MAHSO

MARKET AREA HEALTH SYSTEMS OPTIMIZATION

National Planning Strategy

Telehealth

September 2021

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Executive Summary

The Department of Veterans Affairs (VA) Market Area Health Systems Optimization (MAHSO) effort developed 96 draft market assessments in the 18 VA Veterans Integrated Service Networks (VISNs) to produce opportunities for the design of high-performing integrated delivery networks. These market assessments were required by the VA Maintaining Systems and Strengthening Integrated Outside Networks (MISSION) Act of 2018.

These market assessments will culminate with a report to the Asset and Infrastructure Review (AIR) Commission that will present Veterans Health Administration's (VHA's) plan for the future of VA health care, enabling Veterans to access the right high-quality care in the right location. Recommendations from the market assessments will be finalized and submitted by the Secretary of VA to the presidentially appointed AIR Commission for consideration. The AIR Commission will submit its recommendations to the President for review and approval, prior to the recommendations going to Congress for review and approval.

This Telehealth National Planning Strategy establishes a consistent set of guidelines which will help to develop the opportunities that are specific to telehealth services. Using comprehensive VA data, the guidelines can facilitate improved alignment of telehealth capacity and capabilities with the evolving needs of Veterans.

The VHA Chief Strategy Office (CSO), committed to working with offices across the organization to create programs and services that best serve Veterans, developed the Telehealth National Planning Strategy primarily in consultation with the Office of Connected Care (OCC), and other offices including the Office of Mental Health and Suicide Prevention (OMHSP), Office of Primary Care, and National Specialty Care Program Office.

Telehealth Program Overview

VHA's OCC has been involved with progressive solutions for telehealth delivery, including the strategic direction, policies, technology, and overall telehealth framework for VA. Telehealth is provided at VA facility, VISN, consortia, and national levels. The type and breadth of telehealth services at each level is dependent on volume, access, costs in the community, and health care professional supply.

The COVID-19 pandemic sparked exponential and unplanned telehealth growth across VA. This rapid expansion was driven by pandemic-related public health considerations, which resulted in increased adoption of virtual care modalities by health care professionals and Veterans in many clinical specialties, such as primary care and mental health. VA telehealth modalities include synchronous telehealth, asynchronous telehealth, and Remote Patient Monitoring-Home Telehealth (RPM-HT). Synchronous

telehealth workload significantly increased by 232% from 1,353,740 encounters in fiscal year (FY) 2019 to 4,493,227 encounters in FY 2020. [1] By FY 2020, synchronous telehealth workload accounted for 92.2% of all telehealth workload. While FY 2021 is not complete at the time of this report, FY 2021 expects a 120% increase compared to FY 2020 in total synchronous and asynchronous telehealth encounters.

Despite VA's significant progress with enterprise telehealth implementation, there remain opportunities to accelerate the integration of connected care services across VA, through adoption of a standardized enterprise strategy. Areas of consideration for this strategy includes standardized telehealth resources dedicated to the administration of clinical resource sharing; a modernized, integrated, and flexible scheduling system; and the need for funding and work credit incentives to support telehealth delivery and clinical resource sharing.

The Telehealth National Planning Strategy will document how telehealth is nationally organized, identify telehealth opportunities that may provide the greatest impact for VA, and estimate the high-level impact telehealth will have on future infrastructure requirements.

Resulting Planning Guidelines

Planning guidelines and thresholds inform products of the market assessment process. The rationale for establishing VA planning guidelines and thresholds is rooted in the belief that quality of care or patient safety may be compromised when a service falls below identified measures.

The planning priorities for telehealth are to enhance Veteran digital engagement, deliver health care without walls, and solidify connected care foundations. The total projected number of synchronous telehealth encounters in FY 2029 is projected to be 15.5 million encounters based on a conversion of Enrollee Health Care Projection Model (EHCPM) work Relative Value Unit (wRVU) projections and utilizing FY 2020 synchronous telehealth encounters relative to FY 2019 total VA encounters. While telehealth adoption has implications for all specialties, mental health and primary care are a key focus, together accounting for 69% of overall synchronous telehealth encounters in FY 2020.

The Telehealth National Planning Strategy developed quantitative and qualitative planning guidelines across demand, supply, access, quality, and other applicable domains for each service type. A summary of the primary demand planning guidelines is as follows:

Telehealth Planning Guidelines

Service	Primary Planning Guideline
Mental Health, Primary Care, Specialty Care	**Demand Projections:** • Enrollees will remain essentially stable. • Mental health wRVUs and encounters are projected to increase 70% through 2029. • 30% to 40% of mental health encounters may potentially be delivered via synchronous telehealth by 2029. • Primary care demand is projected to grow 48% through 2029, based on a combination of increased primary care uniques (more users), and those primary care uniques increased utilization rates (using more visits). • 15% to 25% of primary care encounters may be potentially delivered via synchronous telehealth by 2029. • Specialty care encounters will increase in line with wRVU projections through 2029 with varying rates of synchronous telehealth adoption.
	• **When to Maintain Current Capabilities**: If the 10-year projection for synchronous telehealth encounters is within 10% of historical synchronous telehealth encounters, then VA should maintain current capabilities. • **When to Resize Capabilities**: If the 10-year projection for synchronous telehealth encounter demand is greater than 10% above or below historical demand, then VA should resize capabilities.
Innovate and Enhance Capabilities: Regardless of projections, the following will need to occur to deliver modern services: enhancements to connected care staffing, technology and/or IT infrastructure, scheduling systems, policy, cost accounting systems, and distribution systems for connected care services.	

Future Program Planning

Future considerations for optimal national implementation of telehealth within VA are grouped into the following categories and will support improving quality and access to telehealth for all Veterans:

- Reimagining clinical service delivery with connected care technologies
- Connected care field staffing resource planning
- Infrastructure and hardware planning
- Scheduling system modernization
- Modernizing VA business operations, policies, and practices
- Logistics and distribution strategy
- Clinical workflow redesign
- Telehealth training needs
- Quality management/assurance processes

VA will use the national planning guidelines to apply standard programmatic criteria to applicable opportunities identified in the market assessments. The planning guidelines will also inform future quadrennial market assessments and other long-range planning exercises.

Conclusion

The National Planning Strategy guidelines and thresholds are to be used to ensure that capacity planning is matched to Veteran demand and that sound, Veteran-centric recommendations are established to inform and support the development of the VA AIR Commission Report. They are also intended to add to existing VA planning guidelines and be used for future planning activities.

1. Program Overview

1.1 Program Mission

Telehealth uses innovative technology to improve the way the Department of Veterans Affairs (VA) provides patient-centered care to Veterans, and connects Veterans with VA care teams and specialists no matter the distance. [2] The Office of Connected Care (OCC) is critical in bringing the benefits of VA digital technology to Veterans and health care professionals, extending access to care beyond the traditional office visit. [3]

Mission and Vision

VA's Connected Care mission is to "deliver high-quality, Veteran-centered care, optimize individual and population health, advance health care that is personalized and proactive, and enhance the health care experience through virtual modalities of care." [4]

The vision for the Office of Connected Care is to provide "Trusted Care: Anytime, Anywhere." [4] It states that, "VA will leverage connected technologies to enhance the accessibility, capacity, quality, and experience of VA health care for Veterans, their families, and their caregivers anywhere in the country." It adds that "Connected care will be effectively integrated into the daily lives of both VA staff members and the Veterans they serve." [4]

Opportunity Statement

VA leverages digital technologies to increase Veteran access to care, system efficiency and capacity, and the overall quality of care. VA has a significant digital and telehealth infrastructure in place, has an innovative workforce empowered to deliver care virtually, and has a patient population that has demonstrated their appreciation of VA's virtual care options. [5] Despite VA's significant progress with enterprise telehealth implementation, there remain opportunities to accelerate the integration of connected care services across VA, through adoption of a standardized enterprise strategy, with deep integration of telehealth into all care delivery. This acceleration is critical to prepare VA to compete in a growing digital marketplace, to help VA address an increased demand for services, to deliver integrated care despite geographic limitations, to enhance quality, and to better address Veteran health care needs in real time. The Telehealth National Planning Strategy will document how telehealth is nationally organized, identify telehealth opportunities that may provide the greatest impact for VA, and estimate the high-level impact telehealth will have on future infrastructure requirements.

Strategic Priorities

The Veterans Health Administration (VHA) has established a five-year (2021-2025) strategic vision for connected care. The Office of Connected Care collaborates with

stakeholders across VA to drive execution of the vision. The vision has three goals that drive eight organizational strategies. [4] These include:

1. **Enhance Veteran Digital Engagement**
   1.1. Build an engaging digital front door
   1.2. Support Veterans in managing their own health
2. **Deliver Health Care without Walls**
   2.1. Deliver care in the home
   2.2. Expand clinical capacity
   2.3. Empower VA's workforce to deliver virtual care
3. **Solidify Connected Care Foundations**
   3.1. Modernize VA's connected care infrastructure
   3.2. Analyze digital health data and connected care program for new insights
   3.3. Enhance connected care operations and authorities

A detailed summary of VHA's Connected Care strategic plan is found in Appendix D. By pursuing the goals outlined above, VA will improve Veterans' access to care, experience of care, and quality of care. [4]

This planning document will focus primarily on VA's telehealth strategy to 'expand clinical capacity' by proposing a framework that will allow VA to operate cohesively at the market, regional, and national levels through telehealth resource sharing.

2. Current State Overview

VHA's OCC develops the strategic direction, policies, technology, and overall telehealth framework for VA, and supports clinical program offices and the field as they integrate telehealth into delivery of their clinical services. Clinical program offices innovate within OCC's telehealth framework to deliver high-quality care and address gaps in access. The COVID-19 pandemic sparked exponential and unplanned telehealth growth across VA. [5] The rapid expansion was driven by pandemic-related public health considerations, which resulted in significantly increased adoption of virtual care modalities by health care professionals and Veterans in many clinical specialties, such as primary care and mental health.

2.1 Demographic and Programmatic Distribution Analysis

VA Telehealth

Telehealth increases Veteran access to high-quality health care services by using information and telecommunication technologies to provide care when the patient and the health care professional are separated by geographical distance. VA is committed to increasing access to care for Veterans and has placed special emphasis on those in rural and remote locations. [6] Any Veteran who qualifies to receive VA health care and lives in the United States (U.S.) or a U.S. territory is able to receive telehealth care from their VA health care professionals. [7]

Telehealth Modalities

Synchronous Telehealth

Synchronous telehealth is the use of real-time, interactive video conferencing, sometimes with supportive peripheral technologies, to assess, treat and provide care to a patient remotely. [6] The patient is connected to a health care professional at another location either from their home, local VA location, or an affiliated VA location. VA's synchronous telehealth, also referred to as Clinical Video Telehealth, encompasses over 50 clinical specialties in practice areas of mental health, primary care and specialty care. [6] Since fiscal year (FY) 2018, 93.2% of VA primary care health care professionals and 97.1% of VA mental health care professionals have conducted at least one synchronous telehealth appointment. [4] The planning guidelines outlined in Section 4 will primarily focus on projected synchronous telehealth demand, supply, access, and quality. Provider to provider consultations can also be conducted synchronously to offer both medical second opinions and medical training.

Asynchronous Telehealth/Store and Forward Telehealth (SFT)

Asynchronous telehealth is the use of technologies to acquire and store clinical information, such as data, images, and sounds, which are then forwarded to, or retrieved by a health care professional at another location for clinical evaluation. [6] These store and forward telehealth (SFT) services use a clinical consult pathway and IT

platform to communicate clinical data and evaluation results between health care professionals and Veterans. [6] Examples of this include retinopathy screenings and dermatology assessments. SFT technologies may require an in-person visit by the Veteran to obtain necessary images or clinical information. In July 2021, VA released the My VA Images application to allow Veterans to send asynchronous video and images from the home. Future SFT demand for specialties such as cardiology and radiology may increase as the care needs for the aging Veteran population become more prominent. [5]

Additional VA Virtual Care Programs

Remote Patient Monitoring-Home Telehealth (RPM-HT) is a program into which Veterans are enrolled, that applies care management principles to coordinate Veteran care at home using health informatics, disease management expertise, and technologies, such as in-home and mobile messaging devices and video technologies, to connect daily with Veterans. [6] The goal of RPM-HT is to improve clinical outcomes and access to care while reducing complications, hospitalizations, and clinic or emergency room visits for Veterans with chronic conditions that are at high risk for institutional care. [6] RPM-HT data can include vital signs, weight, blood pressure, blood glucose levels, blood oxygen saturation levels, and other health-related data. In FY 2020, more than 140,934 Veterans were enrolled in RPM-HT and 34.4% of these Veterans lived in rural areas. [6] Going forward, VA envisions establishing a continuum of RPM-HT services to engage Veterans in-between visits at any point in their health care journey. This includes allowing VA health care professionals to subscribe to and receive notifications about patient generated health data (PGHD), collected and transmitted through an expanding array of VA and Veteran-owned clinical wearables and devices.

My HealtheVet is a patient portal that allows Veterans to interact with their own health care information including the ability to access medical records, manage appointments and prescriptions, connect with other key VA digital resources, and communicate asynchronously with their VA health care teams regarding non-urgent health care issues. [3] Over 5.7 million unique Veterans have used My HealtheVet to manage their health, which includes 2.6 million users in FY 2020 alone. [8] From 2005 to the end of June 2021, over 132 million secure messages were sent by Veterans and their health care team through My HealtheVet. [8]

VA Mobile develops mobile applications for Veterans, caregivers, and VA care teams, providing opportunities for these individuals to engage with relevant health care information and tasks more conveniently on their mobile device. [5] Several VA Mobile applications directly support telehealth applications, including VA Video Connect, Annie, and My VA Images. These applications include both mobile-optimized web applications and native mobile applications and can all be found on the VA App Store. [9]

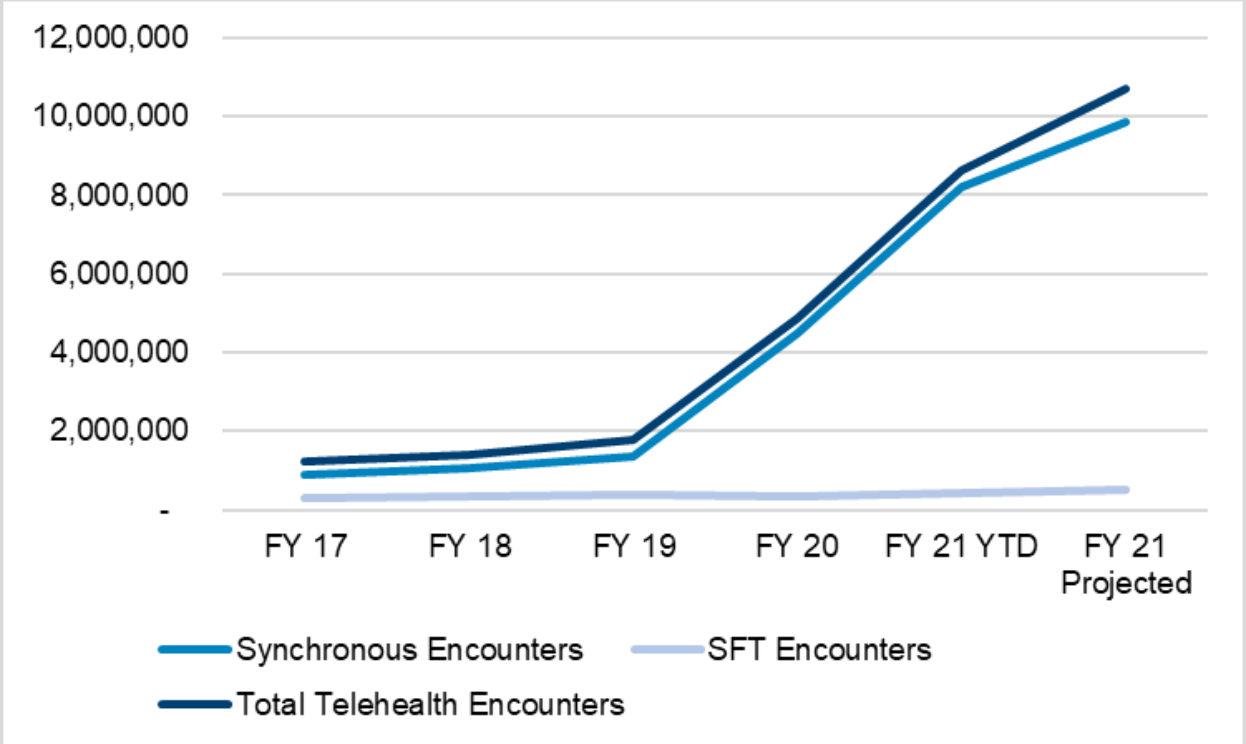
Audio-Only/Telephone Care, sometimes referred to as audio-only telehealth, is an encounter between is a health care professional and patient conducted by telephone. By many definitions, telephone care is technically a telehealth modality. [5] Telephone

care, both on-demand through VA's Clinical Contact Centers and as scheduled telephone appointments with VA primary care, mental health, and specialty care providers, is highly utilized across VA and is an important part of VA's strategy to increase access and connect with Veterans conveniently. However, telephone-based care is not included as part of the official VA telehealth program. Data regarding audio-only care are not included in this report.

VA Telehealth Utilization

In FY 2020, in the midst of the COVID-19 pandemic, VA provided more than 5.6 million episodes of telehealth care across all modalities (synchronous telehealth, SFT, and RPM-HT) to over 1.6 million Veterans. [4] As shown in Figure 1, total telehealth encounters (synchronous telehealth and SFT) steadily increased from FY 2017 to FY 2019, then significantly increased in FY 2020. Synchronous telehealth encounters follow a similar trend with a dramatic increase from FY 2019 to FY 2020. The significant increase in FY 2020 total encounters and synchronous telehealth encounters is attributed to the COVID-19 pandemic. Consistently from FY 2017 to FY 2020, synchronous telehealth was used far more frequently than SFT. SFT encounters did not change significantly from FY 2017 to FY 2020. Figure 2 illustrates the increase in total telehealth encounters per unique Veteran using telehealth.

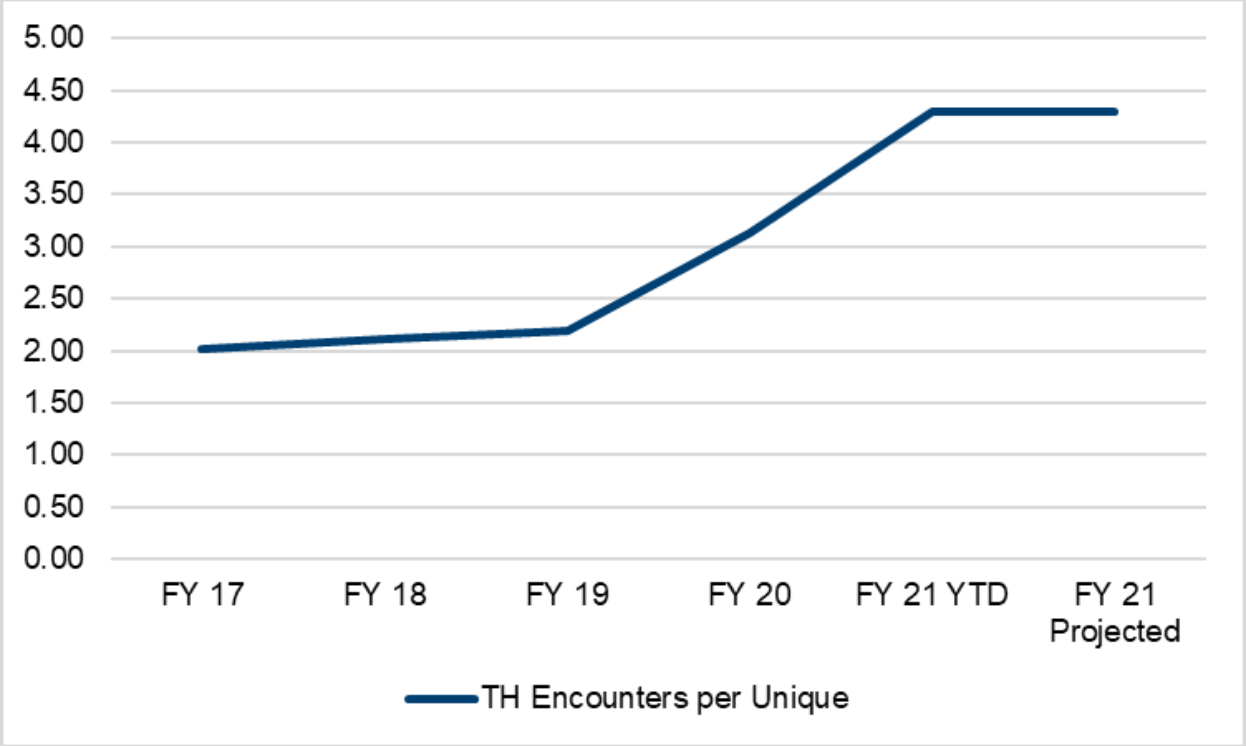
Figure 1: *Telehealth (Synchronous Telehealth and SFT) Encounters (FY 2017-21)*



Fiscal Year	Synchronous Telehealth Encounters	SFT Encounters	Total Telehealth Encounters	% of Total Encounters that are Telehealth
2017	896,974	322,875	1,219,849	1.2%
2018	1,073,159	344,853	1,418,012	1.4%
2019	1,353,740	411,807	1,765,547	1.7%
2020	4,493,227	370,162	4,863,389	6.5%
2021 YTD (7/29/2021)	8,200,762	416,922	8,617,684	11.4%
2021 Projected	10,192,498	506,844	10,699,342	11.4%

Source: VHA Support Service Center (VSSC), Telehealth Dashboard as of 07/29/2021.

Figure 2: *Total Encounters per Unique Veterans (FY 2017-21)*



Fiscal Year	Total TH Encounters	Total Uniques	TH Encounters per Unique
2017	1,219,849	605,111	2.02
2018	1,418,012	671,624	2.11
2019	1,765,547	805,374	2.19
2020	4,863,389	1,556,223	3.13
2021 YTD (7/29/2021)	8,617,684	2,045,193	4.29
2021 Projected	10,508,108	2,447,453	4.29

Source: VSSC, Telehealth Dashboard as of 7/29/2021.

The overall telehealth encounter workload increased from FY 2017 to FY 2020. The annual increase in telehealth encounter workload was 16% from FY 2017 to FY 2018, 25% from FY 2018 to FY 2019, and 175% from FY 2019 to FY 2020. However, the vast majority of the telehealth encounter growth was in synchronous telehealth workload (400% from FY 2017 through FY 2020). By FY 2020, synchronous telehealth workload accounted for 92% of all telehealth workload. While FY 2021 is not complete at the time of this report, FY 2021 expects a 120% increase in total synchronous and asynchronous telehealth encounters relative to FY 2020 based on a projection of encounters from the first ten months of FY 2021.

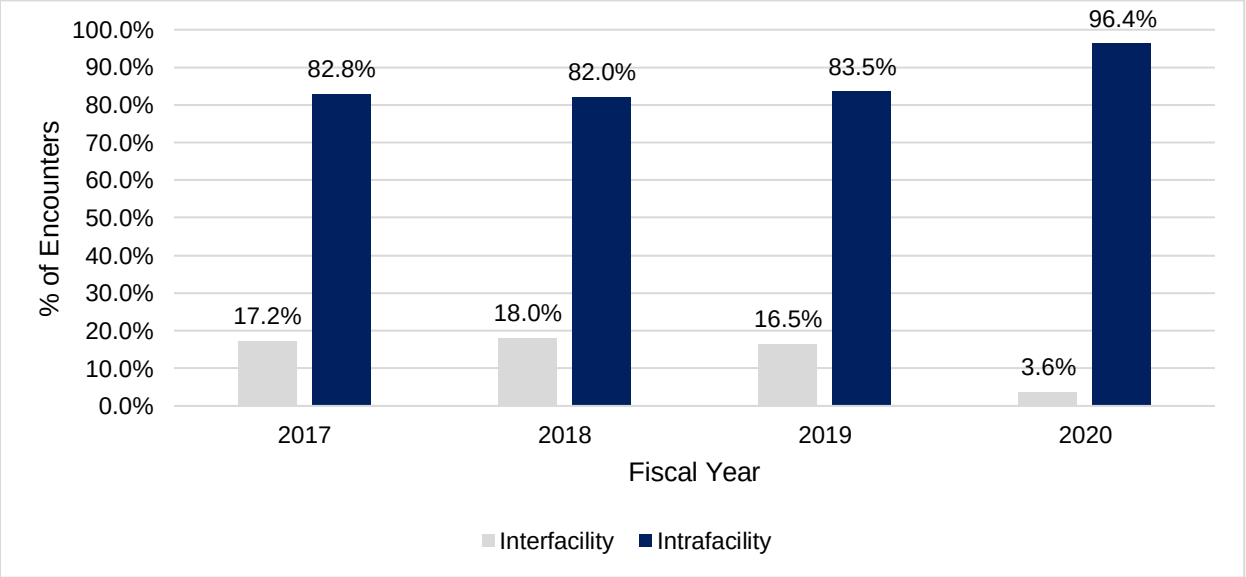
Veteran and Provider Locations

Interfacility Telehealth vs. Intrafacility Telehealth Definitions and Analysis

Interfacility telehealth is care that occurs between a health care professional and a patient when the patient site's parent facility is different than the health care professional site's parent facility. Intrafacility telehealth is care that occurs when the patient site's parent facility is the same as the health care professional site's parent facility. For example, a health care professional delivering services from a VA medical center (VAMC) to a Veteran at one of the VAMC's associated Community-Based Outpatient Clinics (CBOCs), is intrafacility telehealth. Figure 3 shows that facilities are primarily serving their own Veterans in an intrafacility manner. [1] Interfacility telehealth encounters significantly decreased in 2020 because the pandemic reduced Veterans coming into facilities, and care was provided via telehealth modalities by their local providers. [5]

Figure 4 illustrates interfacility and intrafacility encounters based on service type. As noted above, FY 2020 interfacility telehealth, specifically clinic-based telehealth, was affected by the COVID-19 pandemic. [5] VA's goal is to increase interfacility telehealth to share health care professional resources across facility and Veterans Integrated Service Network (VISN) boundaries, especially for complex services that may have limited resources. This helps ensure Veterans receive any service needed, when needed. Appendix D details intrafacility and interfacility encounters by VAMC.

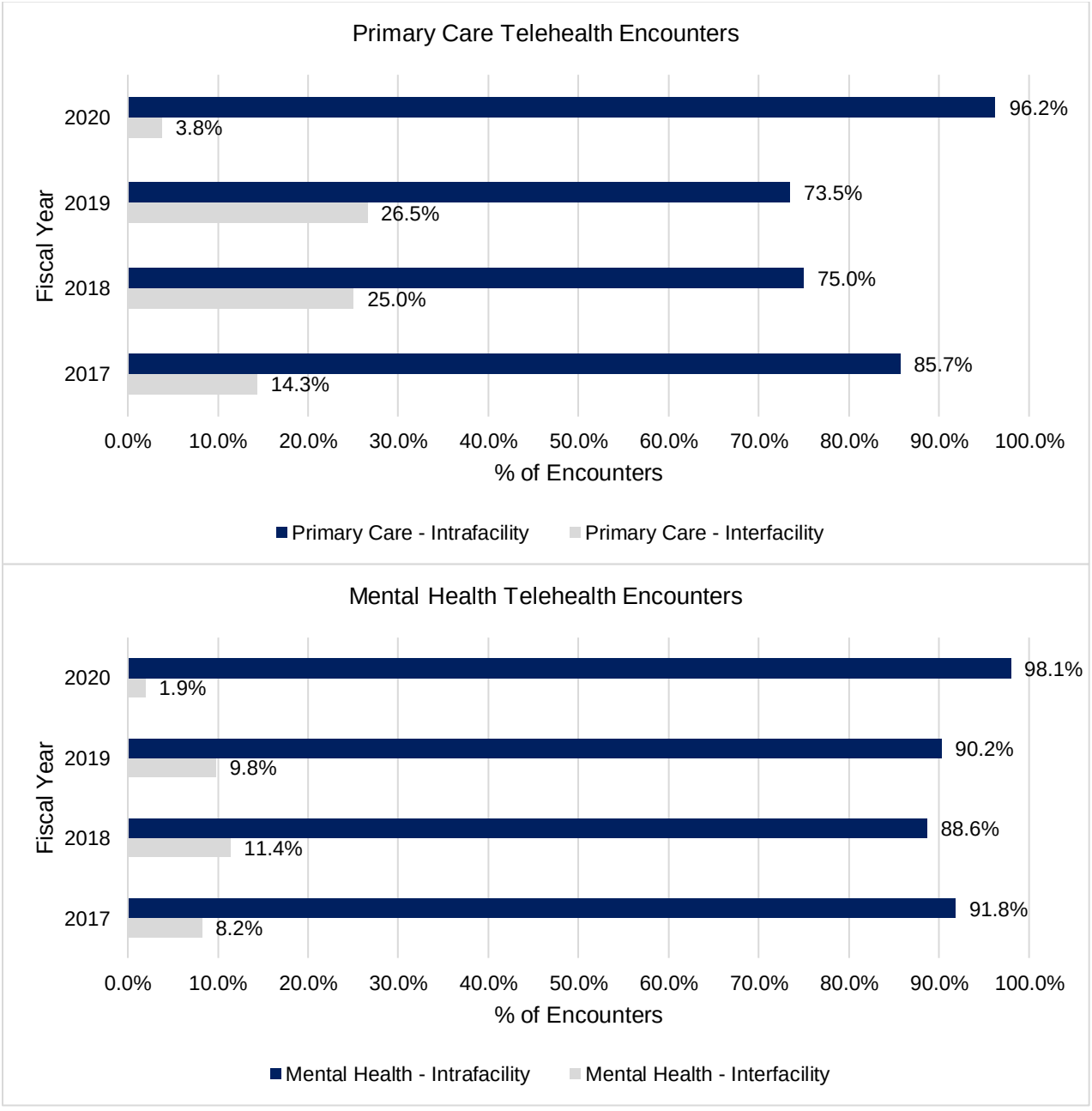
Figure 3: *Interfacility vs. Intrafacility Telehealth Encounters* (FY 2017-20)*

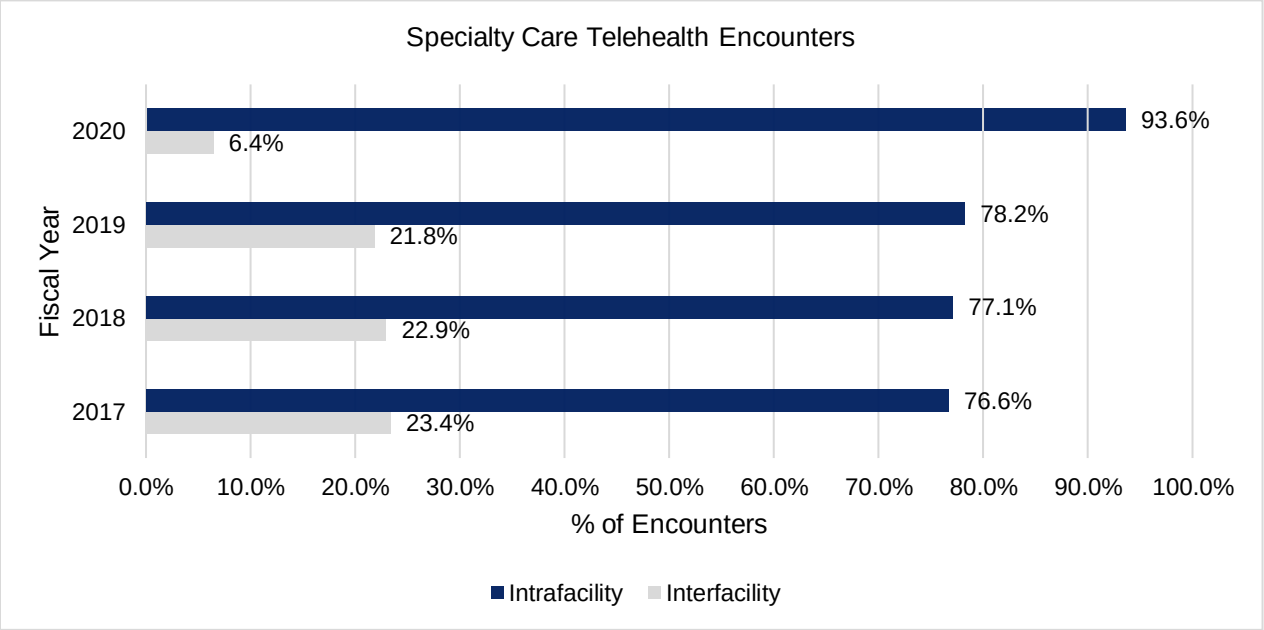


Fiscal Year	Interfacility Telehealth Encounters	Intrafacility Telehealth Encounters	Total Telehealth Encounters
2017	209,858	1,009,955	1,219,813
2018	255,808	1,161,505	1,417,313
2019	291,419	1,473,151	1,764,570
2020	177,232	4,681,148	4,858,380

*Differences in total telehealth encounters from previous figures are due to some encounters missing a provider or patient site identifier.
Source: VSSC, Telehealth Dashboard as of 06/26/2021.

Figure 4: *Interfacility vs. Intrafacility Telehealth Encounters by Service (FY 2017-20)*



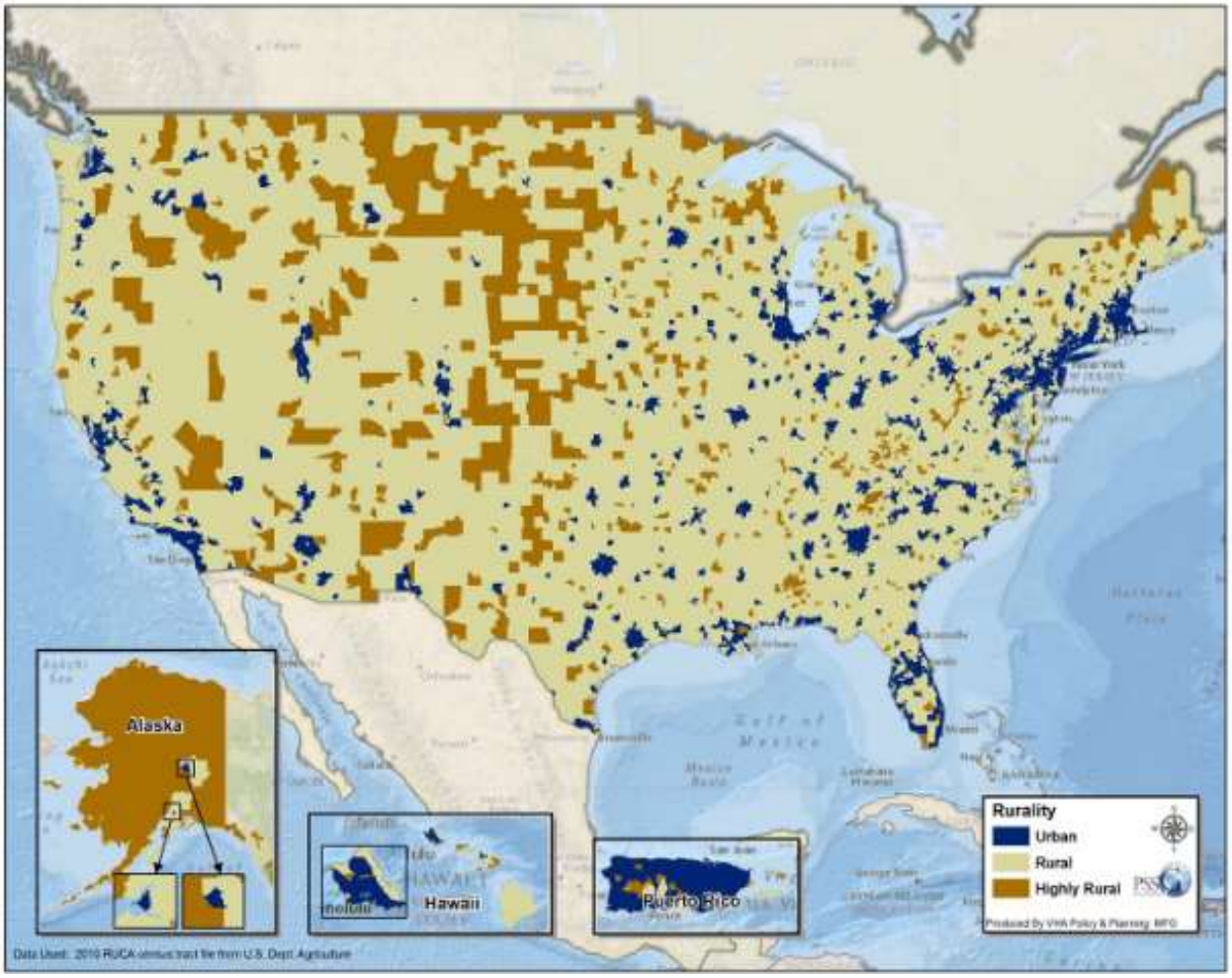


Source: VSSC, Telehealth Dashboard as of 06/26/2021.

Rurality

There are approximately 4.7 million Veterans living in rural areas, emphasizing the need for innovative and sustainable rural health solutions nationwide. [10] Telehealth is considered one rural health solution and the Rural Health National Planning Strategy developed in conjunction with the Office of Rural Health (ORH) and OCC addressed other rural health planning solutions. [11] Figure 5 shows the Rural-Urban Commuting Areas (RUCA) Census tracts summarized into urban, rural, and highly rural areas, which are further defined in Appendix D.

Figure 5: *2010 RUCA Census Tracts Summarized into Urban, Rural, and Highly Rural Areas*



Source: VA Office of Rural Health. (2020).

Veterans living in rural areas are more likely to face economic and social challenges that influence their health care needs. 49% of Veterans earn less than $35,000 in annual income, 13% are minorities, and 26% do not access the internet at home. [11] Lack of internet access at home may be a result of limited broadband availability or internet affordability. Rural Veterans are also older—over half (55%) are over the age of 65, putting them at higher risk for age-related illnesses and making their care more costly. [10] A 2016 U.S. Census analysis (detailed in Appendix D) illustrates that at least 50% of citizens age 65 or over living in Vermont, Maine, Mississippi, West Virginia and Arkansas, live in rural areas.

Demographics

Telehealth Age Groups

In FY 2020, telehealth utilization for Veterans between age 25-44 was 9.6% of total encounters. [12] However, Veterans between age 55-74 demonstrated a lower telehealth

utilization of 4.45% encounters. [12] The overall percentage of telehealth usage may be projected to increase as the Veteran population ages because once a younger Veteran starts using telehealth, they may be more likely to continue to use telehealth for clinically appropriate services.

Women Telehealth Services

VA provides women's specific telehealth programs known as "TeleWomen's Health" which are defined as telehealth programs or clinics designed to treat women only. [13] TeleWomen's Health is offered via all telehealth modalities at various locations, including VAMCs, CBOCs, the Veteran's home, and non-VA sites of care. Care provided though TeleWomen's Health include the following services: [13]

- Women's Primary Care
- Gynecology
- Women's Mental Health
- Women's Specific Pain Management
- Women's Social Work
- Women's Pharmacy

Telehealth encounters for women Veterans in a mixed panel clinic increased 271.5% from 3,449 encounters in FY 2017 to 12,814 encounters in FY 2019. In an environment dedicated solely to women's primary care, the demand for telehealth services was even more pronounced. Telehealth encounters for women Veterans in a comprehensive women's primary care clinic grew over 1,080% from 177 encounters in FY 2018 to 2,089 encounters in FY 2019. [14]

2.2 Current VA Program Review and Analysis

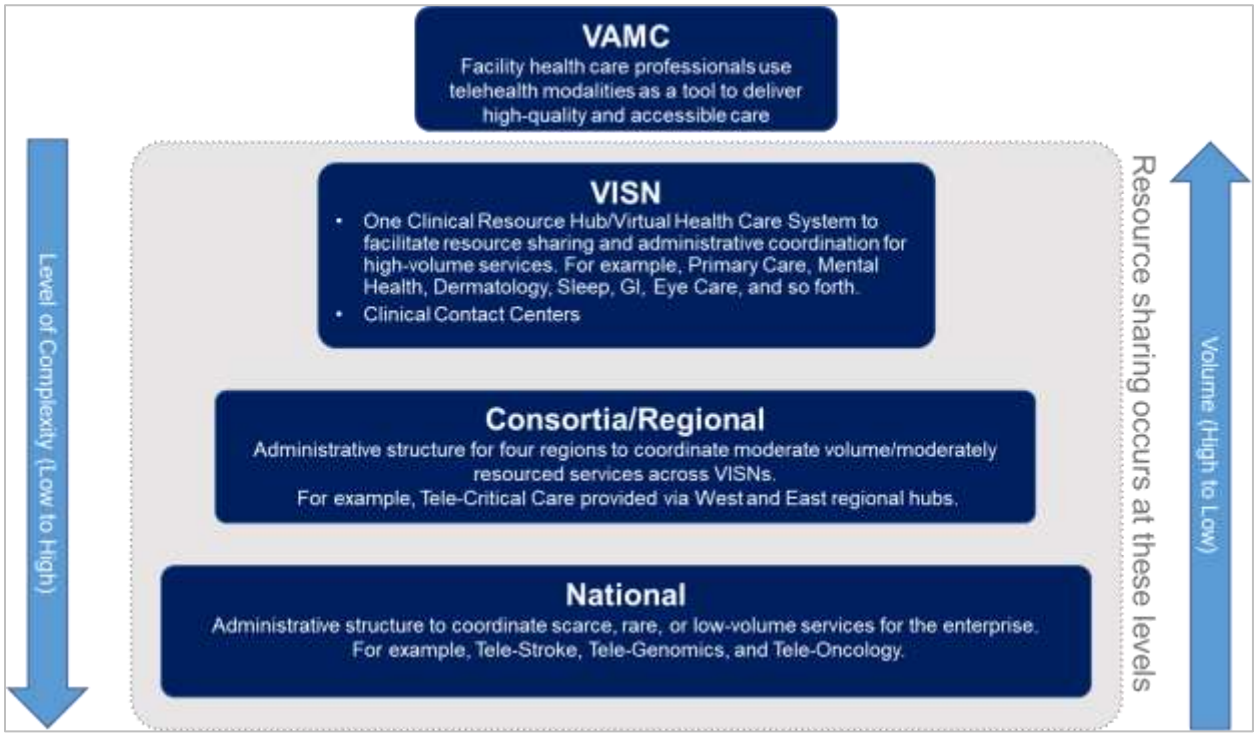
This section illustrates VA's conceptual virtual care enterprise framework and describes current virtual initiatives, such as VISN Clinical Resource Hubs (CRH) and VISN Clinical Contact Centers as examples of how the framework is operationalized. This section further provides analyses of key VA telehealth metrics and describes emerging themes in telehealth as context for the telehealth planning guidelines in Section 4.

Virtual Care Enterprise Framework

Telehealth is provided at all organizational levels within VA. The type and breadth of service at each level is dependent on volume, access, costs in the community, and health care professional supply. At the facility (VAMC) level, health care professionals integrate telehealth into their care delivery to enhance the accessibility, quality, and experience of their services across all disciplines. At the VISN level, services are organized to match supply with demand for high volume, lower cost services across the VISN to ensure consistent access. At consortia and/or national levels, services are organized to leverage speciality expertise and to ensure equitable availability to lower

volume, higher cost services to all Veterans. Figure 6 illustrates the organization of virtual levels of care for the enterprise.

Figure 6: *Virtual Care Enterprise Framework*



VAMC Telehealth Structure and Services

A core piece of VHA's connected care strategy is to ensure all ambulatory health care professionals are equipped to offer services via telehealth when clinically appropriate and preferred by Veterans. This strategy makes VA services more accessible to all Veterans. The strategy additionally aims to enhance health care quality by enabling Veterans to invite family members, caregivers, and other supporting individuals to all their appointments using virtual tools. Successful integration of telehealth at the facility level requires an investment in an extensive workforce to support direct patient care, service implementation, technology, management, provider to patient education, staff competency-based training and assessments, program oversight, scheduling systems and workflows, and quality management oversight. [15]

VISN Telehealth Structure and Services

At the VISN level, the national OCC strategy involves organizing an operational structure that facilitates the sharing of high-volume clinical resources across VISN facilities to match clinical supply and demand. [5] This strategy helps ensure there is consistent and equitable access to clinical services at all facilities in the VISN. Telehealth facilitates this goal by enabling urban, academically affiliated VA facilities to hire the health care professionals needed to serve Veterans at rural facilities, where hiring may be otherwise challenging. To operationalize this goal, VISNs need to develop

a clinical and administrative organizational process that identifies service gaps, defines the resources needed to resolve the gaps, and manages the distribution of telehealth professional resources. Managing interfacility telehealth services includes key functions such as scheduling, privileging by proxy of health care professionals, and quality oversight. VISNs are responsible for ensuring adherence to internal telehealth conditions of participation and external accreditation standards, integrating telehealth into routine quality management practices, and managing the achievement of telehealth goals across the VISN's facilities. [15]

To support this national strategy, OCC has directly invested and identified additional resources to establish CRHs in each of VA's 18 VISNs. [5] CRHs support the goal of sharing resources across the VISN. The same operational structure can be used to establish and distribute services at the consortia and national levels, further described below. Additionally, a piece of the national connected care strategy, led by the Office of Veterans Access to Care has included modernizing Clinical Contact Centers to provide Veterans access to a licensed independent providers (LIPs) to address Veteran clinical needs at any time. Both examples are described in greater detail further in Section 2.

National and Consortia Organizational Structure and Services

Telehealth is organized as national services when distributing high cost, low volume, rare, or highly specialized care. Organization of telehealth services at the national level is considered when one, or a small number, of host sites can effectively deliver a service capable of filling in gaps for the entire enterprise. Examples of existing national telehealth services include Tele-Stroke, Tele-Critical Care, the National Genomic program, National TeleMental Health Expert Consultation Center, and the Enterprise Oncology Center of Excellence. [5]

These national telehealth services currently rely on a host facility, often in collaboration with a national program office, to support their operations. For instance, the National Genomic program operations are hosted at Salt Lake City VAMC, while the national Tele-Stroke program is operated at the Palo Alto VAMC. Both programs are overseen and supported by the National Specialty Care Program Office. Both Salt Lake City and Palo Alto are large metropolitan centers well suited to offer highly specialized services because of academic affiliations and research relationships that enhance recruiting of specialty health care professionals. There are potential opportunities to consolidate some of the administrative functions and oversight of these national services under the umbrella of a VISN, a consortia-level CRH, or a virtual health care system (VHCS), further described below.

For services that are not available in each VISN but are not of sufficiently low volume to be operationalized from one or two facilities, telehealth services can be organized at the consortia level. Consortia represent a group of VISNs that share telehealth resources. Consortia do not have specific leadership or an accountable executive but are able to collaborate to share resources across VISNs and provide more interfacility care opportunities. For example, in the North Eastern Consortia, VISN 1 may build additional

capacity in one type of specialty, such as dermatology, to provide dermatology services to VISNs 2, 4, and 5. VISN 2 may build additional capacity in eye care to provide eye care services to VISNs 1, 4 and 5. Leadership from clinical programs such as Pain, Tinnitus, Headache, Palliative Care, and Neurology have expressed interest in sharing clinical resources using this model. [16] The consortia are made up of the following VISNs:

- Northeastern: VISNs 1, 2, 4, 5
- Southern: VISNs 6, 7, 8, 9, 16
- Midwest: VISNs 10, 12, 15, 23
- Western: VISNs 17, 19, 20, 21, 22

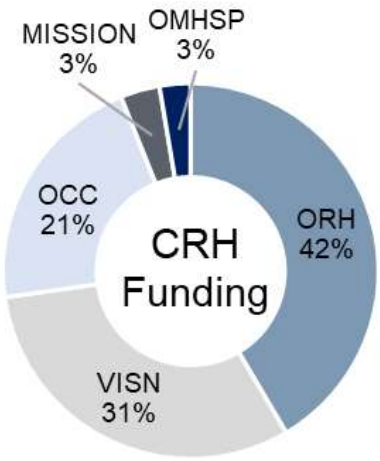
VISN Clinical Resource Sharing Examples

Clinical Resource Hubs (CRH) Overview

Title IV of the Maintaining Systems and Strengthening Integrated Outside Networks (MISSION) Act of 2018 directs VA to implement several initiatives to improve health care access in underserved areas. [17] One critical initiative includes the utilization of CRHs and their mobile deployment teams. CRHs are VISN-level resources that provide primary care, mental health, and specialty services to Veterans in underserved areas that are experiencing short- or long-term staffing or access gaps. These gaps may be due to VA facility staff attrition, extended leave, geographical provider recruitment challenges, or an expanding Veteran population. [17] Staff within a CRH include, but are not limited to, primary care providers (PCPs), clinical pharmacy specialists (CPSs), psychologists, psychiatrists, rehabilitation providers, licensed clinical social workers, registered nurses (RNs), and administrative staff. [17] CRHs are part of OCC's strategy to enhance clinical resource sharing.

CRH Funding and Governance

Funding for a CRH is provided by multiple sources as part of a multidisciplinary collaboration that is further described below. In addition to Veterans Equitable Resource Allocation (VERA) and VISN contributions, the Office of Rural Health has committed up to $100 million in annual funding for the launch and sustainment of CRHs. [17] OCC also provides funding for CRH leadership personnel. Tailored grants for specialty programs such as Tele-Pain and Suicide Prevention are also provided. The image below shows the breakdown for CRH funding for FY 2021 which totals $233,150,000. [16]



- Office of Rural Health (ORH): $98 million
- VISN Matching Contributions: $73.8 million
- Office of Connected Care (OCC): $50 million
- MISSION Act 402 Pilot: $8 million

- Office of Mental Health and Suicide Prevention (OMHSP): $6.3 million

Nationally, CRHs are advised by the VHA CRH Advisory Board which consists of the Office of Primary Care, Office of Mental Health and Suicide Prevention, Office of Connected Care, Office of Rural Health, National Specialty Care Program Office, Office of Veterans Access to Care, Office of Nursing Services, Pharmacy Benefits Management, Office of Information and Technology (OIT), and the Office of Health Care Transformation. [17] The VHA CRH Advisory Board provided recommendations to establish standard CRH operations and infrastructure, however these recommendations have not been universally adopted in VA. [5]

Each VISN CRH has established a VISN-level governance structure with clinical services reporting to the VISN Chief Medical Officer. Each VISN is responsible for determining the type and priority of clinical services, service size, resource investment, optimal funding streams, and organizational structure that meets its specific needs. [18]

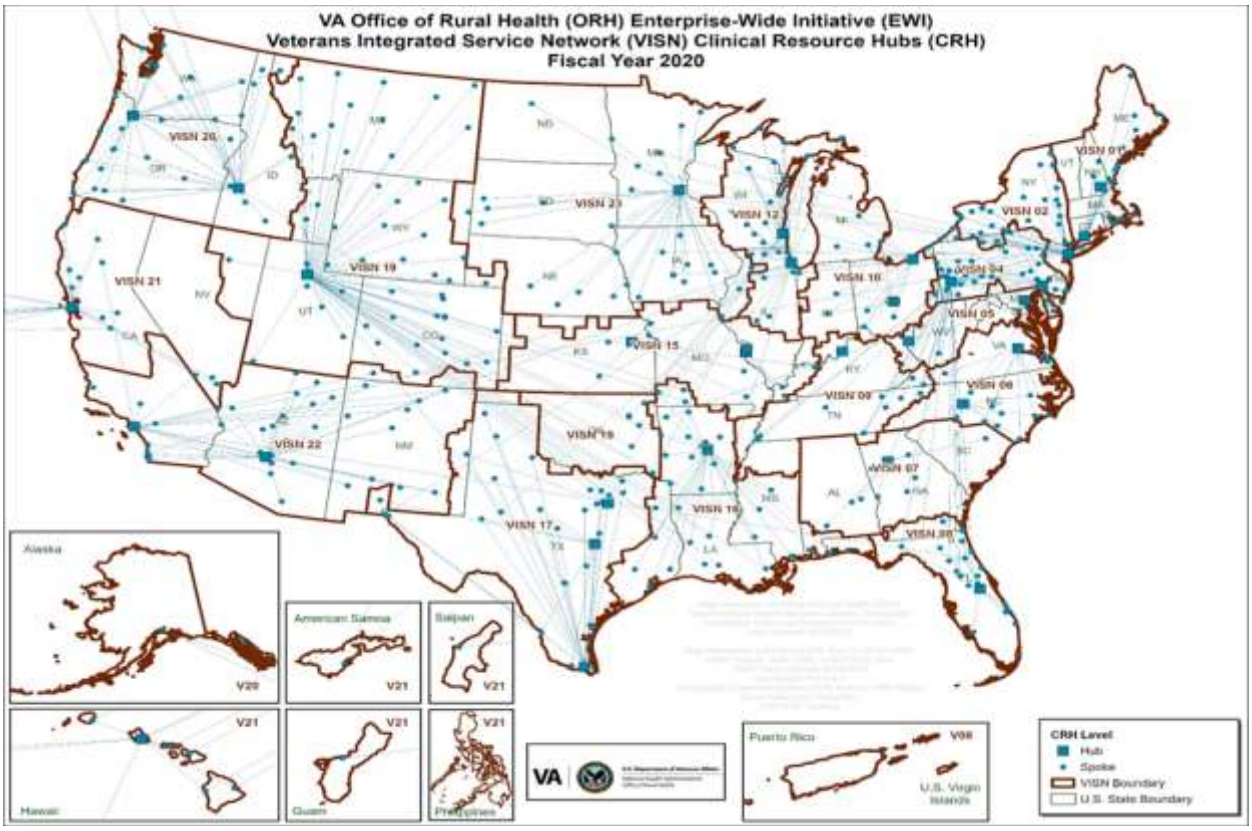
At the facility level, CRH staff are aligned to a host facility/site, which is the facility that provides administrative CRH functions such as credentialing, scheduling, and IT support. [17] Most synchronous telehealth interfacility primary care and mental health care is provided via one or two host facilities in the VISN. Specialty care may be provided via multiple host sites within the VISN based on unique host facility demographics and health care professional recruitment challenges.

CRH Service Delivery Model

The CRH team provides care to Veterans at the Veterans' local VA health care facilities, referred to as spoke sites, through telehealth technology or in-person visits. CRHs have also expanded care options for Veterans at home and at non-government locations, including Walmart, Veterans Service Organizations, libraries, and other community locations. This hub and spoke model is the foundation of how CRH's deliver services. [19]

As seen in Figure 7, each VISN includes one CRH that organizes the delivery of primary care, mental health, and other specialty care services to Veterans. In some VISNs, primary care and mental health are provided out of different VAMC locations (host sites) but organized under the VISN's CRH administrative structure. The large square markers on the map denote host sites where the majority of CRH staff are aligned. The spoke dots and lines illustrate the areas where CRHs are providing resource gap coverage.

Figure 7: *Clinical Resource Hub (CRH) Structure FY 2020*



Source: VA ORH. 2020.

CRH Services

Each CRH provides primary care and mental health services via one or two host sites. PCPs cover an entire panel of Veterans at an identified spoke site and will conduct quarterly in-person visits to their spoke site for one week to provide any required hands-on care. Mental health providers may provide Primary Care Mental Health Integration (PCMHI), general mental health services where there are staffing gaps, or specialized mental health treatment services to spoke sites that may not have access to intensive specialty care, such as post-traumatic stress disorder (PTSD), chronic pain, or substance use disorder intensive outpatient treatment. [20]

Select specialty services are offered via multiple host sites and the types of services vary by the needs of the facility and VISN. Additional specialty services can be added under the CRH administrative structure, enabling an expansile framework for addressing any VISN service need. [5] In FY 2021, CRHs are expanding clinical services in specialty care, surgery, rehabilitation and extended care, and suicide prevention. [16] The current specialties offered via CRHs include: [21]

- Cardiology: VISNs 1, 2, 4, 9, 12, 16
- GI: VISNs 1, 2, 4, 9
- Sleep: VISNs 1, 10, 21

- Dermatology: VISNs 1, 4, 7, 12, 15
- Rehabilitation and Extended Care: VISN 10, 12
- Surgery: VISN 1, 2

The goal is for all high-volume services that are appropriate for synchronous telehealth be provided through a virtual VISN resource sharing structure, such as a CRH. This same administrative structure can be used to deliver more highly specialized, complex, and rare services at the consortia and national levels. As VA expands virtual care, there is not necessarily a need to add additional hubs. Instead, VA can utilize the administrative structure within existing hubs to organize and coordinate select services, and to optimize resource sharing more broadly.

CRH Strategic Goals and Priorities

The FY 2021 strategic priorities for CRHs are to demonstrate value, improve access, and standardize governance and operations. [16] The CRHs aim to ensure that Veterans always have an option to receive care from a VA health care professional. CRHs also aim to ensure all Veterans have consistent access to VA services, that VA is the preferred option for Veterans when given the choice between VA and the community due to the experience of VA care, and help Veterans who have previously been referred to community care to return to VA care. To accomplish this, VISNs are instructed to prioritize CRH needs based on community care data such as failed consults, cost, volume, and Veteran wait times. [16] The CRHs also will begin to develop resource sharing across the consortia and develop a governance structure and workflows that are seamlessly integrated at VISN and national levels.

Clinical Contact Centers

Clinical Contact Centers are currently being implemented to provide 24/7 virtual urgent care and support to VA enrollees within each VISN. Services include general administrative and scheduling support, nurse triage, pharmacy advice, and virtual visits with LIPs via synchronous and asynchronous modes, such as telephone, video, or chat. The goal of the Clinical Contact Center is to direct Veterans to the proper level of care, and deliver that care when it can be appropriately provided through a synchronous telehealth visit. [22] Clinical Contact Centers aim to provide Veterans with a first line of contact, sound clinical advice, assessment and/or treatment, for Veterans in need of routine, urgent or emergent care. VISN 8 was the first to offer a fully comprehensive Clinical Contact Center at VA. [23] Since launch in July 2019, the VISN 8 center has handled 710,000 contacts from Veterans. In response to the COVID-19 pandemic, Clinical Contact Center nurses provided care to nearly 63,000 Veterans and approximately 3,200 appointments were completed by the center's team of LIPs in March and April 2020. [24]

VISN 10 Virtual Health Care System (VHCS) Pilot

In late 2021, VISN 10 will pilot a VHCS with its own unique clinic station number. [5] The VHCS will operate similarly to the previously described CRHs, but expand to include a

professional standards board, medical staff bylaws, fiscal controls and budgets comparable to a VAMC, and embedded quality and patient safety standards. The VHCS will have its own administrative unit for directional leadership, including a chief of staff, provider scheduling, administrative staffing, and infrastructure and hardware needs. The pilot will help determine which clinical services require permanent full-time vs. part-time health care professional staffing, panel ratios, and which types of roles are effective in a remote capacity. [5] The VHCS will establish the administrative structure to effectively coordinate and share resources across VISN 10 facilities with the potential support services at a consortia and national level.

Clinical Business Owners

Clinical program offices innovate on their clinical service delivery within the connected care enterprise framework to deliver high-quality care and address gaps in access. Each clinical program office should designate a telehealth liaison dedicated to re-imagining their services in the context of connected care capabilities and coordinate implementation with facility, VISN, connected care, and senior leadership in VA's Central Office. Examples of successful programs adopting connected care include Primary Care, Mental Health, Physical Medicine and Rehabilitation, and select Specialty Care services such as Pulmonary/Critical Care and Stroke/Neurology.

Office of Mental Health and Suicide Prevention (OMHSP) Services and Priorities

OMHSP has established a functional lead for telehealth that supports field operations and serves as a liaison to the Office of Connected Care. Over 97% of ambulatory care Mental Health providers have delivered their services through telehealth to a Veteran's home/non-VA location.

OMHSP is a significant stakeholder and facilitator of VISN CRHs. The goal for Mental Health CRHs is to cover 50% of mental health provider and therapist gaps in underserved or under-resourced areas. [18] To determine this, each VISN is instructed to look at the average number of Full Time Equivalent (FTE) vacancies over the past five years and review Behavioral Health Interdisciplinary Program requirements and mental health clinical staffing ratios across the VISN. [18] The OMHSP also received funding to implement a virtual Suicide Prevention Initiative across all 18 CRHs. The OMHSP stated they are encouraging 25-50% of future outpatient mental health encounters to be delivered via synchronous telehealth, taking patient preference into consideration. The OMHSP has seen a post-pandemic shift in local facilities opting to hire virtual health care professionals and to integrate virtual care into existing outpatient providers' routine care.

Office of Primary Care Services and Priorities

The Office of Primary Care has heavily invested in telehealth services. Almost 95% of primary care clinicians have provided telehealth services and the national office provides the operational leadership for the CRHs.

The goal for Primary Care CRHs is to cover 50% of facility PCP, CPS, and nursing gaps. [17] To determine this, each VISN is instructed to look at the average number of FTE vacancies over the past five years and review Patient Care Alignment Team (PACT) panel sizes. The current recommended PACT panel size varies between 900-1200 unique Veterans. [25] The Office of Primary Care is also expecting to deliver 25-50% of future outpatient primary care via synchronous telehealth. However, with a large projected increase in virtual primary care, VA will need to address future challenges in provider shortages and provider burnout. Primary Care will continue their advances in team-based care by shifting responsibilities to other team members, such as, mid-level providers, clinical pharmacists, and scribes to help alleviate the administrative burden for PCPs and help providers become more efficient.

National Specialty Care Program Office Services and Priorities

The National Specialty Care Program Office is critical in overseeing enterprise-wide virtual initiatives that include highly specialized, complex, and rare services. [26] These include the Tele-Stroke, Tele-Critical Care, and Tele-Genomic programs. The National Specialty Care Program Office is currently assessing and planning for a virtual enterprise-wide Oncology and Neurology program and is assessing program growth trends for pilots in Infectious Diseases, Tele-Hospitalist, and Tele-Urgent Care. [26] The National Specialty Care Program Office is also involved in a three-year grant to provide a Tele-Pain program via the CRH infrastructure.

Bridging the Digital Divide

As part of its vision to deliver trusted VA care, anytime and anywhere, VA is continuing efforts to bridge the digital divide for Veterans who lack the technology or broadband internet connectivity required to participate in VA telehealth services. Central to this effort, VA has implemented a national digital divide consult process in the electronic medical record. Through this process, qualifying Veterans can obtain an internet connected device from VA or assistance in applying for Federal Communications Commission administered internet subsidies. The Federal Communications Commission subsidies are available through the LifeLine and Emergency Broadband Benefit programs. The Lifeline and Emergency Broadband Benefit programs can be combined to provide many qualifying Veterans up to $59.25 per month for their internet services. Veterans on tribal lands can receive up to $109.25 through these programs. VA has completed over 49,500 digital divide consultations since the beginning of FY 2021 and has distributed more than 84,000 internet connected tablets since the start of the pandemic.

Additionally, VA has worked with major wireless carriers to support Veterans' access to VA telehealth services through zero rating the telehealth platform VA uses to deliver telehealth to the home. [5] Zero rating this platform allows Veterans, their families, and caregivers to use VA Video Connect with fewer worries about data fees.

VA is also evaluating the opportunity to leverage community-based telehealth access points through its Accessing Telehealth through Local Area Stations (ATLAS) pilot

program. [5] ATLAS is a pilot designed to bridge the digital divide and reach rural and underserved Veterans in areas with limited access to broadband and health care. Through this initiative, VA is teaming up with public and private partners including Philips, Walmart, Veterans of Foreign Wars and The American Legion to provide convenient locations within Veterans' communities equipped with the broadband and telehealth technology necessary to access VA health care. [27] Walmart has provided space within their health services rooms as well as equipment, while Philips designed unique and private spaces equipped with state-of-the-art telehealth equipment within Veterans Service Organizations. VA currently has 12 ATLAS locations nationally that are open and available for scheduling. [27] By the end of 2021, it is anticipated that a total of 15 ATLAS sites will offer telehealth from VA health care professionals.

Key Metrics

Demand

Highest Synchronous Telehealth Encounters and Uniques by Specialty

Figures 8 and 9 illustrate the specialties with the highest volume of synchronous telehealth encounters in FY 2019 and FY 2020. In both FY 2019 and FY 2020, mental health, and related fields such as PTSD and substance use disorder, and primary care had the highest volume of synchronous telehealth encounters. Mental health and primary care accounted for 69% of overall synchronous telehealth workload in FY 2020 and 59.5% of overall synchronous telehealth workload in FY 2019. Although overall virtual care may return to pre-pandemic levels, based on FY 2019 data, mental health and primary care may continue to lead utilization of synchronous telehealth services and account for over 50% of total synchronous telehealth workload.

Figure 8: *Highest Synchronous Telehealth Encounters and Unique Veterans by Specialty (FY 2019)*

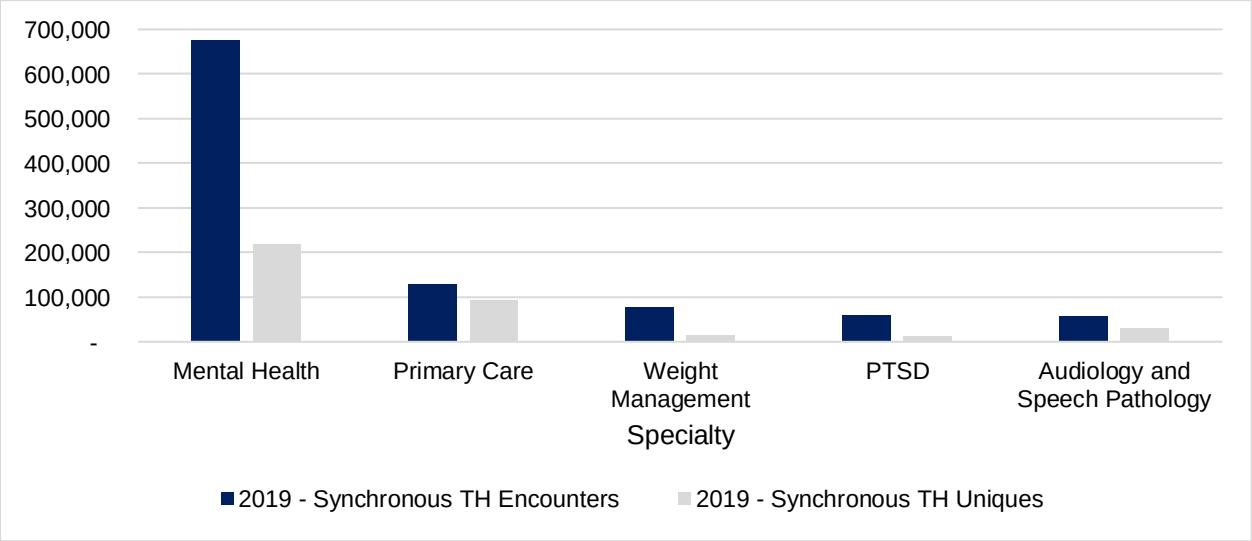
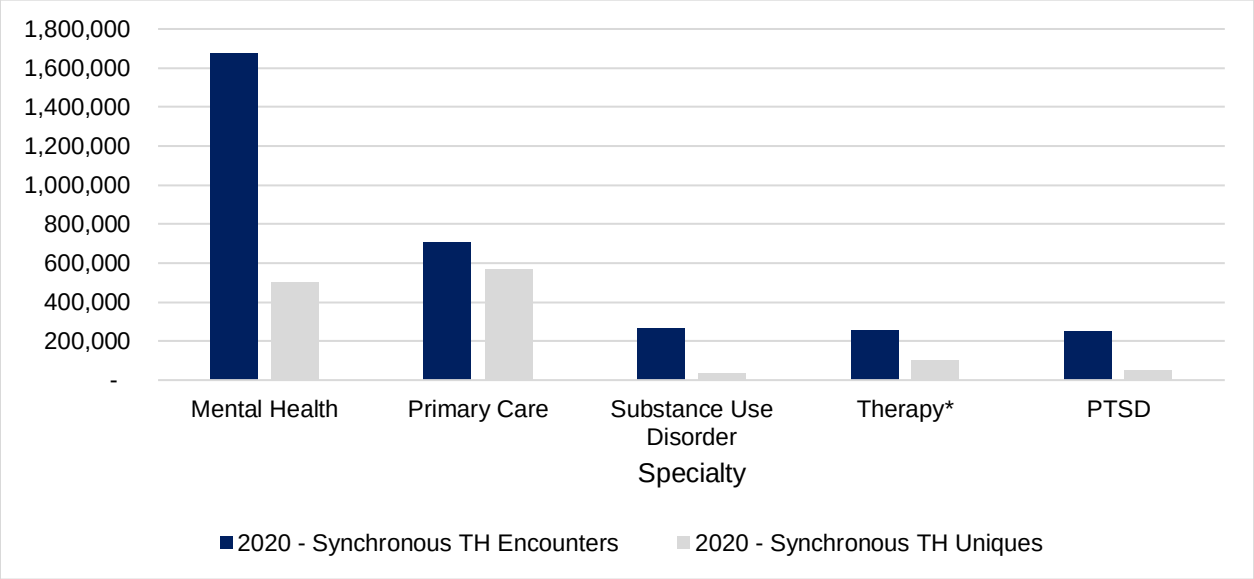


Figure 9: *Highest Synchronous Telehealth Encounters and Unique Veterans by Specialty (FY 2020)*



*Therapy contains rehabilitation, physical therapy, occupational therapy, kinesiotherapy, and recreation therapy service stop codes.

Table 1: *Top 10 Synchronous Telehealth Encounter Counts and Uniques by Specialty (FY 2019 and FY 2020)*

Specialty	FY 2019 Synchronous Telehealth Encounters	FY 2019 Synchronous Telehealth Uniques	FY 2020 Synchronous Telehealth Encounters	FY 2020 Synchronous Telehealth Uniques
Mental Health	676,439	219,093	1,675,994	499,919
Primary Care	128,909	93,926	709,005	566,704
PTSD	57,812	12,510	252,476	47,006
Substance Use Disorder	31,461	6,521	262,837	33,739
Therapy	25,756	17,801	256,792	102,615
Weight Management	77,804	13,923	107,448	20,227
Audiology and Speech Pathology	56,601	31,096	116,915	58,321
Pharmacy	48,806	19,352	74,447	33,622
General Medicine	46,776	27,551	70,596	52,998
Alternative	5,701	1,459	107,917	27,968
Total	1,156,065	443,232	3,634,427	1,443,119

Source: VSSC, Telehealth Dashboard as 06/26/2021.

Top 5 SFT Encounters and Uniques by Specialty

Overall, SFT workload in FY 2019 and FY 2020 was largely concentrated within three specialties: eye care, including ophthalmology and optometry, dermatology, and general medicine (contains stop codes related to sleep studies, general internal medicine, genomic care, medical specialty shared appointments, and other procedures based on VA defined groupings). Figures 10 and 11 display the specialties with the highest SFT encounters and uniques in FY 2019 and FY 2020.

Figure 10: *Highest SFT Encounters and Unique Veterans by Specialty (FY 2019)*

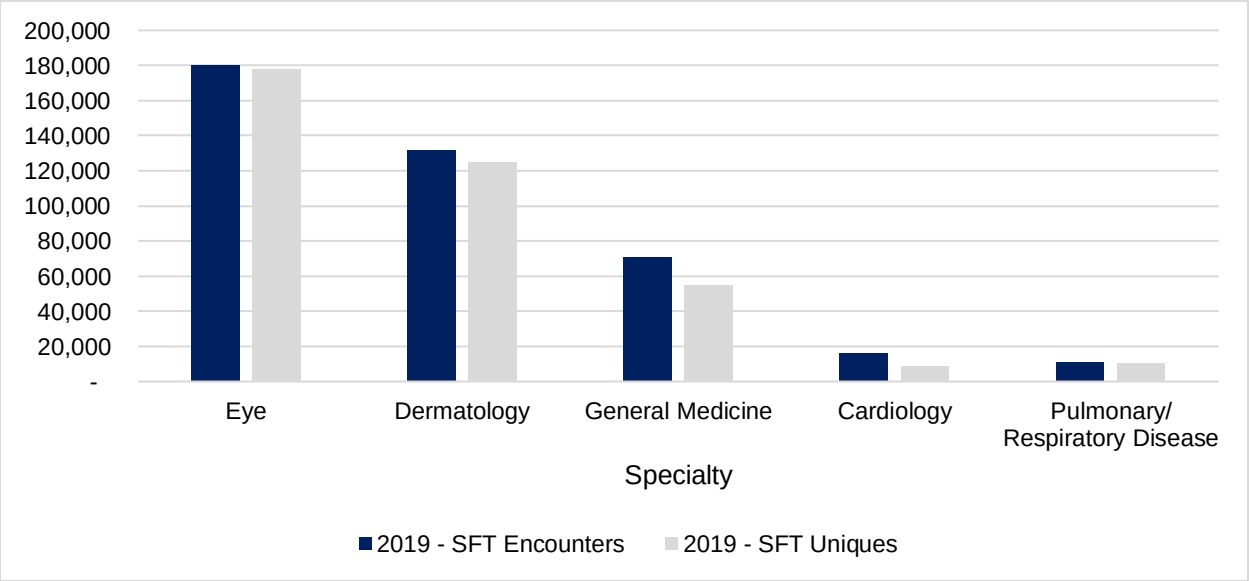


Figure 11: *Highest SFT Encounters and Unique Veterans by Specialty (FY 2020)*

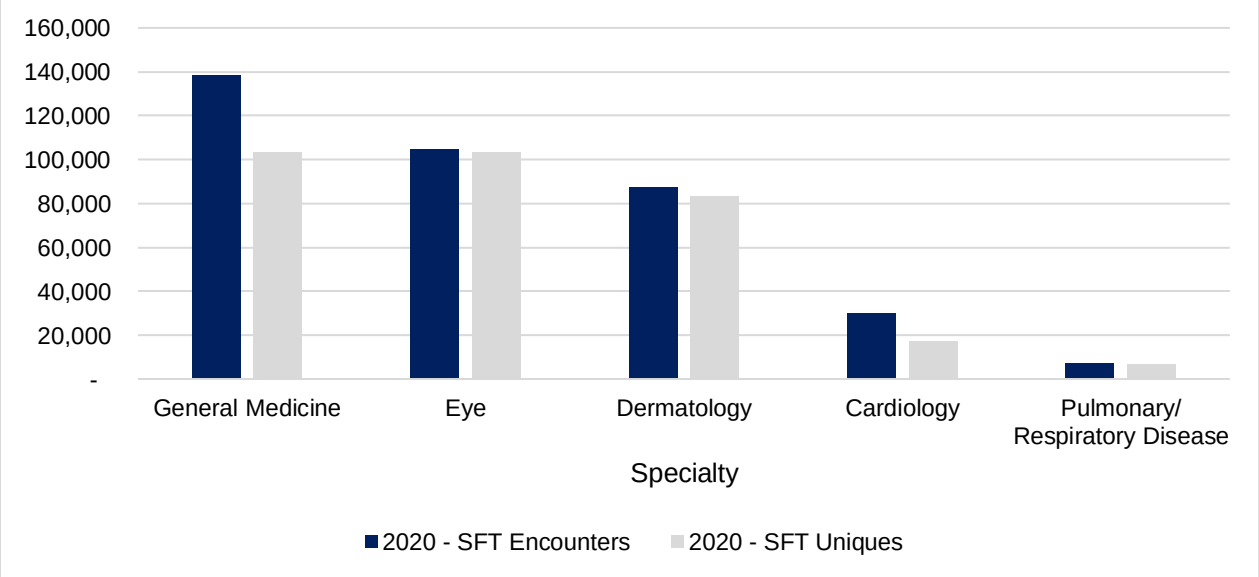


Table 2: *Top 10 SFT Encounters and Uniques by Specialty (FY 2019 and FY 2020)*

Specialty	FY 2019 SFT Encounters	FY 2019 SFT Uniques	FY 2020 SFT Encounters	FY 2020 SFT Uniques
Eye	180,194	177,795	104,325	102,917
Dermatology	131,912	124,955	87,303	83,107
General Medicine	70,569	54,740	138,003	103,087
Cardiology	15,872	8,766	29,930	16,759
Pulmonary/ Respiratory Disease	11,037	10,393	6,978	6,544
Spinal Cord Injury	715	199	2,052	358
Neurology	399	391	595	576
Ancillary Other	323	247	513	354
Surgery Other	252	239	118	116
Alternative	118	106	103	45
Total	411,391	377,831	369,920	313,863

Source: VSSC, Telehealth Dashboard as of 06/26/2021.

Supply

Staffing Ratios

The current recommendations for a virtual PACT panel are similar to an in-person panel, which is one virtual PACT for 900-1,200 unique Veterans, depending on the team. Appointment lengths for Veterans on a virtual PACT panel are also currently equivalent to in-person services at 30 minutes for an established patient, or 60 minutes for a new patient. [17] Virtual mental health staffing ratios follow current outpatient mental health staffing recommendations of 7.72 FTEs to 1,000 unique Veterans being treated in outpatient mental health. [20] Specialty care staffing follows current VHA Directives for each specialty.

As telehealth demand is projected to increase, it is assumed that the average number of unique Veterans will remain constant. However, as the population ages, each unique Veteran's number of annual visits and health care demand may increase. A future panel size may need to be adjusted to account for this projected increase in encounters.

Table 3: *CRH Staffing and Productivity Table (3/25/20)*

Staff Type	Bookable Hours Expectation	Productivity Measures
Primary Care Provider (MD/DO/Physician Assistant/Nurse Practitioner)	80% of time allocated as a Primary Care Provider (that is - if 1.0 FTE, 40 hours x 80% = 32 hours/week)	Panel Size
Registered Nurse (RN)	NA	NA
PCMHI	28-32 based on FTE	Work Relative Value Unit (wRVU)
General / Specialty MH	28-32 based on FTE	wRVU
PACT Clinical Pharmacy Specialist	1 Spoke site = 80% Direct Patient Care Time (32 hours)	Currently encounters
	2 Spoke sites = 70% Direct Patient Care Time (28 hours)	
	3 Spoke sites = 65% Direct Patient Care Time (26 hours)	
Mental Health Clinical Pharmacy Specialist	MH Clinical Pharmacy Specialist (CPS) = Behavioral Health Interdisciplinary Program Prescriber = 75% Direct Patient Care Time (30 hours)	Currently encounters
	MH CPS = PCMHI Prescriber = 80% Direct Patient Care Time (32 hours)	
	MP CPS = Mixed Model (Behavioral Health Interdisciplinary Program/PCMI Prescriber/MH CPS Prescriber) = 70 to 75% Direct Patient Care Time (28 to 32 hours depending on the number of Spoke sites)	

Source: Clinical Resource Hub Training and Operations Guide. 2019.

Health Care Professional Shortages and Vacancy Coverage

As of August 2021, there were 7,310 Health Care Professional Shortage Areas (HPSAs) for primary care in the U.S., about double the amount the Health Resources and Services Administration (HRSA) reported in the early 2000s. [28] More than 82 million people live in a primary care HPSA and 67% of HPSAs are rural. HRSA projects that 15,000 additional primary care clinicians nationwide are needed to meet the gap. [28]

In FY 2021 Q1, had roughly 500 PCP vacancies, over 1,700 mental health staffing vacancies, and more than 500 PACT RN vacancies. [25] A main goal of the CRH is to cover at least 50% of these vacancies through a CRH by 2024. [17] In FY 2020, 2,191 FTEs were dedicated to CRHs. In Q1 of FY 2021, CRHs expanded by an additional 754 FTEs. [29] As of June 2021, CRH clinical staff were assigned to care for over 780,000

Veterans. [30] The main staffing types that provided spoke coverage were psychiatrists, psychologists, CPSs, and MD/DO PCPs, as seen in Appendix D.

Access

Community Care Prioritization

VISN leadership is instructed to review community care data to help prioritize virtual VISN-level services to help recapture care that can be delivered well at VA. The community data to review are failed consults, defined as referrals that were sent to the community and were never scheduled, Paid Claims by Service, and Volume of Referrals. From FY 2020-21 YTD (as of 07/27/2021), VA has paid $30.7 billion in community care expenditures, which includes $91.7 million for community telehealth services. [5] The tables below show FY 2020 and FY 2021 YTD Community Care Network (CCN) data. While all these services may not be appropriate for telehealth, VA is investing in select appropriate community care services such as mental health, pain management, eye care, primary care, and physical therapy to be provided virtually. Addressing primary care, mental health and other acute care needs may help reduce the $4.5 billion paid claims for emergency care in the community (CITC).

Table 4: *Top Failed Consults in the Community (FY 2019-21)*

Top Failed Consults in the Community by Service FY 2019	Top Failed Consults in the Community by Service FY 2020	Top Failed Consults in the Community by Service FY 2021 YTD
Optometry	Optometry	Optometry
Physical Therapy	Emergency Care	Gastrointestinal
Primary Care	Physical Therapy	Dental

Source: CRH Community Care Dashboard

Table 5: *Top Community Care Network (CCN) Paid Claims by Category of Care*

Top 15 CCN Paid Claims by Category of Care FY 2020		Top 15 CCN Paid Claims by Category of Care FY 2021 YTD	
Emergency Care	$ 3,207,748,075	Emergency Care	$ 4,488,284,173
Medicine (Not Otherwise Specified)	$ 2,092,960,474	Homemaker/Home Health Aide	$ 847,956,946
Community Nursing Home	$ 1,183,138,982	Community Nursing Home	$ 819,139,296
Homemaker/Home Health Aide	$ 1,030,773,401	Skilled Home Health Care	$ 578,584,018
Hematology	$ 885,643,160	Hematology	$ 506,318,628
Dialysis	$ 760,719,016	Dialysis	$ 502,884,688
Orthopedic	$ 637,837,520	Orthopedic	$ 501,422,896
Cardiology	$ 532,593,685	Cardiology	$ 407,032,086
Skilled Home Health Care	$ 433,098,422	Mental Health	$ 339,451,361
Radiation Therapy	$ 397,222,802	Medicine (Not Otherwise Specified)	$ 310,567,502
Mental Health	$ 369,170,077	Ophthalmology	$ 290,378,783
Neurosurgery	$ 365,893,951	Radiation Therapy	$ 289,547,305
Ophthalmology	$ 344,319,949	Neurosurgery	$ 271,747,079
Dental	$ 299,228,927	Urology	$ 167,977,828
General Surgery	$ 245,272,417	Pain Management	$ 160,609,330

Source: CRH Community Care Dashboard

Table 6: *Top CCN Services by Referral Count (FY 2019-21)*

Top 10 CCN Services by Referral Count FY 2019 21 YTD	
Physical Therapy	235,794
Optometry	212,239
Gastrointestinal	207,031
Dental	192,778
Ophthalmology	157,264
Emergency Care	154,555
Orthopedic	154,146
Dialysis	136,186
Mental Health	133,484
Chiropractic	132,123

Source: CRH Community Care Dashboard

Telehealth Wait Times

The use of telehealth services, such as synchronous telehealth, can reduce wait times for a patient to receive care. As shown in Table 7, synchronous telehealth appointments, across most specialties, have lower wait times for established Veterans than traditional in-person appointments. [31] For a primary care appointment, Veterans had an average wait time of 13 days for a traditional in-person appointment, four days for a synchronous telehealth appointment from a health care professional to an offsite Veteran (likely the Veteran's home), and only three days for a synchronous telehealth appointment to a Veteran site at a VA location. The lower timeframes for referrals and wait days may help recapture Community Care workload back to VA.

Table 7: *Synchronous Telehealth and Traditional In-Person Appointment Wait Times Comparison in Days (FY 2021)*

Specialty	Veteran Site Telehealth Wait Time*	Offsite Veteran Telehealth Wait Time*	Total Telehealth Appointments	In Person Wait Time*
Gastroenterology	10	9	26,758	19
Pulmonary/ Respiratory Disease	9	13	19,243	19
Neurology	8	11	37,808	17
Rehab Physician	12	13	22,161	17
General Medicine	14	11	71,603	15
Dermatology	19	12	11,270	15
Primary Care	3	4	853,947	13
Podiatry	10	8	14,282	12
Urology	6	4	12,332	12
Cardiology	5	7	36,375	11
Orthopedics	6	11	11,543	11
Rheumatology	8	13	11,444	11
Gynecology	5	7	5,828	11
Geriatric Medicine	5	7	12,863	8
Endocrinology	11	11	37,266	8
Blind Rehab	4	2	19,385	8
Therapy	5	5	210,157	8
Surgery Other	5	7	10,648	8
Audiology and Speech Pathology	6	4	103,720	7
Medicine Other	6	4	11,750	6
Alternative	8	5	139,347	6
Mental Health	14	4	300,796	4
Nutrition	3	2	52,020	3
Nephrology	5	6	13,787	3

Specialty	Veteran Site Telehealth Wait Time*	Offsite Veteran Telehealth Wait Time*	Total Telehealth Appointments	In Person Wait Time*
Weight Management	2	2	144,988	2
Hematology/Oncology	4	3	16,957	2

*Wait time measured in days
Source: VSSC Appointments Cube Dashboard, Completed Appointments – Telehealth Comparison as of 6/23/2021.

Quality/Patient Satisfaction

Telehealth has improved VA patient outcomes and reduced use of inpatient care. In FY 2018, Veterans enrolled in Remote Patient Monitoring had a 53% decrease in VA bed days of care and a 33% decrease in VA hospital admissions. Mental health services provided via synchronous tele-mental health reduced acute psychiatric VA bed days of care by 40% and VA hospital admissions by 34%. [6]

The OCC Quality Management Program, known as the Conditions of Participation (COP), is based on a continuous quality improvement model that includes all Telehealth and Connected Health programs. Key components of the quality management process include the following:

- Evaluating and monitoring process and performance data
- Setting and utilizing benchmarks and analyzing data
- Critically reviewing program implementation planning strategies
- Standardizing foundational operations
- Identifying and encouraging the application of robust and leading practices nationwide
- Safe Veteran-centric care using telehealth and connected health programs

A clear focus on achieving, sustaining, and advancing clinical, business, and technology outcomes through quality management initiatives will also facilitate Veterans' access to care including those Veterans in rural and highly rural areas. Also, these initiatives promote optimal utilization of the VHA's resources and promote a positive experience for Veterans and health care professionals using connected care programs. [32]

V-Signals is another methodology utilized for measuring quality and satisfaction within telehealth. [33] V-Signals measures Veterans' experiences using telehealth across seven domains: ease/simplicity, efficiency/speed, quality, employee helpfulness, equity/transparency, satisfaction, and confidence/trust. These domains are captured within a survey sent to Veterans after they receive a telehealth appointment. Table 8 illustrates a monthly breakdown of the percentage of survey respondents that expressed a preference for a certain modality of care. January was excluded due to low survey responses, however, there has been a stable to slight growth among survey respondents who either prefer synchronous telehealth or have no preference between in-person or synchronous telehealth appointments. This may indicate a growing trust among Veterans in the use of synchronous telehealth.

Table 8: *V-Signals Percentage of Survey Respondents by Preferred Care Modality (Calendar Year 2021 YTD)*

Care Modality	February	March	April	May	June
Video Telehealth	37.5%	38.0%	37.9%	39.5%	40.7%
Phone	4.1%	4.6%	4.3%	4.2%	4.1%
In-Person	42.8%	42.6%	42.5%	39.8%	38.8%
No Preference	15.6%	14.9%	15.3%	16.5%	16.3%

Source: V-Signals Telehealth Report, Veterans Health Administration. 2021.

2.3 Commercial and other Federal Provider trends

Emerging Themes in Telehealth

The overarching goal of telehealth solutions is to enhance the accessibility, capacity, quality, and experience of care. Telehealth is key to reducing health care disparities across the world. With the COVID-19 pandemic, telehealth has increasingly been utilized for preventative medicine, patient and medical education, treatment, and patient monitoring services.

Six common themes emerged within telehealth literature. These telehealth themes include patient access, cybersecurity and privacy issues, new health care models, the use of PGHD, reimbursement, and telehealth's effect on the health care workforce.

Patient Access

In today's technologically advanced world, many Americans own a smart phone, desktop, or laptop computer, as well as a tablet computer or e-reader. [34] However, patient access to health care can be problematic for certain portions of the population such as those living in rural America. Roughly 20% of Americans live in rural areas and note difficulties accessing health care because of the inability to afford care, distance to access care, or mismatch of the patient's insurance to providers. [35] Telehealth can improve patient access by providing more appointment time slots for virtual care during traditional appointment time gaps, as well as provide more specialty care visit access. Telehealth can enhance the accessibility of care by delivering care right to the patient's location, bringing patients and caregivers together from distant locations, and increase the capacity of care by matching national supply and demand. Telehealth can also provide specialty visits to rural patients, military personnel, and incarcerated persons. Further, telehealth reduces travel and wait times for appointments, as compared to traditional visits. The elimination of travel and wait times increases patient access to all types of health care visits.

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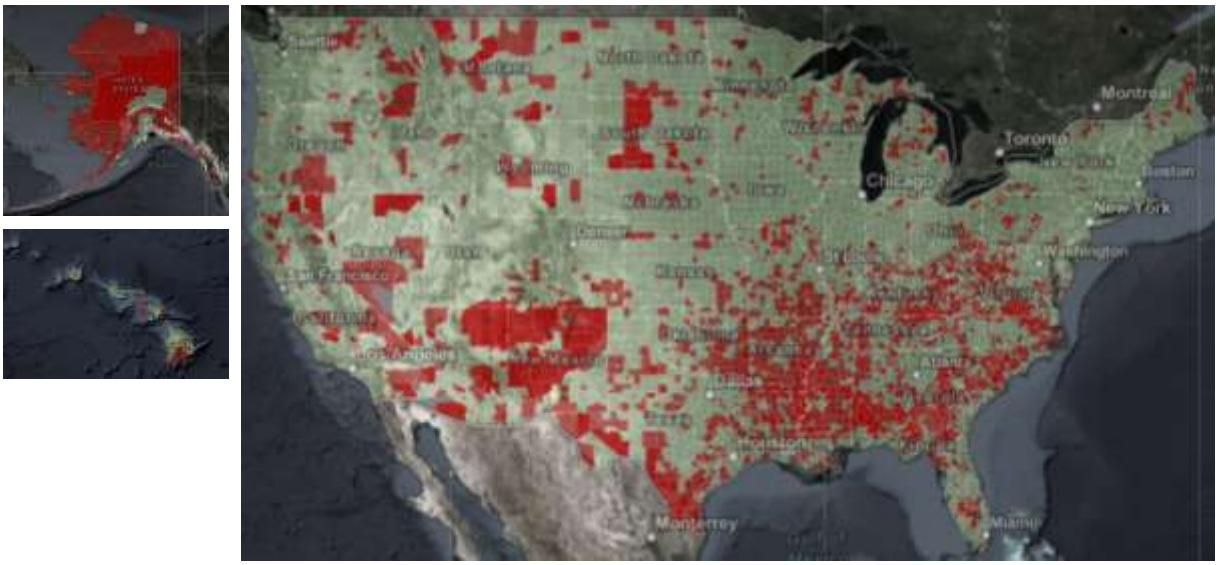
However, those patients who lack access to traditional health care may lack access to telehealth as well. Nearly one-third of Americans lack broadband, and this disparity becomes greater when accounting for lower socioeconomic groups and those living on tribal lands. Those who are older and living in rural areas, tend to have less education and more chronic conditions. Many patients may possess the necessary capabilities and the technological devices, but may lack internet access and sufficient computer literacy. [35]

Figure 12 illustrates areas with insufficient broadband in the U.S., based on the American Community Survey collected from approximately 3.5 million American households by the U.S. Census from 2015-2019. [36] The areas shaded in red have 25% or more of households that reported no internet access and/or 25% or more of households that reported having no computer, phone, or tablet.

Figure 12: *Indicators of Broadband Need – American Community Survey*



Level	Indicator of Broadband Need	Yes	No	No Data
Census Tract	American Community Survey - 25% or More of Households Report No Internet Access			
	American Community Survey - 25% or More of Households Report No Computer, Smartphone, or Tablet			

Source: Indicators of Broadband Need, Broadband USA. 07/20/2021.

Cybersecurity and Privacy Issues

One of the biggest concerns with telehealth is cybersecurity and the protection of personal health information. Patients and health care professionals use websites and applications to share personal health information for treatment purposes. However, a recent survey found that only 30.5% of the 600 most popular health care applications had privacy policies in place to address these applications specifically. [37] The use of one's personal health information online can subject them to cybercriminal activity. Additional concerns with telehealth applications include lags in security updates, internet connectivity insecurity, and the use of public networks. A secure infrastructure that allows remote communication without a reduction in security is vital for protected health information for all patients. [37] VA's OIT is building seamless and secure interoperability into VA systems while also transforming their procurement and acquisitions process. As VA implements new technologies and applications, OIT will assess security implications, test, and ensure that all processes are coordinated to minimize risk to VA networks. [38] VA is also working with Massachusetts General Hospital and Shepherd University to research new cybersecurity and compatibility measures for its medical devices and plans to upgrade cybersecurity standards and practices for network-connectable medical devices, medical data systems, and other related technology. [39]

New Health Care Models

Value-based care is a health care model that has reorganized the delivery and financing of clinical services by rewarding health care professionals for optimal patient outcomes and lower costs in multiple categories. [40] In relation to value-based care, telehealth has increased efficiency, and has shown lower transaction costs as compared to in-person care. [37]

Over the past few years, the National Committee for Quality Assurance has included 40 new adjustments to Healthcare Effectiveness Data and Information Set measures to allow telehealth to be part of the provider quality assessments. [41] Telehealth has been recognized as an increasingly valuable tool in the management of chronic disease conditions. Further, telehealth has been shown to increase patient satisfaction and improve patient outcomes through increased provider communications.

Patient Generated Health Data (PGHD)

PGHD continues to attract attention due to the "continuous innovation in the health care market." [40] Consumer wearables allow the upload of important and previously

unavailable health care information into the electronic health record (EHR) where health care professionals can review this data. “Data from wearable devices can be used to share information between patients and clinicians.” [37] One of the biggest advantages of PGHD is that the situational data are captured by the patients themselves and can optimize patient engagement with their care. Obtaining and displaying actional PGHD for VA health care professionals is a core part of VA’s connected care strategy that will enhance health care engagement between appointments and facilitate Veteran’s achieving their health care goals.

Reimbursement

The current COVID-19 pandemic has allowed for evolvement and progression of reimbursement for telehealth services nationwide. The Department of Health and Human Services has mandated that any provider that is eligible to bill Medicare can bill for telehealth services in any location. Regarding Medicaid, Federal waivers allow for broad coverage of telehealth services, but COVID-19 related services may vary by state. Private insurers also have expanded telehealth service coverage as well. A 2020 Journal of Rural Health article found that telehealth visits typically reimburse similarly to traditional office visits. However, asynchronous communications typically reimburse at half of full reimbursement rates. [40] Telehealth reimbursement rates will continue to evolve as demand increases. [40]

Health Care Workforce

The American Association of Medical Colleges reported that the U.S. will have a shortage of 122,000 physicians by 2032. [35] The hardest hit areas of the county concerning this physician shortage will be rural and underserved areas. Telehealth can be considered a credible and viable alternative to the traditional office visit and can help narrow the gap caused by projected health care professional shortages by matching supply with demand over large geographic regions.

The current literature surrounding telehealth has been influenced by the COVID-19 pandemic. This literature review has illuminated gaps in telehealth research that exist today as well. More research is needed to clearly define what clinical and non-clinical specialties in health care are most amenable to telehealth and for what specific reasons. These gaps may be defined by the specialty services not amenable to telehealth, or by the limitations observed by health care professionals. Further, research is also needed for telehealth guidelines relating to ethical and legal considerations as well. Lastly, decreased patient access for certain populations and how to close that gap for those in need of technology and devices needs to be resolved. Overall, telehealth has proved to be a promising option for increasing access, efficiency, and health care options for all patients.

2.4 Current Program Summary

The COVID-19 pandemic sparked exponential and unplanned telehealth growth and the need for rapid expansion across VA. The expansion was driven by pandemic-related

public health considerations, which resulted in increased adoption of virtual care modalities by health care professionals and Veterans. VA has developed telehealth programs in a wide variety of clinical specialties including primary care, mental health, nutritional services, rehabilitative services, and specialty care, among others. Telehealth within VA can be accessed through their hospitals (VAMC), clinics (CBOC), community sites (ATLAS) or at the Veterans' homes. [42] Telehealth is provided at all levels within VA, including virtual programs at individual facilities, VISNs, and at the consortia or national levels. The type and breadth of service at each level is dependent on volume, cost, and provider supply. These levels are meant to facilitate resource sharing across the enterprise and match provider supply with demand.

VA continues to innovate, using telehealth to transform VA health care and to ensure Veterans can access care when and where they need it. Primary care and outpatient mental health services are currently the highest utilizers of synchronous telehealth and strong models of success, but expansion opportunities remain in these services as well as all other specialties. Telehealth services that enhance health care for Veterans will continue to expand rapidly in VA, driven by technology advances and removal of remaining barriers. In support, VA must align policy and operations around a unified telehealth strategy.

3. Leading Practices

3.1 Leading Practices Analysis

Leading Telehealth Products in the Commercial Sector

Leading telehealth vendors have been ranked by various websites and sources based on the type of services offered, product model, e-commerce capabilities, Health Insurance Portability and Accountability Act (HIPAA) compliance, EHR integration capabilities, and reimbursement plan. Telehealth models can vary as to whether they offer a browser, applications, or an enterprise model. The products can be synchronous for bidirectional communication, or asynchronous for e-messaging or SFT of images. Products should be HIPAA compliant and can offer e-commerce solutions for payment of visits or services as well. The type of services provided can vary to include physicians, nurses, therapists, nutritionists, and more. Data integration with the EHR is key for the coordination of patient care. Reimbursement with telehealth vendors varies as to the type of insurance accepted.

A 2020 article in Healthgrades ranked the top six telehealth vendors (in no particular order) [43]:

- **Teladoc:** Launched in 2002 and is one of the oldest telehealth vendors available. Teladoc utilizes health care professionals in primary care, behavioral health, emergency medicine, dermatology, and others with prescription capabilities.
- **Amwell:** Offers primary care, urgent care, women's health, breastfeeding support, and physical therapy.
- **Doctor on Demand:** Launched Synapse in 2019 to partner with health plans and employers nationwide to provide telehealth services.
- **MDLive:** Launched in 2009 with an application and website and has partnered with Cigna and Walgreens. MDLive offers telehealth services in primary care, behavioral health, dermatology, and urgent care.
- **Talkspace**: Launched in 2012 with mental health therapy services provided as asynchronous text messages or synchronous video visits.
- **Better Help**: Launched in 2013 and was acquired by Teladoc in 2015 as a provider of therapy services.

Another notable telehealth vendor is Philips that provides enterprise telehealth services. Philips provides ambulatory, inpatient, and acute care solutions as a comprehensive telehealth service for a health care organization. [43] Philip's telehealth services include Tele-Intensive Care Unit (ICU), medical and surgical consults, emergency department consults, and subacute nursing facility consults.

Commercial Leading Telehealth Practices in the United States

HRSA in 2017 developed the Telehealth Centers of Excellence (COE) Program. The program is designed to assess an academic medical center's use of telehealth

resources to improve rural health in their community. [44] The COEs must have a high annual volume of patient visits, must have reimbursement practices that are financially self-sustaining, and offer medical services to underserved areas with high chronic disease prevalence and poverty rates. [44] The goals for the COEs are to initiate and track telehealth research, and to establish telehealth best practices and a framework for use in rural areas nationwide. The chronic disease states documented in the criteria for inclusion into eligibility for the Telehealth COE program include hypertension, heart disease, cancer, stroke, diabetes, and chronic kidney disease. [44] In October 2017, HRSA announced that two academic medical centers were the nation's first two Telehealth COEs: The University of Mississippi Medical Center (UMMC) and the Medical University of South Carolina (MUSC). [45]

University of Mississippi Center for Telehealth

In 2003, UMMC established a tele-emergency medicine program to provide services and support to three smaller rural hospitals and connect them with the University's Level One Trauma Center. [45] The UMMC Telehealth COE (The Center) now provides provider access in 35 medical specialties, with over 500,000 visits in 68 of the state's 82 counties. [45] The Center's four main goals have been to: assess the impact of telehealth on health care spending, creating and refining reimbursement methods, expanding provider and patient awareness, and growing the research portfolio. [45] The Center has been recognized for its innovative telehealth strategies in a state with some of the highest poverty and chronic disease prevalence in our country. [45]

Medical University of South Carolina

MUSC's telehealth program was established in 2005 and began with the Maternal and Fetal Medicine program treating women with high-risk pregnancies in underserved areas. [45] By 2018, the telehealth program had expanded to 77 different services at 200 sites in 27 counties and had garnered state-wide recognition. [45] The MUSC program focused on three different research areas: the impact of telehealth on Federal and local health care spending, provider and patient engagement, and open access network evaluation and best practices dissemination. [45] MUSC's mission was to serve their community and provide resources and support for other telehealth practices nationwide. MUSC has stated that its goal was to try to bridge the gap for patients who need access to critical resources. [45]

Leading Telehealth Practices Worldwide (Outside VA)

Charite—Universitatsmedizin Berlin

Located in Berlin, Germany, the University Hospital won the Teladoc Founder's Award for Telehealth Excellence in 2020 for innovating and establishing a tele-critical care program that supported a COVID-19 response plan for Berlin and Brandenburg. [46] In Germany, more than 2 million patients a year are treated in the Tele-ICU, and over 2,000 of these patients are in these regions alone. [46] Research has shown that ventilator dependency, cognitive decline and other long-term consequences negatively

affect patient outcomes. Enhanced Recovery after Intensive Care (ERIC), is a program that helps avoid negative long-term consequences of ICU care through the implementation of quality indicators. [47] ERIC Connect is their tele-critical care platform that allows health care professionals to connect to their critical care team's quality indicators for optimal ICU care through an e-learning package and simulator course. [47] The online learning modules prepare physicians, nurses, and other health care professionals for their daily quality indicator visit. Additional materials and education are available following the introductory course for health care professionals.

Doctolib – Paris, France

Doctolib began as a start-up company in 2013 based out of Paris, France. During COVID, Doctolib had exponential growth going from 1,000 video consultations a day to over 100,000 consults in one month. [48] Doctolib's Chief Executive Officer and founder, believes that telehealth is an adjunct to traditional medicine in certain specialties, but will not replace all traditional medical consultations. [49] Doctolib began as an online scheduling tool and expanded into telehealth while keeping physicians at the forefront. Physicians are the paying customers in Doctolib's model and patients access the platform for free. Doctolib sends patients text reminders for appointments and handles last minute cancellations for provider practices. Doctolib's platform is designed to reduce the provider's administrative burden and allow providers to have a better work life balance. In 2019, Doctolib launched software that allowed physicians to refer patients to each other with all the relevant documentation needed. The objective is to be able to have one centralized location for a patient's medical history, a long-standing goal for France. In 2020, Doctolib was ranked among the top three telehealth providers in the world. [49]

Telehealth Infrastructure and Implementation Needs

Effective telehealth infrastructure includes all the hardware and software needed to implement a reliable and effective telehealth program. Telehealth must include a robust digital network, including broadband internet, which allows telehealth applications to provide a great experience and operate seamlessly. The American Telehealth Association Practice Guidelines recommend a minimum bandwidth of 384 Kbps or higher for a dependable connection. However, VA has higher expectations for connectivity. [50] The telehealth infrastructure should be able to integrate data with the current EHR in place as well. [50] The ability to integrate with other systems, such as Picture Archiving and Communication System (PACS), to access Digital Imaging and Communications in Medicine (DICOM) images is also a priority. Further, the telehealth infrastructure should allow crucial integration for remote monitors, laboratory and pharmacy systems, and all other communication systems. Lastly, telehealth infrastructure should be scalable and allow for future growth with regulatory and demographic changes in mind. [50] One possible solution for interoperability between health care systems is the use of Fast Healthcare Interoperability Resources (FHIR). [51] FHIR standards define how health care information can be exchanged between different systems, regardless of how that information is stored. [51]

Going forward, telehealth will increasingly leverage patient-maintained devices in the home, for example smart phones, blood pressure monitors, and exercise trackers to collect and communicate clinical data. To ensure equity of health care, VA will need to invest in processes and distribution infrastructure to facilitate the provision of these devices to Veterans who lack the means to obtain them themselves. Medical and mobile devices used in telehealth should be HIPAA compliant with both their operating systems and any third-party applications used. [50] Telehealth hardware devices in clinic locations will also need to be regularly updated. This hardware can include medical carts, bedside terminals, medical tablets, and examination peripherals.

The American Medical Association (AMA) has created a Telehealth Playbook that includes a step-by-step guide to a successful telehealth program implementation. [50] VA also developed their own national Office of Connected Care Telehealth Manual prior to the publication of the AMA Telehealth Playbook. The manual equips providers and staff who use telehealth with the knowledge to fully implement, manage, and evaluate a VHA Connected Care/Telehealth program. [15]

AMA Telehealth Playbook Planning Steps

1. *Identify the need for telehealth*
2. *Form the team*
3. *Define Success*
4. *Evaluate vendors*
5. *Make the case to get buy-in*
6. *Contract with vendors*

AMA Telehealth Playbook Implementation Steps

7. *Design telehealth workflows*
8. *Prepare the provider team*
9. *Partner with the patient*
10. *Implement the telehealth program*
11. *Evaluate success*
12. *Scale the program for the future*

Improving efficiency with telehealth is predicated on an efficient and organized, resource-based scheduling system. Modern scheduling systems allow patients to book appointments online and receive text reminders about laboratory and diagnostic test updates and upcoming appointments. Additionally, modern scheduling systems coordinate multiple resources (provider, staff, rooms, equipment) that need to be present for an appointment across two or more locations.

With additional scheduling capabilities, the demand and staffing model of schedulers may evolve. For example, open and direct scheduling options can allow patients to schedule their own appointments online. Additionally, schedulers at one facility may be able to book appointments for Veterans with health care professionals at any VA facility. Since VA's new scheduling solution, part of the EHR implementation of Cerner capabilities will not be available in the short-term, VA is enhancing its Telehealth Management Platform (TMP) to support cross facility telehealth scheduling in the near term. [5] TMP is a resource-based scheduling systems that can schedule resources across two VA facilities using VistA, and is being enhanced to support scheduling across VistA and Cerner facilities. Continuing toward one integrated scheduling solution for VA will be critical for provider efficiency and the allocation of necessary telehealth resources.

Telehealth applications need to be integrated with the EHR and its scheduling systems to enable efficient clinical workflows, capture clinical documentation most effectively, and best coordinate Veteran care. VA needs to continue investing in application consolidation to further increase provider efficiency and provide clinical information in a timely manner. When the technology permits, telehealth workflows and documentation templates should be specifically designed for an appointment type and the needs of clinical services.

Future Projections for Telehealth

Telehealth will continue to see an increase in utilization as it becomes a standard service offered within health care. [52] "Patients will choose providers, health systems, and hospitals based on telemedicine access." [52] Patients are becoming more familiar with virtual care and all its benefits and perks, and desire health care professionals that can offer these telehealth services. Thus, those telehealth providers will reap the financial rewards of offering telehealth services to their patients. Telehealth can also be embraced as a viable alternative to preventative care including chronic disease management that can help reduce inpatient stays, readmissions, and complications. Further, telehealth can increase patient access to specialty care, reducing appointment wait times.

The interest in telehealth has surged due to a variety of different factors. The pandemic has increased telehealth usage through the need for protective mechanisms to keep patients and health care professionals safe. There is also tremendous interest and enthusiasm with technological and digital innovation. Additionally, with consumerism, patients may have greater interest in choosing their health care options. In summary, telehealth, even with existing challenges, increases patient access to health care, contains health care costs, manages chronic diseases, and reduces health care complications.

4. Service Planning Framework

4.1 Program Priorities

The Office of Connected Care has developed three goals within their strategic plan for FY 2021-25 which are meant to drive eight organizational strategies. These goals are: enhance Veteran digital engagement, deliver health care without walls, and solidify connected care foundations. [4] When considering enhancing Veteran digital engagement, VA will build an engaging digital front door and offer services and applications that support Veterans in managing their own health. [4] To deliver health care without walls, VA will deliver health care in the Veterans' homes, expand clinical capacity including increasing clinical resource sharing across locations, and empower health care professionals to deliver virtual care. [4] To solidify connected care foundations, VA plans to modernize relevant infrastructure, analyze data for new insights, and create new and innovative connected care programs. [4]

Telehealth Projection Methodology

Future service planning within telehealth requires a methodology for projecting potential demand. Based on a review of the Enrollee Health Care Projection Model (EHCPM), historical work Relative Value Units (wRVUs) per encounter by service line, historical synchronous telehealth encounters, and in-person encounters from VHA Support Service Center (VSSC), the methodology outlined below can be utilized for telehealth planning for many service lines.

1. Pull the total number of encounters (telehealth and non-telehealth) for the base year the planner would like to project from.
    - Within this first step the planner obtains the total number of encounters for the service line the planner would like to project telehealth need for.
2. Identify the EHCPM health systems planning category (HSPC) that aligns with the service the planner would like to project and its 10-year percent change from the facility-level projections.
3. Calculate projected encounters for a service by multiplying the 10-year wRVU percent change rate by the base year total encounters.
4. Multiply the projected encounters for a service by the percentage potential scenario or historical percentage of the service that has been delivered by synchronous telehealth.
    - From this step the planner derives the number of encounters for a service that would be projected to be delivered via synchronous telehealth. Assuming that total workload will return to pre-pandemic levels, the planner can take the FY 2020 synchronous telehealth encounters and divide by the average total encounters across FY 2017 to FY 2019 to obtain a percentage of total encounters that could be delivered via synchronous telehealth.

A planner can use the above methodology for any service line that captures encounters through VSSC to project potential synchronous telehealth demand volume. However, the methodology above does not apply to primary care since the Office of Primary Care uses an enrollment-based staffing and demand model. A planner should consult with the Office of Primary Care to determine projected unique Veterans and projected unique Veteran utilization rates to assist in primary care telehealth planning.

FY 2029 Projected Synchronous Telehealth Demand Scenarios by Speciality

The following clinical services have the potential to account for approximately 75% of all synchronous telehealth encounters, or 11.6 million synchronous telehealth encounters by FY 2029.

- **Primary Care:** up to 25% total encounters delivered via synchronous telehealth
- **Mental Health:** up to 40% total encounters delivered via synchronous telehealth
    - **Substance Use Disorder:** 20% total encounters delivered via synchronous telehealth
    - **PTSD:** 20% total encounters delivered via synchronous telehealth

The total synchronous telehealth encounters are projected to be 15.5 million encounters by FY 2029 based on EHCPM projections and utilizing FY 2020 synchronous telehealth encounters relative to FY 2019 total VA encounters.

Future Program Planning Steps

1. Determine changes in use of synchronous telehealth or SFT from FY 2017-20 by clinical service by facility, or VISN, as applicable.
2. Project future (FY 2029) synchronous telehealth and SFT encounter workload by clinical service by facility, or VISN, as applicable.
3. Identify which VAMCs will generate projected synchronous telehealth and SFT workload by clinical service.
4. Estimate which VAMCs will generate interfacility (versus intrafacility) synchronous telehealth and SFT workload by clinical service.
5. Delineate funding sources and workload credit for facility or VISN health care professional staffing.
6. Produce a strategic roadmap for the following critical resource and infrastructure needs that may affect planning and implementation:
    - Determine governance and leadership structure for clinical resource sharing at the VISN level.
    - Determine requirements for scheduling system upgrades to increase scheduling flexibility and efficiency.
    - Determine administrative staffing and scheduler staffing needs.
    - Determine full-time and part-time health care professional staffing needs.
    - Determine clinical support staff requirements and identify potential capacity within existing system.
    - Determine synchronous telehealth or SFT training requirements.

- Determine designated synchronous telehealth or SFT space and physical infrastructure requirements.
- Determine telehealth technical infrastructure, hardware, and EHR integration requirements.
- Determine technology distribution infrastructure to provision Veterans' connected devices.

7. Review and finalize opportunities with VA Leadership.

4.2 Geographic Service Area

Depending on the service being delivered, telehealth services may be delivered at a national, consortia, VISN, or facility level. Ideally, planning guidelines and expert input from clinical program offices and VISNs, will suggest which telehealth services to administer at each level of the organization based on projected supply and demand characteristics of the service.

Based on OCC priorities, planning guidelines should help the organization identify areas for telehealth clinical resource sharing. For example, if a facility within a VISN has sufficient supply of cardiologists, or the ability to recruit cardiologists, while another facility within the same VISN, or a nearby VISN, lacks cardiologist supply, the planning guidelines would help distribute cardiology services across the VISN or VISNs. This type of planning strategy would enhance access and create a more integrated care system for Veterans.

When services are sufficiently limited in a VISN, the consortia-level organization, referenced in Section 2, would be the structure to facilitate resource sharing across VISNs. Some services such as Tele-Stroke, Critical Care, and Genomic are categorized as regional or national programs, and are administered across the country from select sites. As technology, scheduling, and policy modernization occurs across VA, there will be enhanced opportunity to efficiently organize and manage additional telehealth services across large regions, including nationally.

4.3 Planning Guidelines and Thresholds

Planning guidelines and thresholds seek to inform the market assessment process. The rationale for establishing VA planning guidelines and thresholds is rooted in the belief that where a VA service falls below the identified measure, quality, patient safety, or operational efficiency may be compromised. Therefore, a service must be carefully examined to ensure that Veteran needs are appropriately met. Planning guidelines and thresholds focus on a broad range of access, demand, staffing, quality, and facilities/ environment of care considerations and are meant to help identify areas where the teams should carefully consider leveraging telehealth as a supplemental care delivery solution. However, the guidelines and thresholds developed are not meant as standalone decision criteria to be used to make specific recommendations.

When conducting the market assessments, the opportunities developed were standardized across major strategic suggestions, typically regarding a capital investment of sites (or "move types") - for example, opening a new site, or maintaining and modernizing an existing site. Telehealth is unique in that investment is not necessarily tied to specific sites. Therefore, the following strategic move types were developed unique to the telehealth service for future health care planning:

- **Maintain Current Capabilities:** Maintain existing services and resource levels. No expansion or change to operations is suggested.
    - If the 10-year projection for synchronous telehealth encounters is within 10% of historical synchronous telehealth encounters, then VA should maintain current capabilities. For example, if planning for encounter volumes in FY 2030 a planner would take FY 2020 historical volumes and compare them to the FY 2030 projections to determine if the volumes are projected to change more than 10%. If the projections are less than 10% above or below historical encounters a planner would not recommend changes in resourcing for the service.
- **Resize Capabilities:** Projected synchronous telehealth encounter demand is above or below historical demand requiring additional or reduction in service resources.
    - If the 10-year projection for synchronous telehealth encounter demand is greater than 10% above or below historical demand, then VA should resize capabilities. For example, if planning for encounter volumes in FY 2030 a planner would take FY 2020 historical volumes and compare them to the FY 2030 projections to determine if the volumes are projected to change more than 10%. If the projections are greater than 10% above or below historical encounters a planner would recommend changes in resourcing for the service.

Innovation and Enhancement Prerequisites: For telehealth to succeed, technical infrastructure and operations must be continually enhanced. There needs to be an organizational priority to modernize VA systems around the efficient operations of telehealth and other virtual programs that support Veterans in the home and interfacility resource sharing, not a desire to force them into traditional and outdated systems. Examples of these prerequisites include:

- Addressing technology, scheduling, or IT infrastructure that may be outdated and requires updates.
- Addressing EHR systems and other third-party applications that are not interoperable.
- Establishing or modernizing distribution systems for Veterans to receive remote patient monitoring, prevention, and health promotion equipment.

Planning Guidelines Table

Market Area Health Systems Optimization (MAHSO) Planning Guidelines and Thresholds	
Service	Mental Health, Primary Care, Select Specialty Care
Geography	VAMC, VISN, Consortia/Regional, National
Prerequisites	Broadband access, technical infrastructure (EHR, Interfaces, platforms, devices), supporting administrative infrastructure (scheduling, credentialing, staffing)

Mental Health (MH)	Current State	Future State	Decision Points for Evaluation	Evaluation Recommendations
Demand	• FY 2019 national demand = 9,053,533 encounters nationally. • MH is ranked top ten in categories for failed consults, cost, and volume lost to Community Care.	• FY 2029 = 15,453,687 encounters nationally. • Includes projected 70.1% increase in MH wRVUs.	• FY 2020 synchronous telehealth encounters/avg total encounters (FY 2017-19) = % of total encounters potentially delivered by synchronous telehealth. For MH this was 19.0%. **Scenario: 30%** national MH synchronous telehealth encounters = **4,636,106** 15,453,687*0.30 **Scenario: 35%** national MH synchronous telehealth encounters = **5,407,623** 15,453,687*0.35 **Scenario: 40%** national MH synchronous telehealth encounters = **6,180,141** 15,453,687 *0.40 • The 10-year projected encounters for synchronous telehealth guideline was developed utilizing historical encounters from VSSC and the EHCPM model. The methodology for projecting this demand was reviewed with CSO and OCC.	**Maintain Current Capabilities** • The projected synchronous telehealth encounters are within 10% of historical synchronous telehealth encounters. **Resize Capabilities** • Projected synchronous telehealth encounter demand is greater than 10% above or below historical demand. **Innovate and Enhance Capabilities** • Address technology or IT infrastructure that may be outdated. • Address EHR systems and other third-party applications that may not be interoperable. • Address the scheduling system used by front line schedulers that may be outdated and inflexible. • Address the cost accounting system and processes that may be outdated and inflexible, inhibiting centralized purchasing and

Mental Health (MH)	Current State	Future State	Decision Points for Evaluation	Evaluation Recommendations
			• Projections for Community Care demand triggering potential service recapture came from interviews with CRH leadership regarding planning processes using Community Care data.	appropriate assignment of workload credit for interfacility care. • Establish and/or modernize distribution systems for remote monitoring, prevention, and health promotion equipment.
Supply	• 7.72 provider FTEs/1,000 unique Veterans.	• Range of 1,188-1,452 (avg. 1,320) MH synchronous telehealth encounters/psychologist (MH non-prescriber). • 3,168- 3,872 (avg. 3,520) MH synchronous telehealth encounters/ psychiatrist (MH prescriber).	• Rationale is that MH non-prescriber will see approximately 6 Veterans/day +/- 1 Veteran/day. This accounts for different appointment types and appointment lengths in a daily schedule. • Rationale is that MH prescriber will see approximately 16 Veterans/day +/- 1 Veteran/day. This accounts for different appointment types and appointment lengths in a daily schedule. • Assumes health care professionals work 220 days/year.	
Access	• Current VA wait times are 20 days for MH appointments.	• Stretch goal of VA wait times for in-person services that exceed 3 days (no more than 20 days per MISSION Act requirements). • Community Care wait times for in-person services that exceed 3 days (no more	• MH wait time is a stretch goal to assist in suicide prevention. • Based on interviews with OCC and CRHs, telehealth appointments are held to the same wait time standards as in-person appointments. • Wait time standards from MISSION Act.	

Mental Health (MH)	Current State	Future State	Decision Points for Evaluation	Evaluation Recommendations
		than 20 days per MISSION Act requirements).		
Quality	• Telehealth is being measured to track improvements in patient outcomes and satisfaction using existing quality framework.	• Continue to track telehealth's effect on patient outcomes using existing quality framework.	• OCC COP Framework. • Relevant V-Signals data. • Other relevant quality metrics for MH.	
Other			• Lack of broadband access or internet connectivity that limits VA provided telehealth. • See prerequisites.	

Primary Care (PC)	Current State	Future State	Decision Points for Evaluation	Evaluation Recommendations
Demand	• PC is an enrollment-based demand model. • Historically, not all enrollees use VA care. • FY 2019 national demand = current PC unique Veterans multiplied by current PC unique Veteran utilization rates. • PC is ranked top ten in categories	• PC is an enrollment-based demand model. • FY 2029 projections indicate the number of Veteran enrollees will remain stable, however, the number of enrollees using PC (uniques) is likely to rise. • FY 2029 national demand =	• PC clinical business owners will determine the best levels of staffing, enrollment, access, and synchronous telehealth workload to effectively meet Veteran enrollee needs. • Projections for Community Care demand triggering potential service recapture came from interviews with CRH leadership regarding planning processes using Community Care data.	**Maintain Current Capabilities** • Projected synchronous telehealth demand is within 10% of historical synchronous telehealth demand. **Resize Capabilities** • Projected synchronous telehealth demand is greater than 10% above or below historical demand. **Innovate and Enhance Capabilities** • Address technology or IT infrastructure that may be outdated. • Address EHR systems and other third-party applications that may not be interoperable.

Primary Care (PC)	Current State	Future State	Decision Points for Evaluation	Evaluation Recommendations
	for failed consults, cost, and volume lost to Community Care.	projected PC uniques multiplied by PC unique Veteran utilization rates. • Data suggests that up to 25% of PC may be effectively rendered via synchronous telehealth by FY 2029.		• Address the scheduling system used by front line schedulers that may be outdated and inflexible. • Address the cost accounting system and processes that may be outdated and inflexible, inhibiting centralized purchasing and appropriate assignment of workload credit for interfacility care. • Establish and/or modernize distribution systems for remote monitoring, prevention, and health promotion equipment.
Supply	• 1 PACT team/900-1,200 unique Veterans.	• Office of PC will assess how to effectively meet the projected increase in demand via panel ratios, PACT staffing, and clinical resource sharing.	• PC thresholds were developed based on interviews with PC clinical business owners and the CRH Operations Manual used for CRH implementation. [17] • Ensure PACT staffing is optimized and team-based care is utilized.	
Access	• Current VA wait times are 28 days for PC appointments.	• Future goal of VA wait times for in-person services to 10 days or less depending on medical circumstance. **AND** • Community Care wait times for in-person services to 10 days or less depending on	• Wait time standards from MISSION Act and VHA based on clinically indicated date or patient indicated date. • Future stretch wait time goal is based on commercial benchmark for third next available appointment. • Based on interviews with OCC and CRHs, telehealth appointments are held to the same wait time standards as in-person appointments.	

Primary Care (PC)	Current State	Future State	Decision Points for Evaluation	Evaluation Recommendations
		medical circumstance.		
Quality	• Telehealth is being measured to track improvements in patient outcomes and satisfaction using existing quality framework.	• Continue to track telehealth's effect on patient outcomes using existing quality framework.	• OCC COP framework. • Relevant V-Signals data. • Other relevant quality metrics for PC.	
Other			• Lack of broadband access or internet connectivity that limits VA provided telehealth. • See prerequisites.	

Specialty Care (SC)	Current State	Future State	Decision Points for Evaluation	Evaluation Recommendations
Demand	• Specialty care volume is based on a service line by service line basis. Currently specialty care delivered through synchronous telehealth is dependent on clinical business owner priorities.	• FY 2029 % synchronous telehealth SC workload will be the percentage that comes for FY 2020 synchronous telehealth encounters being divided by the average of FY 2017-19 total encounters per service line. • Focus on low complexity specialty	• 10-year projected encounters for synchronous telehealth support at between 2,376-2,904 SC synchronous telehealth. • The 10-year projected encounters for synchronous telehealth guideline was developed utilizing historical encounters from VSSC and the EHCPM model. The methodology for projecting this demand was reviewed with CSO and OCC. • Projections for community care demand triggering potential service recapture came from interviews with CRH leadership regarding planning processes using Community Care data.	**Maintain Current Capabilities** • The projected synchronous telehealth encounters are within 10% of historical synchronous telehealth encounters. **Resize Capabilities** • Projected synchronous telehealth encounter demand is greater than 10% above or below historical demand. **Innovate and Enhance Capabilities** • Address technology or IT infrastructure that may be outdated. • Address EHR systems and other third-party applications that may not be interoperable.

Specialty Care (SC)	Current State	Future State	Decision Points for Evaluation	Evaluation Recommendations
		services. Examples of low complexity services may include rehabilitation and extended care, audiology/speech pathology, weight management, home-based health care, alternative, nutrition. • The service is one of the top ten categories (failed consults, cost, volume) lost to Community Care and could be delivered via telehealth.		• Address the scheduling system used by front line schedulers that may be outdated and inflexible. • Address the cost accounting system and processes that may be outdated and inflexible, inhibiting centralized purchasing and appropriate assignment of workload credit for interfacility care. • Establish and/or modernize distribution systems for remote monitoring, prevention, and health promotion equipment.
Supply	• Staffing ratios recommended by VHA Directives/Handbooks for each clinical specialty.	• 2,376-2,904 (avg. 2,640) SC synchronous telehealth encounters/SC health care professional (depending on specialty). • Encourage resource sharing for lower volume/higher complexity SC	• Rationale is that SC health care professional will see approximately 12 Veterans/day +/- 1 Veteran/day. This accounts for different types staffing, appointment types, and appointment lengths in a daily schedule. • Assumes SC health care professionals work 220 days/year. 12 Veterans * 220 days = 2,640 SC synchronous telehealth encounters.	

Specialty Care (SC)	Current State	Future State	Decision Points for Evaluation	Evaluation Recommendations
		across Consortia or National Org. structures.		
Access	• VA wait times for in-person services that exceed 28 days for SC. • Community Care wait times for in-person services that exceed 28 days.	• VA wait times for in-person services that exceed 28 days for SC. • Community Care wait times for in-person services that exceed 28 days.	• Based on interviews with OCC and CRHs, telehealth appointments are held to the same wait time standards as in-person appointments. • Wait time standards from MISSION Act.	
Quality	• Telehealth is being measured to track improvements in patient outcomes and satisfaction using existing quality framework.	• Continue to track telehealth's effect on patient outcomes using existing quality framework.	• OCC COP Framework. • Relevant V-Signals data. • Other relevant quality metrics for SC.	
Other			• Lack of broadband access or internet connectivity that limits VA provided telehealth. • See prerequisites.	

Detailed Planning Guidelines Rationale

The Telehealth planning guidelines were driven by an analysis of historical telehealth encounters, telehealth strategic planning, and a review of existing health care projection methodologies. Data sources used were interviews with clinical business owners, VSSC and EHCPM.

- Geographic distribution criteria were based on interviews with OCC and CRHs which indicated that the VISNs and facilities currently serve as the main geographic unit of operation for telehealth services with some national exceptions.
- 10-year projected synchronous telehealth encounters were developed utilizing the methodology outlined in Section 4.1 for utilizing historical encounters and EHCPM to projected future encounters.
- Supply thresholds for FTEs per unique came from discussions with subject matter experts and clinical business owners. For specialty care, due to the wide variety of services, supply guidelines were determined based on existing clinical business owners' guidance to be consistent with the Specialty Care National Planning Strategy.
- Wait time criteria were determined as guidelines based on clinical business owner interviews and industry best practices. [53] These values are consistent with VHA's wait time standards and VA's MISSION Act.
- Staffing criteria were based on interviews with clinical business owners.
- Other criteria were based on reviews of OCC's strategic plan, interviews with OCC, CRH best practices, and other interviews with clinical business owners and subject matter experts within telehealth.

Planning Guidelines Application

An example CBOC has a history of recruitment and retention issues. Using the planning methodology, the CBOC determines it has a PCP shortfall of 4.0 FTEs, or roughly 4,000 unique Veterans. Since the goals of CRHs are to meet 50% of the CBOC shortfall by hiring health care professionals at the VISN CRH, the VISN CRH can provide 2.0 PCP FTEs at the CBOC to deliver synchronous telehealth services. In the event the VISN CRH is unable to provide the services needed, the CBOC could look to the consortia or multi-VISN CRH/VHCS for the virtual support needed.

The telehealth planning guidelines help address a facility's inability to recruit and retain health care professionals. It matches patient demand with health care professional availability, mitigates CCN expenditures and keeps referrals within VA facilities. The planning guidelines could also potentially change site classifications such as CBOCs and Multi-Specialty CBOCs (MS CBOCs).

For Veterans to receive the full benefit of telehealth and for planning to be fully maximized, key system barriers must be acknowledged and resolved. These barriers include: [5]

- The need for a seamless, integrated, and flexible scheduling system used at all facilities that enable:
    - Veterans to self-schedule telehealth appointments using an online application.
    - Schedulers to use any available provider appointment time for a telehealth visit when clinically appropriate and preferred by the Veteran.
    - Resource-based scheduling to interfacility telehealth appointments by any front-line scheduler.
    - Family members, caregivers, and other Veteran support personnel to virtually participate in appointments when the health care professional and Veteran are attending the appointment in-person.
    - Scheduling of all visit types, including telehealth, through a single scheduling application.
- The need for modernized scheduling scripts, data sources, and data visibility so Veterans are:
    - Routinely given the options to receive telehealth care from their home when clinically appropriate and preferred by the Veteran.
    - Family members, caregivers, and other Veteran support personnel are routinely invited to participate in a Veteran's appointments by virtual means if preferred.
    - Made aware of clinically appropriate interfacility telehealth options for their care, when eligible for community care, to ensure they are given the options of receiving their care from VA health care professionals instead of the community.
- The need to modernize the electronic medical record, workload tracking, utilization tracking, and the funding allocation model to support interfacility, clinic-based telehealth services without requiring documentation by health care professionals in two medical records.
- The need for cultural transformation and the alignment of incentives, such as funding allocation, workload credit, and performance plans that facilitate clinical resource sharing across facilities, VISNs, consortia, and the enterprise.
- The need to better align VA budget certainty with the academic calendar year so facilities can effectively recruit and commit to health care professionals who are in their final years of medical training at VA affiliated education programs and seeking employment commitments.
- The need for modern policies and regulations that support clinical resource sharing across VA facilities, VISNs, consortia, and the enterprise.
- The need to establish promotion opportunities for skilled telehealth employees, such as facility telehealth coordinators and telehealth clinical technician, to

incentivize their retention in the VA system and their retention in positions that support telehealth services.
- The need for an equipment management system that enables health care professionals to efficiently order Veterans remote monitoring, prevention, and telehealth equipment for use in the home, and enables VA to efficiently purchase, distribute, and recover these devices.
- The need for a modern fiscal system and processes that can realize the value of centralized purchases for Veteran remote monitoring, prevention, and telehealth equipment.
- The need for an EHR, and support staff that can design and implement workflows and documentation tools unique to a clinical service.
- The need for comprehensive telehealth training and the expectation of telehealth competency for all VA health care professionals as well as the need to integrate telehealth training into affiliated education program curricula.

OCC, clinical business owners and VHA Leadership should prioritize these critical needs.

Planning Guidelines Summary

The aggregate primary care demand is projected to rise by 48%, from 14.5 million annual encounters in FY 2019 to 21.5 million encounters by FY 2029. Transitioning primary care delivery from traditional in-person visits to an increasing percentage of synchronous telehealth, is widely viewed as a major leap forward in access, ease, and quality of life for Veterans.

Although telehealth is not meant to replace all traditional in-person visits, there is a push to deliver a significant proportion, as appropriate, of the projected FY 2029 21.5 million encounters via synchronous telehealth. Using the current baseline of 5.1% of total encounters delivered via synchronous telehealth, data suggests that up to 25% of primary care may be delivered via synchronous telehealth by FY 2029.

The 25% synchronous telehealth demand projection for primary care yields approximately 5.4 million synchronous telehealth annual encounters by FY 2029. To respond to this increase, VA needs to more effectively utilize asynchronous and self-management virtual care modalities to support Veteran health care needs, leverage a modernized scheduling system to maximize provider time with patient needs, more effectively share resources across VA locations, and manage CBOC or VAMC walk-in patient demand by offering Veterans 24/7 health care services from a Clinical Contact Center when care does not require a continuity relationship. Further planning includes organizational changes needed to increase provider efficiency and the number of daily patient visits, the use of innovative technology for medical exams at home, and operational changes to improve chronic care management for Veterans with multiple medical conditions. Since the health care demand will unlikely be addressed through innovation and enhancements alone, increased physical infrastructure and capacity,

such as space, health care professionals, and support will also be needed to meet the projected 48% increase in overall primary care demand by FY 2029.

Similar considerations are needed for mental health, which has potential to deliver 40% of total FY 2029 encounters via synchronous telehealth, or 6.18 million encounters. Related clinical services such as PTSD and substance use disorder may also anticipate a significant increase in use of synchronous telehealth as a viable means to deliver care, but will also require the personnel, including an increased number of health care professionals, to meet the need.

It is imperative that innovations and enhancements to current clinical business practices are implemented for telehealth programs to continue to succeed. Use of technology to allow patient vital signs or other clinical testing from home would allow more Veterans to seek care without coming to a physical building and could potentially change the types and numbers of staff on a PACT team. Enhancements in patient scheduling would help match Veteran demand with available staff, regardless of their physical location. IT infrastructure needs to remain modern and a modernized system for ordering, distributing, and managing remote patient monitoring, prevention, and health promotion equipment needs to be established.

5. Future Program Planning

Future Recommendations for Considerations

Future considerations for the optimal national implementation of telehealth within VA are grouped into the categories below:

1) **Reimagining clinical service delivery with connected care technologies:** Looking to the future, many clinical specialties and disciplines, such as cardiology, pulmonary, and pharmacy will deliver an increasing portion of their clinical services through connected care technologies. To prepare for success, each clinical service needs to be intentionally rethinking their service delivery model in the context of current and emerging connected care capabilities. Each clinical specialty and discipline should include connected care integration and innovation in their strategic planning efforts and identify personnel who can serve as their lead(s) for these efforts and resulting change management initiatives. This model of intentional planning and resource assignment has proven successful in VA. Adopting it as the expectation across all clinical services and disciplines will facilitate VA's preparation for the future of health care. It will help VA remain the preferred option for Veterans by offering the most efficient, high-quality, patient-centered services. [5]

2) **Connected care field staffing resource planning**: To realize the capabilities of connected care and telehealth for Veterans, VA needs to invest in a connected care workforce that supports connected care expansion, innovation, and oversight. This includes establishing minimum expectations for connected care personnel at the VISN and facility levels. Minimum personnel for connected care and related team staffing at the VISN and facility levels include: [5]

VISN Level Personnel	Facility Level Personnel
VISN Telehealth Program Manager: Responsible for the overall oversight of the telehealth program across the VISN including support for strategic planning, future opportunities, quality, and growth. Serves as liaison to the national telehealth program office and lead for the VISN telehealth community.	**Facility Telehealth Coordinator (FTC):** Responsible for the telehealth program at the facility level, similar to the responsibility of the Telehealth Program Manager at the VISN level.
Deputy VISN Telehealth Program Manager (RPM-HT Lead): Responsible for similar duties as the VISN telehealth lead within the remote patient monitoring programs.	**Deputy Facility Telehealth Coordinator (RPM-HT Lead):** Responsible for the remote patient monitoring program at the facility level, similar to the responsibilities of the Deputy Telehealth Program Manager at the VISN level.

Connected Health Coordinator: Responsible for implementation, management, communications, and patient/health care professional education for connected applications such as My HealtheVet, Annie, and Mobile apps across the VISN. Serves as liaison to the national connected health program office and lead for the VISN connected health community. Examples include Facility Connected Health Coordinators.	**Facility Connected Health Coordinator:** Responsible for the implementation, management, communications, and patent/health care professional education for connected applications at the facility level, similar to the responsibility of the Connected Health Coordinator at the VISN level.
Telehealth Technology Manager: Responsible for planning, implementing, managing, and supporting telehealth technology for Veterans and VA health care professionals across the VISN. Serves as liaison to the national telehealth technology manager and as the lead for the VISN telehealth technology management community.	**Facility Telehealth Technology Manager:** Responsible for planning, implementing, managing, and supporting telehealth technology for Veterans and VA health care professionals at the facility, similar to the responsibilities of the telehealth technology manager at the VISN.
Administrative and Other Telehealth Support Personnel: Staff, full or part-time, to support administrative duties, data analytics, and management of special projects or functions, such as VISN Coordinator for Telehealth Preceptor Program.	**Telehealth Clinical Technicians (TCT) (Facilities and Clinics):** At the entry grades, TCTs are responsible for supporting clinic-level program management (for example communications), local health care professional cross-training, scheduling, technology support, and the patient side of telehealth encounters (for example tele-presenting for video telehealth or imaging for Tele-Dermatology). At the higher grades, TCTs are the leads or supervisors of other TCTs and take on expanded responsibilities outside a single clinic or location.

VISN Level Personnel	Facility Level Personnel
Team for Clinical Resource Sharing Operations: This is the administrative and clinical team, such as the CRH staff, responsible for organizing and managing the clinical services delivered across facilities within the VISN or between VISNs. CRH staffing recommendations are produced by the national CRH governance board.	**Lead Care Coordinator and Care Coordinators (Home Telehealth):** Responsible for monitoring Veterans through the RPM-HT program. The lead care coordinator assumes additional responsibilities for program oversight and for ensuring the local program's adherence to VA RPM-HT COP.
Other personnel needed at the VISN and facilities but are not specifically part of the connected care workforce include schedulers, informational technology staff, and biomedical engineers.	

3) **Infrastructure and hardware planning:** To successfully position itself for the future of health care and to remain a leader in connected care, VA must plan to maintain a modern technical infrastructure that supports connected care delivery. Infrastructure and hardware planning should include: [5]

- Establishing hospital and clinic bandwidth standards, and monitoring VA locations against those standards, to proactively upgrade internet infrastructure when needed to support expanding connected care services.
- Equipping exam rooms with basic telehealth equipment and software, as a standard, that enable any space to be a health care professional or Veteran endpoint for telehealth visits.
- Designating and equipping select clinic exam rooms with specialized telehealth equipment such as digital stethoscopes, audiology carts, ultrasound, and retinal imaging cameras to enable more complex or comprehensive telehealth services.
- Establishing secure and robust Wi-Fi networks to enable the use of mobile telehealth equipment in inpatient and outpatient settings.

4) **Scheduling system modernization**: For VA to function as a single, unified, interoperable health care system and to effectively offer its services in accordance with modern expectations, VA needs to modernize its scheduling systems. While working to implement Cerner as its long-term solution, VA should be regularly updating and enhancing its existing scheduling technology to: [5]
   - Integrate scheduling of video-to-home services into the front-line scheduling platform used by all schedulers.
   - Enable Veteran self-scheduling.
   - Create scheduling flexibility so any available appointment time can be used to schedule an in-person, telephone, or telehealth visit.
   - Allow schedulers to view one appointment list for each health care professional, consolidating health care professionals' in-person, telephone, and telehealth appointments into one view.
   - Provide the ability to invite family members, caregivers, and other Veteran support personnel to virtually participate in any outpatient appointment.
   - Support booking Veterans appointments at telehealth access points available in their local communities.
   - Allow flexible appointment durations.
   - Facilitate cross facility telehealth appointments, including when scheduling across sites using a combination of VistA and Cerner scheduling systems.

   Scheduling system enhancements would increase the ease of scheduling for both traditional in-person encounters and telehealth encounters across VA, enhance the accessibility of VA services by making it easier to obtain telehealth appointments, and support the sharing of clinical resources across the VA system.

5) **Modernizing VA business operations, policies, and practices:** The connected care strategy envisions a modern VA health care system without traditional barriers to health care access. As VA implements its connected care vision, it must be willing to reconsider key policies, systems, and business practices to better support modern care delivery and innovation. These policies, systems, and business practices may

have effectively supported VA's traditional health care delivery model but may not support modernization and even may hinder modernization. Such areas to prioritize include: [5]

- Fiscal allocation systems and fiscal disbursement management policies.
- Contracting processes that inhibit rapid cycle innovation.
- Workload capture systems that do not support resource sharing across facilities or prevent health care professionals from converting one appointment type, such as in-person, to another, such as telehealth.
- Performance incentives, accountability plans, and targets that do not incentivize sharing resources or complex, multi-year system enhancements.
- Policies and practices that artificially distinguish "IT" and "Non-IT" systems/tools to account for different congressional appropriations.

For VA to modernize, it must be willing to support innovations and resist the expediency of forcing innovations into outdated or inflexible and traditional operations.

6) **Logistics and distribution strategy:** VA does not current have a standard national process for ordering, distributing, and managing equipment or devices from facilities that fall in the categories of remote patient monitoring, health promotion/disease prevention, and telehealth. Services needing to use such equipment and devices must develop their own processes and support it with personnel. Existing standard national processes and systems that supply equipment and devices to Veterans exclude equipment and devices in the remote patient monitoring, health promotion/disease prevention, and telehealth categories. As VA is transitioning more services to Veterans' homes through connected care, digital equipment and devices such as smart watches, fitness trackers, and internet connected blood pressure monitors are becoming more integral in care delivery, and health care continues its necessary focus on health promotion and disease prevention, VA must plan to address this gap or risk delaying innovation and services. [5]

7) **Clinical workflow redesign:** Integrating connected care technologies into efficient clinical workflows is critical to successful health care systems modernization. Beyond scheduling workflows, which have already been discussed, this includes, but is not limited to: [5]

- Integration of connected care technologies such as clinical chat and video visits into contact center workflows to support Veterans at any time.
- Routinely offering technology support, as part of regular scheduling scripts, when choosing connected care tools such as video telehealth in the home.
- Enabling providers to complete all their clinical tasks without having to switch between multiple applications. Examples of such clinical tasks include answering secure messages, prescribing an app, receiving alerts, arranging an ad hoc

video visit, subscribing to or reviewing patient generated data, and ordering remote monitoring devices.
- Establishing software tools that support collaborative care amongst clinical team members, such as the ability to quickly invite someone into a video room, similar to the value of an in-person care environment.
- Standardizing workflows, templates, and processes specific to the needs of each specialty and clinical discipline to achieve optimal performance.

8) **Telehealth training needs:** This includes cross training for all teams to allow health care professionals to take on more than one role, if needed, and to ensure clinical services are not disrupted if one clinic team member is on sick leave. Training should be comprehensive and allow health care professionals to have easy access to supportive resources and clear escalation pathways, if needed. Training needs to be considered a continual process, requiring regular updates, as new clinical models, platforms, and technologies are implemented. Additionally, systems should be supported to provide local assistance for achievement and confirmation of competency, such as the Telehealth Preceptor Program, for existing and emerging connected care services. Finally, connected care education should be incorporated in the training of health care professional trainees. This key strategy supports the development of connected care competency in VA's future workforce. [5]

9) **Standardized quality management/assurance processes**: Since connected care is a new way to deliver care with more complex workflows than in-person care, the points of failure in connected care clinical workflows must be closely monitored and quickly identified for remediation. Connected care has traditionally managed a quality management program for telehealth. Going forward, integration of connected care's quality management program into standard facility, VISN, and national quality management and oversight processes is essential for ensuring quality and safety, satisfaction, and highly reliable organization principles. [5]

5.1 Applying the Telehealth National Planning Strategy to VA Market Assessments

The VA MAHSO effort completed an initial assessment of VA markets, facilities, and service lines to produce recommendations for the design of high-performing integrated delivery networks. VA Leadership identified select service initiatives for development of a standard national strategy and approach to planning and maintaining programs. While the original MAHSO data provided insight into a wide array of overall Veteran health care patterns, a limited number of telehealth details was provided, and therefore, few telehealth-specific opportunities were developed. This helped signal the need for additional data and analyses to be conducted to have a deeper understanding of historical trends and projected telehealth demand moving forward. Based on the additional data obtained, the Telehealth National Planning Strategy established the

definitive planning guidelines to be used for VA Telehealth planning efforts moving forward. The national planning guidelines will be used to ensure that the final market assessments apply standardized programmatic criteria across the nation. The guidelines will be useful to VA planners to inform current and future quadrennial market assessments and other planning exercises.

How will MAHSO apply the Telehealth National Planning Strategy?

The four-step process for revisiting MAHSO draft opportunities describes how telehealth-specific opportunities will be reviewed and updated, if necessary:

1. Review Phase 1-3 Market Assessment Data and Telehealth Opportunities

The scope of review will include revisiting Phase 1-3 markets, reassessing opportunities that were specific to telehealth services using new thresholds and data (as applicable).

2. Apply Telehealth Planning Guidelines

For each applicable draft telehealth opportunity, the planner will review market assessment data and apply telehealth planning guidelines to telehealth-specific opportunities.

3. Update Telehealth Opportunities

As needed, existing opportunities will be revised.

4. Review and Finalize with VA Leadership

Once draft opportunities are revised and are ready for VA Leadership approval, a review with the Chief Strategy Office (CSO), VHA Leadership, and VISN Directors will move the opportunities towards finalization.

Conclusion

The Telehealth National Planning Strategy, created in conjunction with the Office of Connected Care, is a framework for designing consistent service delivery planning for telehealth services. Based on the Office of Connected Care's strategic priorities, the Telehealth National Planning Strategy provides guidance on how telehealth can respond to varied market demands and trends while optimizing VA resources in a Veteran-centric framework. These guidelines will be used to ensure that service delivery planning is matched to Veteran demand in future planning and supports the development of the Asset and Infrastructure Review (AIR) Commission Report.

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Appendix B: Interviews

Office	Interviewee	Date(s)
Office of Connected Care	Dr. Neil Evans Dr. Kevin Galpin Ms. Ellen Edmonson	**May** 3, 11, 14, 17, 24 **June** 4, 22, 24, 30 **July** 8, 9, 15, 22, 30 **August** 9, 18
Clinical Resource Hubs	Mr. Matthew Rogers	**May** 20 **June** 14, 15
The National Specialty Care Program Office	Dr. Ajay Dhawan Dr. Lisa Jensen Dr. Maggie Chartier	**May** 19, 25
Office of Mental Health and Suicide Prevention	Dr. Kendra Weaver Dr. Lawrence Wahlburg	**May** 21
Office of Primary Care	Dr. Ami Shah Dr. Angela Denietolis	**June** 30 **August** 3

Appendix C: Acronyms

Acronym	Definition
AIR	Asset and Infrastructure Review
ATLAS	Accessing Telehealth through Local Area Stations
CBOC	Community-Based Outpatient Clinic
CCN	Community Care Network
CITC	Care in the Community
COE	Center of Excellence
COP	Conditions of Participation
COVID-19	Coronavirus Disease 2019
CPS	Clinical Pharmacy Specialist
CRH	Clinical Resource Hub
CSO	Chief Strategy Office
DICOM	Digital Imaging and Communications in Medicine
EHCPM	Enrollee Health Care Projection Model
EHR	Electronic Health Record
ERIC	Enhanced Recovery After Intensive Care
FHIR	Fast Healthcare Interoperability Resources
FTC	Facility Telehealth Coordinator
FTE	Full Time Equivalent
FY	Fiscal Year
HIPAA	Health Insurance Portability and Accountability Act
HPSA	Health Care Professional Shortage Areas
HRSA	Health Resources and Services Administration
HSPC	Health System Planning Category
ICU	Intensive Care Unit
LIP	Licensed Independent Practitioner
MAHSO	Market Area Health System Optimization
MD	Doctor of Medicine
MH	Mental Health
MISSION	Maintaining Systems and Strengthening Integrated Outside Networks
MS CBOC	Multi-Specialty Community-Based Outpatient Clinic
OCC	Office of Connected Care
OMHSP	Office of Mental Health and Suicide Prevention

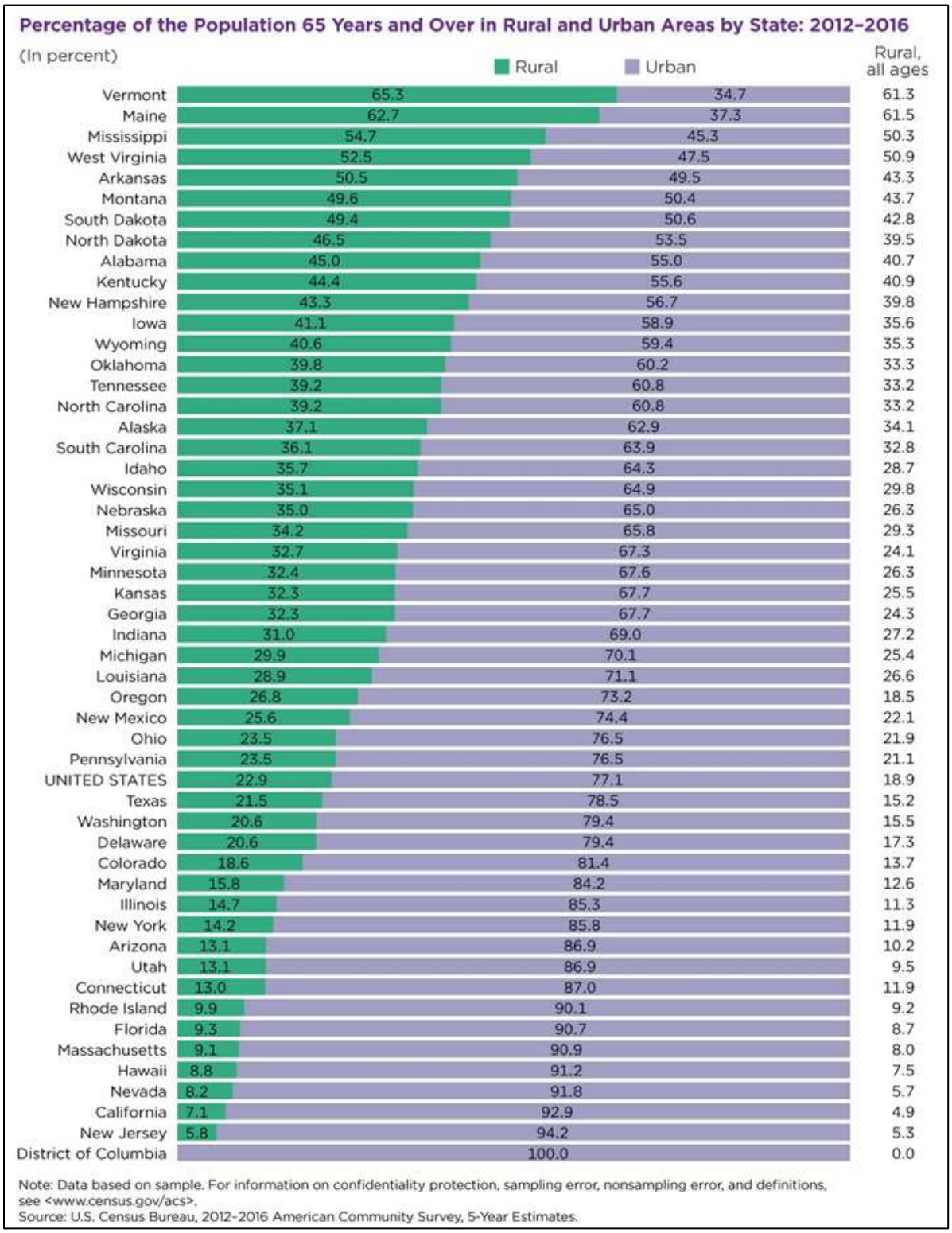
Acronym	Definition
ORH	Office of Rural Health
PACS	Picture Archiving and Communication System
PACT	Patient Care Alignment Team
PC	Primary Care
PCMHI	Primary Care Mental Health Integration
PCP	Primary Care Provider
PGHD	Patient Generated Health Data
PTSD	Post-Traumatic Stress Disorder
RN	Registered Nurse
RPM-HT	Remote Patient Monitoring-Home Telehealth
RUCA	Rural-Urban Commuting Areas
wRVU	Work Relative Value Unit
SAIL	Strategic Analytics for Improvement and Learning
SC	Specialty Care
SFT	Store and Forward Telehealth
TCT	Telehealth Clinical Technicians
TH	Telehealth
TMP	Telehealth Management Platform
U.S.	United States
VA	Department of Veterans Affairs
VAMC	Department of Veterans Affairs Medical Center
VHA	Veterans Health Administration
VERA	Veterans Equitable Resource Allocation
VHCS	Virtual Health Care System
VISN	Veterans Integrated Service Networks

Appendix D: Data

OCC Strategic Plan FY 2021-25

Source: Office of Connected Care, Connected Care Strategic Plan 2021–2025.

Rurality by Age by State



RUCA Definitions

Developed by the Department of Agriculture (USDA) and the Department of Health and Human Services (HHS), the Rural-Urban Commuting Areas (RUCA) system is used by VA to define rurality, and assigns each U.S. Census tract a RUCA code based on population density, urbanization, and daily commuting patterns. The definitions are:

- Urban Area: Census tracts with at least 30 percent of the population residing in an urbanized area as defined by the Census Bureau.
- Rural Area: Land areas not defined as urban or highly rural.
- Highly Rural Area: Sparsely populated areas – less than 10 percent of the working population commutes to any community larger than an urbanized cluster, which is typically a town of no more than 2,500 people.

For planning purposes, geographic designations such as counties, submarkets, and markets are classified as either rural or urban based on where most enrollees live. For example, if greater than 50% of enrollees within a county live in a rural area, the county is considered a rural county. If 50% or fewer enrollees live in rural areas, the county is considered an urban county.

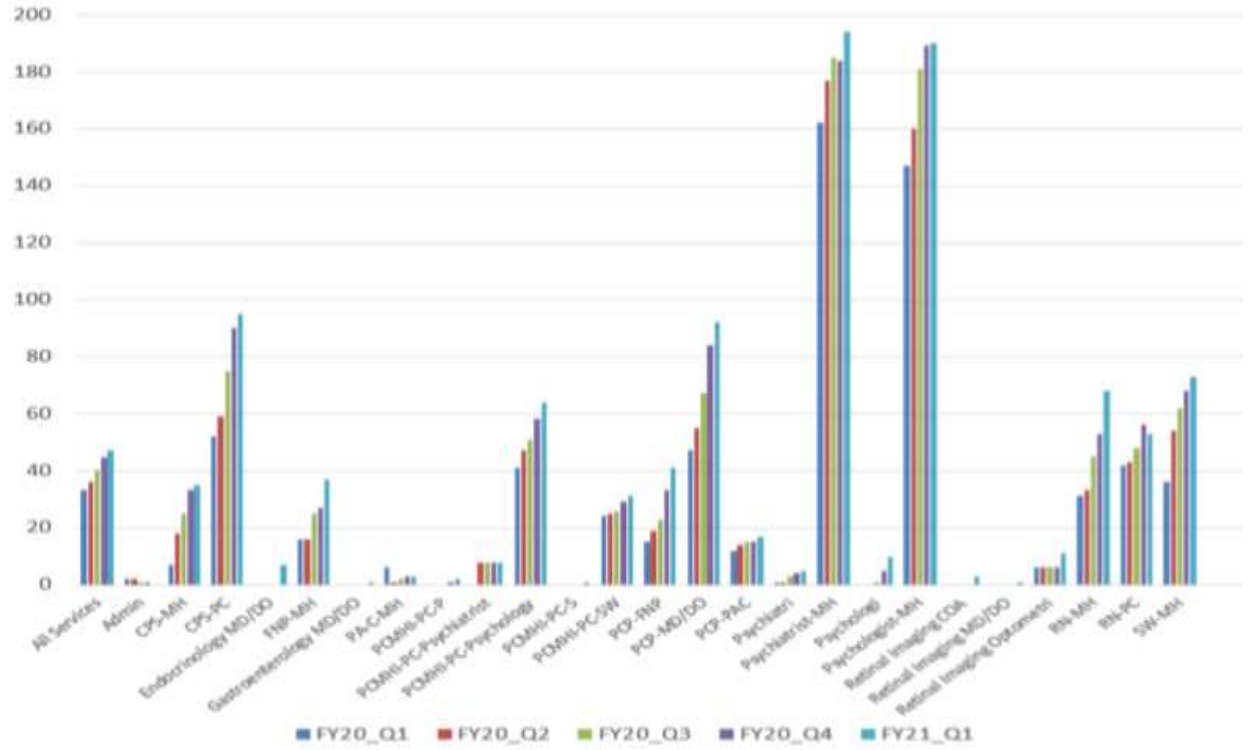
VAMCs with Highest Synchronous Telehealth Volume FY 2020

Health Care Professional Location	Synchronous Telehealth Encounters		SFT Encounters		Total TH Encounters
	Total	Inter facility	Total	Inter facility	
Gainesville, Florida HCS	135,171		3,181		138,352
Orlando, Florida HCS	120,213		1,133		121,346
Atlanta, Georgia HCS	118,683	505	9,997		128,680
Tampa, Florida HCS	102,056		11,516		113,572
San Antonio, Texas HCS	101,811	26	7,563		109,374
Phoenix, Arizona HCS	97,156		2,266		99,422
Columbia, South Carolina HCS	85,625		3,110		88,735
Dallas, Texas HCS	82,816	1	812		83,628
Temple, Texas HCS	76,987		6,922		83,909
Long Beach, California HCS	76,586	1,036	4,395		80,981
Charleston, South Carolina HCS	73,026		2,959		75,985
Loma Linda, California HCS	69,582	4	10,091		79,673
San Juan, Puerto Rico HCS	68,556	13	1,800		70,356

Health Care Professional Location	Synchronous Telehealth Encounters		SFT Encounters		Total TH Encounters
	Total	Inter facility	Total	Inter facility	
Salt Lake City, Utah HCS	65,956	2,716	8,016		73,972
West Palm Beach, Florida HCS	64,074		543		64,617
Las Vegas, Nevada HCS	63,955		1,256		65,211
Houston, Texas HCS	62,899	1	6,088		68,987
San Diego, California HCS	62,344	62	1,593		63,937
Puget Sound, Washington HCS	61,787	58	12,575	5,396	74,362
Middle Tennessee HCS	59,297	107	2,181		61,478
Cleveland, Ohio HCS	58,614	346	15,990	1	74,604
New York Harbor HCS	55,239	1,931			55,239
Portland, Oregon HCS	55,010	13	10,911		65,921
Cincinnati, Ohio HCS	52,952		1,263		54,215
Greater Los Angeles, California HCS	52,308	2	2,806		55,114
Boston, Massachusetts HCS	51,341	537	2,796	712	54,137
Bay Pines, Florida HCS	50,966		1,235		52,201
N. California HCS	50,478		10,448		60,926
San Francisco, California HCS	46,808	1,091	4,537	907	51,345
Hampton, Virginia HCS	46,103		25		46,128

Source: VSSC, Telehealth Dashboard as of 7/29/2021.

Spoke Coverage Staff Types (FY 2020 and Q1 FY 2021)



Source: Veterans Health Administration, The Clinical Resource Hub Cable Q2 FY 2021