspoker AB, Fletcher TL, Hogan J, Day G, et al. Personalized implementation of video telehealth. Psychiatric Clinics. 2019;42(4):563–74. [PubMed: 31672207]
13. Connolly SL, Stolzmann KL, Heyworth L, Weaver KR, Bauer MS, Miller CJ. Rapid Increase in Telemental Health Within the Department of Veterans Affairs During the COVID-19 Pandemic. Telemed J E Health. 2020.

14. Ward MJ, Shuster JL, Mohr NM, Kaboli PJ, Mixon AS, Kemmer J, et al. Implementation of Telehealth for Psychiatric Care in VA Emergency Departments and Urgent Care Clinics. Telemedicine and e-Health. 2021.
15. Glasgow RE, Vogt TM, Boles SM. Evaluating the public health impact of health promotion interventions: the RE-AIM framework. American journal of public health. 1999;89(9):1322–7. [PubMed: 10474547]
16. Morrill R, Cromartie J, Hart G. Metropolitan, urban, and rural commuting areas: toward a better depiction of the United States settlement system. Urban geography. 1999;20(8):727–48.
17. Palinkas LA, Horwitz SM, Green CA, Wisdom JP, Duan N, Hoagwood K. Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. Administration and policy in mental health and mental health services research. 2015;42(5):533–44. [PubMed: 24193818]
18. Adusumilli G, Joseph SE, Samaan MA, Schultz B, Popovic T, Souza RB, et al. iPhone Sensors in Tracking Outcome Variables of the 30-Second Chair Stand Test and Stair Climb Test to Evaluate Disability: Cross-Sectional Pilot Study. JMIR Mhealth Uhealth. 2017;5(10):e166. [PubMed: 29079549]
19. Stetler CB, Legro MW, Wallace CM, Bowman C, Guihan M, Hagedorn H, et al. The role of formative evaluation in implementation research and the QUERI experience. Journal of general internal medicine. 2006;21 Suppl 2:S1–8.
20. Holtrop JS, Rabin BA, Glasgow RE. Qualitative approaches to use of the RE-AIM framework: rationale and methods. BMC health services research. 2018;18(1):1–10. [PubMed: 29291745]
21. Goldsmith LJ. Using Framework Analysis in Applied Qualitative Research. Qualitative Report. 2021;26(6).
22. Taylor B, Henshall C, Kenyon S, Litchfield I, Greenfield S. Can rapid approaches to qualitative analysis deliver timely, valid findings to clinical leaders? A mixed methods study comparing rapid and thematic analysis. BMJ open. 2018;8(10):e019993.
23. Vindrola-Padros C, Johnson GA. Rapid techniques in qualitative research: a critical review of the literature. Qualitative Health Research. 2020;30(10):1596–604. [PubMed: 32667277]
24. Gale RC, Wu J, Erhardt T, Bounthavong M, Reardon CM, Damschroder LJ, et al. Comparison of rapid vs in-depth qualitative analytic methods from a process evaluation of academic detailing in the Veterans Health Administration. Implementation Science. 2019;14(1):1–12. [PubMed: 30611302]
25. Averill JB. Matrix analysis as a complementary analytic strategy in qualitative inquiry. Qualitative health research. 2002;12(6):855–66. [PubMed: 12109729]
26. Fetters MD, Rubinstein EB. The 3 Cs of Content, Context, and Concepts: A Practical Approach to Recording Unstructured Field Observations. Ann Fam Med. 2019;17(6):554–60. [PubMed: 31712294]
27. Forman J, Heisler M, Damschroder LJ, Kaselitz E, Kerr EA. Development and application of the RE-AIM QuEST mixed methods framework for program evaluation. Preventive medicine reports. 2017;6:322–8. [PubMed: 28451518]
28. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. International journal for quality in health care. 2007;19(6):349–57. [PubMed: 17872937]
29. OIG Determination of Veterans Health Administration's Occupational Staffing Shortages Fiscal Year 2020. Veterans Health Adminstration 2020.
30. Miller MJ, Pak SS, Keller DR, Barnes DE. Evaluation of pragmatic telehealth physical therapy implementation during the COVID-19 pandemic. Physical therapy. 2021;101(1):pzaa193. [PubMed: 33284318]
31. Gadzinski AJ, Andino JJ, Odisho AY, Watts KL, Gore JL, Ellimoottil C. Telemedicine and eConsults for hospitalized patients during COVID-19. Urology. 2020;141:12–4. [PubMed: 32330533]
32. Bains J, Greenwald PW, Mulcare MR, Leyden D, Kim J, Shemesh AJ, et al. Utilizing telemedicine in a novel approach to COVID-19 management and patient experience in the emergency department. Telemedicine and e-Health. 2021;27(3):254–60. [PubMed: 32821027]

33. Moreau JL, Cordasco KM, Young AS, Oishi SM, Rose DE, Canelo I, et al. The use of telemental health to meet the mental health needs of women using Department of Veterans Affairs Services. Women's Health Issues. 2018;28(2):181–7. [PubMed: 29339013]

Table 1:

Interview Questions and RE-AIM Domains

Local Clinicians, Leadership, and External Partners	Veteran-Patients
REACH	
In your experience, have Veterans been willing to engage in tele-mental health video at the ED/UC?	Can you recall what you thought about using video telehealth for your mental health at the ED/UC when it was first recommended for you? How willing were you to use the tele-mental health video? How willing do you think other Veterans will be to use this technology? How do you think other veterans feel about using video telehealth for mental health in the ED/UC?
EFFECTIVENESS	
Which patients have you seen tele-mental health most help at your site? Who would benefit most from an expansion of tele-mental health video? How would you describe the quality of care provided through the tele-mental health video intervention? Would you consider the care provided tele-mental health video intervention equivalent to in-person care? What makes you say that?	Would you consider the care provided TMH-V intervention equivalent to in-person care? What makes you say that? Do you think you got the care you needed using video tele-health?
ADOPTION	
Have you observed whether anyone has been burdened by tele-mental health video? If so, who has been *most* burdened? Who have you seen most burdened by tele-mental health video? *[if clinical provider] Is there anything you can think of during the clinical encounter that might encourage providers at your facility to continue using tele-mental health video? †What are current practices/factors that might make using tele-mental health feasible in the emergency care setting?	
IMPLEMENTATION	
*Can you share about a time it went badly or failed? What are current practices/factors that make using tele-mental health difficult at the emergency care setting at your site? *Can you share about a time that using tele-mental health video at the ED/UC went smoothly at your site? *Why do you think using tele-mental health video went well at that time? Are there any unique features of your site that have helped the use of tele-mental health video may not be present at other sites? *Amongst those who will evaluate Veterans in the ED/UC, why do you think they have resumed in-person care?	Were there any difficulties or problems with using video telehealth for mental health at the ED/UC? Was there anything you didn't like about using video telehealth for mental health at the ED/UC? Can you tell me about that? What do you think went well during your video telehealth visit for mental health at the ED/UC? Was there anything in particular that you think helped with this [the thing that went well]? / What were some things that helped with this?
MAINTENANCE	
*[if clinical provider] Is there anything you can think of during the clinical encounter that might encourage providers at your facility to continue using tele-mental health video? *[if clinical provider] What barriers during the delivery of tele-mental health you can think of that might prevent it from continuing? What administrative barriers might prevent the use and acceptance of tele-mental health in the ED/UC long term? What strategies might overcome some of these barriers we've talked about? What administrative facilitators might help the use and acceptance of tele-mental health in the ED/UC long term? †If a veteran presented to a non-VA facility, what would be the value to your organization to have the ability to coordinating veteran care with VA (e.g. veteran history, MH treatment, etc.)? *Only asked of Local Clinicians & Leadership; †Only asked of External Experts	Is there anything you can think of that might prevent using video to meet with mental health in the ED from continuing? What do you think we could do that would help improve using video telehealth for mental health consults at the ED/UC?
EXPANSION	
Should tele-mental health video be expanded to additional sites? Why/why not? How could this program expand access to unscheduled mental health care for Veterans other than presenting to ED/UC for care? / Are there any other settings, beyond ED/UC, that you think access to unscheduled mental health care through video telehealth could work and would be appropriate? What concerns do you have about a program like that?	

Local Clinicians, Leadership, and External Partners	Veteran-Patients
REACH	
Key: *Only asked of Local Clinicians & Leadership; †Only asked of External Experts	

Table 2:

Observation Guide

Field Observations: Goal is to describe what you see/hear using thick description. You do not need to answer all questions.	
Research Questions:	To observe team dynamics, making note of what works well and what can be improved in the hand-off process • To identify barriers to sustainment of tele-mental health care in ED/UC (Maintenance) • To identify unique facilitators that may not replicate to other facilities (Implementation & Maintenance)
Who is the ED/UC provider? Who is the on-site Mental Health Officer of the Day (MHOD)?(Adoption) *Who is remote MHOD?(Adoption)* *Who is the veteran? (what are their demographics? What is the presenting problem?) (Reach)*	
Context: Social surroundings and recent events affecting the interaction.	
Where is the TMH visit taking place (ED/UC? Private room? Description of the room e.g. clear walls, etc.)? (Implementation) *Describe the ED/UC. (How busy is it? How frantic or stressed do staff seem?) (Implementation)* *Where there any other relatives or friends of patient present? If yes, Describe.* *What was the role of the observer? (do they introduce themselves?)*	
Content: What happens during the observation. Guided by the research question.	
Describe the process of identifying the Veteran for TMH. (What was exchange amongst providers? Were there any concerns voiced regarding appropriateness?) (Reach) *Describe the process of alerting the Remote MHOD. Capture communication and verbal exchanges (if possible). Any delays from ED/UC provider or local MHOD? (Implementation)* *Describe the process of handoff from ED/UC attending to remote MHOD. Capture communication and verbal exchange (if possible). Was there difficulty or delay connecting the two? (Implementation)* *Who is assigned to the case? (Nurse or Tech?) Describe demeanor of nurse/tech (Busy? Friendly? Relaxed? Confident? Distracted?) (Adoption)* *How does the setup for the Veteran occur? Any issues with equipment (e.g. is it charged)? Any delay in nurse/tech reaching MHOD? How is the patient introduced to remote MHOD? (Implementation)* *Describe demeanor of the Veteran during the encounter (e.g. relaxed, engaged, agitated, annoyed?) (Reach)* *Were there any notable "workarounds" or trouble shooting solutions to resolve issues? (Implementation)* *Did any technical issues arise during consultation? Did the Veteran need or appear to need local assistance? Did the MHOD contact local staff during consultation? (Implementation)* *If possible, describe the handoff between Remote MHOD and ED/UC attending. Any delays or difficulty connecting the two? (Implementation)*	
Concepts: Connects the field observations with the research question and/or theory.	
What are the overarching themes you've noticed? *General ideas/themes around the environment or space.*	

Note: ED = emergency department, UC = urgent care center, MHOD = mental health officer of the day. RE-AIM outcomes indicated in parentheses.