Defense Health Board Report

Optimizing Virtual Health in the Military Health System

March 22, 2023

Vice President's Memo

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
HEALTH AFFAIRS
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DEFENSE
HEALTH
BOARD

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE FOR HEALTH AFFAIRS

SUBJECT: Optimizing Virtual Health in the Military Health System

The Defense Health Board (DHB) is pleased to submit this report and its accompanying findings and recommendations from its independent review of the Department's current state of virtual health (VH) in the Military Health System (MHS) and provide guidance on optimizing VH decision making and implementation throughout the system.

On May 2, 2022, the Acting Assistant Secretary of Defense for Health Affairs directed the DHB, through its Health Care Delivery Subcommittee, to review the current state of virtual health (VH) from a strategic and tactical perspective and provide recommendations on optimizing VH decision making and implementation. The Health Care Delivery Subcommittee performed a comprehensive search and review of VH in commercial and government sectors, with particular attention to strategy and implementation. The Subcommittee received briefings from, and consulted with, experts from military and civilian institutions.

The Health Care Delivery Subcommittee presented their report to the DHB on March 22, 2023. Following public deliberation, the DHB approved their findings and recommendations. These findings and recommendations address themes that coalesced during the report process: VH as a force multiplier, strategies for prioritizing VH, implementation of VH, and metrics to demonstrate the value of VH.

On behalf of the DHB, I appreciate the opportunity to provide the Department with this independent review and hopes that it provides useful information to support the DoD's mission to maintain a ready force and deliver the health benefit by optimizing the use of VH to fulfill the MHS's quadruple aim.

Jeremy Lazarus, MD
Second Vice President, Defense Health Board

Attachment:
As stated

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Executive Summary

On May 2, 2022, the Acting Assistant Secretary of Defense for Health Affairs (ASD(HA)) directed the Defense Health Board (DHB), through its Health Care Delivery Subcommittee, to review the current state of virtual health (VH) from a strategic and tactical perspective. Specially, the ASD(HA) requested the DHB recommend guidance on optimizing VH decision making and implementation.

The military has been a dominant force in developing and producing new technologies with broad applicability to US industries. The Department of Defense (DoD), through the Military Health System (MHS), led the way for VH in the 1990s with the use of satellite phones from the frontlines to clinicians at Walter Reed Army Medical Center, as it was known then. As the digital age progressed and other health systems began to adopt modern communications technologies, the MHS failed to keep pace with the innovation occurring elsewhere. There was slow adoption of VH, as an innovation, throughout the MHS. Consequently, it currently lags other leading healthcare systems, including the Veterans Health Administration (VHA), in its VH capabilities. Now, however the MHS must "meet the patients where they are: anytime, anywhere – always."[1]

VH has the potential to be a force multiplier in the MHS, yet this potential has not been fully realized. Contributing factors have been substandard information technology (IT) platforms, lack of agreement and coordination between Services and DHA, and delay in developing a clear, centralized vision and strategy. With the coronavirus (COVID-19) pandemic, the MHS saw a dramatic and effective increase in VH use, showing its inherent benefits. This seemingly overnight multiplication of demand for VH stretched current capabilities to their limits and showed areas of challenges and opportunity for innovation and reorganization to optimize VH in the MHS.

VH operates in silos across the MHS with uncoordinated initiatives and no unified strategy. From a strategic perspective, VH strategy must align with the overall MHS goals. From a tactical perspective, VH initiatives should flow from a strategy put forth by a centralized authority. VH should be a system within the MHS that standardizes strategy with room for dynamic innovation for different clinicians and end users. Challenges for VH across the MHS are that the priorities and needs differ across settings (e.g., deployed vs. non-deployed), by users (e.g., clinicians vs. patients), and by the Services.

The MHS needs a clear implementation and sustainment plan which includes the necessary tools, technology, IT infrastructure, and training. Users and key collaborators' buy-in is imperative to move the organization forward in standardizing the adoption of VH. Clinic staff and leaders cite VH as a frustrating tool that is more burdensome than the perceived benefit. Streamlining processes to mitigate and address workflow gaps can demonstrate VH's potential.

Measures and metrics that lead to improved patient outcomes will help leaders better understand the value of VH and identify areas for improvements. While the DHA is initiating work to standardize VH processes and workflows, there have been no metrics established to track progress. Measures need to be thoughtfully chosen, consistently collected, and reported as part of a coordinated plan for improvement. Other health systems, like the VHA, can serve as examples of system-wide implementation with metrics to measure progress.

As a force multiplier, VH can accelerate the MHS achievement of its Quadruple Aim, contribute to operational readiness, and support the safety, security, and health of the Service members and their families. The experience of patients and their care clinicians will help inform strategy and tailor VH to the unique needs of the DoD. As DHA Director LTG Crosland said, "We need to be leaders in exploring how to care for our people using technology that is available today, and that can be scaled tomorrow."[1] It is urgent the MHS establish a VH governance and organizational structure and develop a unified operational strategy to implement enterprise-wide. This strategy must take into account the people, processes, and technology while incorporating metrics that show the value of VH in the MHS.

The DHB reports the following findings and makes their recommendations in response to the tasking. The DoD should prioritize Recommendations 4 and 19.

Finding 1: The MHS was once on the leading edge of technologically enabled healthcare. Siloed efforts are hampering progress.

> **Recommendation 1:** The MHS must establish a state-of-the-art VH system focused on the entire community of users, including Active-duty, Reserve, and Guard Service members, Line Commanders, family members, retirees, and health professionals.

Finding 2: Successful MHS VH relies on integration of shared resources to succeed. There is a lack of agreement and coordination among the DHA and the Services.

> **Recommendation 2:** MHS leadership should direct DHA and the Service Leads to integrate VH care into both deployed and non-deployed settings with clear clinical priorities and populations.

Finding 3: Beneficiary access to VH in the Purchased Care network is not consistent.

> **Recommendation 3:** DHA should recommend that the next TRICARE contracts require clinically appropriate and interoperable VH care in the Purchased Care network to optimize beneficiary care.

Finding 4: The MHS lacks a unified VH strategy for both the deployed and non-deployed settings and an organizational structure for leading and managing it.

> **Recommendation 4:** The MHS must establish an integrated VH strategy for both deployed and non-deployed settings that meets the MHS's Quadruple Aim, establishes an organizational structure to lead and manage it, and advances equity.

Finding 5: DHA VH responsibilities to Service-led VH programs are not well defined. A robust communication channel between the DHA and the Services is lacking.

> **Recommendation 5:** DHA VH strategy must support health information interoperability among the Services and external health providers where applicable and enable Service-specific requirements where necessary.
>
> DHA VH should establish a strong channel of communication and collaboration with the Services' VH programs.

Finding 6: A concise list of high-impact, feasible priority areas amenable to VH interventions at scale has not been identified.

> **Recommendation 6:** DHA VH should identify high-impact, feasible priority areas that are amenable to VH interventions to deploy at scale. It is vital to prioritize initiatives on a multi-year plan, (e.g., mental health, DNBI, teleradiology, medical needs of beneficiaries overseas, and health disparities) that impact readiness.

Finding 7: Current VH capabilities significantly lag leading health care systems. Lessons learned from other health care systems, especially the Department of Veterans Affairs (VA), have not been effectively utilized.

> **Recommendation 7:** Optimize the Congressionally mandated DoD/VA Health Executive Council Telehealth Workgroup to identify lessons learned from VA to accelerate VH deployment in the MHS.

Finding 8: DHA is a member of the American Telemedicine Association. DHA has not used the ATA's self-assessment tool to gauge its use of VH in health care delivery.

> **Recommendation 8:** DHA should complete the ATA or other organizational self-assessment tool and repeat self-assessments regularly to identify friction points across user levels, clinical settings or geographic areas, and technology/equipment usage.

Finding 9: DHA VH does not have an organization-wide systematic implementation and sustainment plan for VH programs and initiatives, e.g., MHS Video Connect (VC).

> **Recommendation 9:** DHA VH must develop an implementation and sustainment plan and timetable which includes the necessary tools, IT infrastructure, and administrative support. VH leadership, accountability, and transparent continuous improvement efforts are essential.

Finding 10: DHA VH does not have a comprehensive communication plan, which is essential to successful implementation.

> **Recommendation 10:** DHA VH must work with DHA Communications to develop a population-appropriate communication plan for clinicians and patients that describes the tools, IT infrastructure, administrative support, training, and timeline for implementation of VH.

Finding 11: Process and technical barriers exist that dis-incentivize user engagement with VH and hinder implementation.

> **Recommendation 11:** DHA must work with end users to systematically identify and address the process and technical barriers to VH engagement.

Finding 12: Training and coaching are essential to successful VH implementation. There are good examples of trainings in the MHS, but training is not standardized and disseminated across the enterprise.

Recommendation 12: DHA should develop and disseminate standardized, enterprise-wide VH trainings for all users. Trainings should address workflow or technical issues, such as IT infrastructure, that may arise across all clinic staff and for patients.

Finding 13: Administrative infrastructure is insufficient to enable and support VH.

Recommendation 13: DHA should ensure administrative systems and personnel for VH are aligned to enable and support a user-centric experience. All Direct Care (DC) clinicians in the MHS should have privileges to provide care to beneficiaries anywhere.

Finding 14: Clinicians are not routinely provided credit for VH encounters. Additionally, VH visits may not be reimbursed comparably with in-person visits.

Recommendation 14: DHA should ensure clinicians get credit for both synchronous and asynchronous virtual care at a Relative Value Unit (RVU) rate at least equal to in-person care.

Finding 15: Standardized workflows for common conditions which could incorporate VH are not widely available.

Recommendation 15: DHA should:

- Review and incorporate where appropriate the DoD & VA Clinical Practice Guidelines already adapted for VH.
- Implement guidance to establish workflow protocols by specialty and by condition that are amenable to VH.
- Include patient-to-clinician, clinician-to-clinician, and complex, real-time monitoring modalities.

Finding 16: A robust standardized process to identify technology solutions is not consistently applied.

Recommendation 16: DHA VH should consistently follow the established rigorous process for developing and selecting technology solutions, for example, for Remote Health Monitoring (RHM), to ensure technology solutions meet the needs of users.

Finding 17: Sub-optimal IT infrastructure and lack of sufficient IT support limit incorporation and delivery of VH throughout the MHS.

Recommendation 17: DoD must establish an IT solutions center, with an enterprise help-desk function, to address issues impacting VH throughout the MHS:

- Coordination
- Standardization
- DoD-specific security concerns
- Establish interoperability with the VA and other health care systems

Finding 18: VH technological solutions, resources, and capabilities are different for deployed and non-deployed settings and do not consistently integrate with other relevant systems (e.g., MHS GENESIS or workload capture system). Lack of integration can compromise quality of care, discourage VH engagement, and increase risks to privacy and security.

> **Recommendation 18:** DHA must ensure that enterprise technology solutions used in deployed settings are appropriate, meet user needs and security requirements, and integrate with other major MHS systems (e.g., MHS GENESIS, MHS VC).

Finding 19: The Services currently operate on different networks in deployed settings. Reciprocity (e.g., sharing of information and resources) and bandwidth allocations are problematic issues.

> **Recommendation 19:** The MHS must:
> - Comply with the Joint All Domain Command and Control Framework and other DoD data standards that govern reciprocity and data sharing.
> - Require a standard DoD bandwidth cybersecurity signal package so VH can function consistently on all the networks.
> - Prioritize solving connectivity problems.

Finding 20: Process and outcome measures are necessary to drive improvement and demonstrate value. These are not being collected consistently across the enterprise nor used as part of a coordinated plan for improvement.

> **Recommendation 20:** The MHS should develop a plan to consistently collect data across the enterprise to track process and outcome measures for both deployed and non-deployed settings. This needs to be coordinated across the Services and the DHA and used for performance improvement.

Finding 21: Many current DOD VH measures (such as number of VH visits) do not support the improvements needed in process and outcomes.

> **Recommendation 21:** In consultation with internal DOD experts (including MHS early adopters), and informed by metrics used by leading health care systems, DHA should select measures that include all the following elements:
> - Clinical outcomes, quality, and safety
> - Clinician experience
> - Patient, family, and caregiver experience
> - Access to care
> - Financial and operational impact
> - Health equity

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Definitions

Please note that this document uses "**Virtual Health (VH)**" to encompass all technology (e.g., computer, smartphone, tablet, or other digitally enabled device) that a patient may use to access their health care. The term "Virtual Health" is synonymous with the terms: virtual care, digital health, telehealth, or telemedicine.

This document also uses the term "**clinician**" to include all providers or health care providers as defined by Title 10, United States Code, Section 1091, which states any member of the Armed Forces, civilian employee of the Department of Defense, or personal services contract employee authorized by the Department of Defense to perform health care functions.[2]

Other terms used throughout this report include:

Deployed: Forces located in an operational area.[2] Synonymous with the terms: operational, in-theater, wartime.

Deployment: The movement of forces into an operational area.[2] Also referring to being in an operational setting.

Disease and nonbattle injuries (DNBI): All illnesses and injuries not resulting from hostile action or terrorist activity or caused by conflict.[2]

Doctrine (n.) or **Doctrinal** (adj.): The fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives.[3]

Joint Doctrine: Consists of fundamental principles that guide the employment of the Armed Forces of the United States in unified action to achieve unity of effort.[4]

Military Department (MILDEP): One of the departments within the Department of Defense created by the National Security Act of 1947; the Department of the Army, the Department of the Navy, or the Department of the Air Force.[5]

Military Health System (MHS): Provides direction, resources, health care providers, and other means necessary to foster, protect, sustain, and restore health to Service members and other beneficiaries.[2]

Non-deployed: Not currently mobilized or in an operational area. Synonymous with the terms: peacetime, garrison, non-operational.

Chapter 1:

Virtual Health is an Essential but Unrealized Force Multiplier for the Department of Defense

Virtual Health (VH) in the Military Health System (MHS) has the potential to address the size, complexity, and specialized needs of the DoD. Every hour of the day worldwide, over 9.6 million beneficiaries – Active Duty Service members (ADSM), family members, and retirees – receive care from the MHS in hospitals, clinics, field medical clinics, submarines, aircraft, and in their homes. A globally distributed workforce including primary care clinicians, subspecialty physicians, nurses, other health professional, mental health (MH) clinicians, medical technicians, and medics on the front line provide health care to military members and all MHS beneficiaries.

Unrelenting pursuit of excellence as we care for our joint force and those we are privileged to serve. Anytime, Anywhere—Always. - Defense Health Agency Vision[6]

The complexity and mission of the MHS demand an integrated, standardized, and adaptive VH system of care. The MHS was once on the leading edge of technologically enabled healthcare. However, the promise of MHS VH has fallen far short of its potential. DoD is no longer a standard bearer despite decades-long leadership in telemedicine technologies and practices for specific operational clinical needs. The MHS has long-standing organizational challenges that significantly impact VH success and sustainment.

The Military Health System

The MHS (Figure 1) comprises the Army, Navy, and Air Force medical readiness commands and the Defense Health Agency (DHA). Health care in the MHS consists of two arms: deployed and non-deployed care. The Service-specific medical commands are responsible for deployed care, or health care administered to ADSMs in operational settings. The DHA is responsible for non-deployed care for MHS beneficiaries provided through the Direct Care (DC) and Purchased Care (PC) networks.[7] The DHA administers the DC network, which serves non-deployed ADSMs and a subset of family members and

Figure 1. The Military Health System Organizational Chart

retirees, based on availability, at fixed Military Medical Treatment Facilities (MTF). The DHA ensures beneficiary care that cannot be provided in the DC system are cared for at civilian hospitals and clinics through managed care support. The recently instituted 'Market' approach aims to foster integration of care across DC MTFs and the PC network within varying geographic regions.[8]

Virtual Health in the Military Health System

VH, now often referred to as Digitally Enabled Care, can enable unparalleled flexibility of care.[9] However, it relies on a standardized and integrated system to do so. The MHS began developing a standardized, integrated VH program after the establishment of the DHA in 2013 (Figure 2). The challenge of creating the DHA (i.e., merging and standardizing aspects of Service specific medical capabilities under one umbrella organization) slowed progress toward enterprise VH.

Figure 2. Defense Health Agency Overview[7]

The Defense Health Agency (DHA)
DHA Implementation and standup began in 2013 and completed 2022.

What is it?
A joint, integrated combat support agency designed to standardize and administer operations at all Military treatement Facilities (MTFs) and across functions common to all three Services.

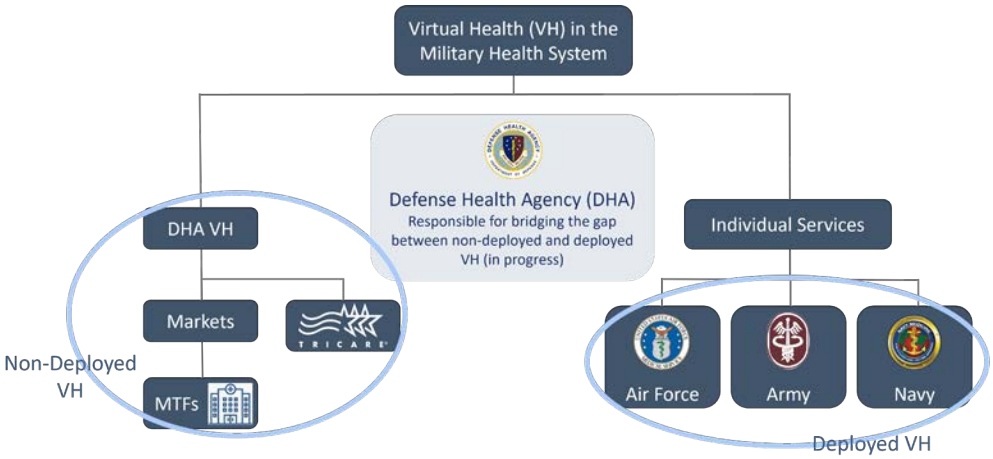
What is the mission?
- *Provide Military Health System beneficiaries with high quality health care services*
- *Ensure a ready medical force in both deployed and non-deployed environments*

How does it achieve this?
- *Providing combat support by ensuring the medical readiness of Service members and their families, and ensuring the readiness of medical personnel*
- *Providing administrative services to manage MTFs in its market-based regional strcuture*
- *Deliberating the TRICARE Health Plan to Service members, retirees, and their dependents through its direct and purchased care mechanisms*
- *Deploying MHS GENESIS, the DoD's new electronic health record that will be integrated across th DHA's continuum of care and eventually with the Department of Veterans Affairs*

Today, VH is organized like the larger MHS (Figure 3). The Services are responsible for VH in deployed environments (operational VH) and the DHA is directly responsible for non-deployed VH care (Figure 3). In practice, DHA's authority covers VH in the DC network. It has little input into or oversight of VH services that beneficiaries receive from civilian clinicians in the PC network beyond contract coverage decisions. As noted in the quote below, the DHA needs a greater level of coordination, and perhaps oversight.

An Active Duty Service member may receive care by a specialist in the private care system, and a primary care clinician needs the assessment of that clinician to make a readiness decision. The entire system needs coordinated and expanded health care access locally, regionally, and globally while maintaining quality; VH is an enabler of that goal.[10]

Figure 3. Virtual Health Within the Military Health System



Recent policy charged the DHA to act as a "bridge to support the Services' operational capabilities."[11,12] The DHA integrated three formerly Service-led Virtual Medical Centers (VMC) – San Antonio (Brooke Army Medical Center [BAMC]), Europe (Landstuhl Regional Medical Center), and Indo-Pacific (Tripler Army Medical Center) to support operational readiness and enable reach-back from non-deployed to deployed care environments. However, briefings to the Subcommittee suggest that DHA's bridge to support operational capabilities is still very much under construction (Figure 3).

Virtual Health in the Defense Health Agency

In July 2020, the DHA formally assumed responsibility for VH in the DC network and in July 2021, DHA Health Care Operations (HCO) became responsible for centralized strategy development for VH in the DC network. HCO began integrating VH into health care delivery and identified four obstacles[13]:

- mismatch in location of VH supply and demand
- lack of leadership accountability
- lack of standardization
- lack of centralized appointment booking

DHA leadership put forth plans to establish policy, properly train VH users, and ensure accountability. High-level goals include[13]:

- improved access
- standardized processes
- enhanced patient experience
- reduced cost and better use of resources
- increased support of readiness and Knowledge, Skills, and Abilities
- reduced loss to the PC networks

This report provides insight and guidance to support HCO in these endeavors and to build on lessons learned during the COVID-19 pandemic.

Virtual Health During the Coronavirus Pandemic

The dramatic increase and effective use of VH during the COVID-19 pandemic crystalized the benefits of VH in civilian health systems and the MHS. VH brought medical and behavioral health 'care and caring' to new patient populations and increased the reach, effectiveness, and efficiency of health care clinicians. The DHA successfully harnessed efforts and resources to surge VH capability in response to the pandemic, and did so in a system in flux. As discussed above, Deputy Assistant Director for Health Care Operations (DAD-HCO) established DHA VH authority and responsibility during this period. Additionally, the MHS began deploying its new Cerner®-based electronic health record (EHR), MHS GENESIS.

In response to COVID-19, the expansion of VH application heightened patient, clinician, and system expectations for accessible, convenient, and effective VH care. Despite improvement, DHA VH has not met expectations. DHA lags other health care systems providing VH care for several reasons, including:

- delay in developing a clear, disseminated, and centralized VH strategy
- lack of agreement and coordination among the Services and DHA regarding responsible people, operational processes, and preferred technologies
- substandard and outdated information technology (IT) platforms with inadequate training
- organizational and workload disincentives that undermine or delay VH use

The Way Forward

The MHS has the core skills, personnel expertise, and organizational prowess to support integrated excellence in VH and reclaim the leading edge. The DHA began to construct an integrated VH program for the DC network. However, integration and standardization of non-deployed and deployed VH care across the MHS is necessary to a truly effective VH program. VH holds immense promise for the MHS. To achieve it, the DHA must:

- integrate VH into a comprehensive system of non-deployed and deployed care with clear clinical priorities and populations
- create implementation timelines and impact measures
- explore ways to incentivize TRICARE contracted clinicians to provide VH care to MHS beneficiaries

Figure 4. The Military Health System Quadruple Aim

The MHS VH Vision, "connecting to optimal health services - anytime and anywhere," is simple but powerful.[11] An aligned, comprehensive VH effort, efficiently executed and widely experienced, would preserve and improve the performance of military and military medical personnel and resources. The first step is to crystallize the vision into a series of achievable steps and milestones which, put together, further the MHS Quadruple Aim (Figure 4).[14] The DHB presents pathways that can be taken to achieve this vision.

We need to think more broadly and more boldly about what is possible. Not in a 10-year, over-the-horizon way. But today — what can we achieve in 2023?

No other health enterprise in the world has as much at stake as the MHS in a digital transformation to prepare for our future challenges.
- LTG Telita Crosland[6]

Chapter 2:

Virtual Health Leadership, Organization, and Strategy Does Not Adequately Support Virtual Health Optimization

Initial efforts toward an MHS-wide VH organization and strategy were extremely challenging. As the Services completed transfer of VH assets to the DHA, areas of VH responsibility became better defined and some equilibrium returned. The locus of VH acceleration now rests in the DHA. VH development does continue in the deployed sphere. For example, the Army's Office of the Surgeon General's Virtual Health Directorate and the Army's Future Command's Capability Development Integration Directorate led the development of a Joint Operational VH Capability Based Assessment (CBA) and a Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy Change Recommendation which is in the final stages of a Joint Capabilities Integration and Development System Review.[15]

The DHB is concerned that this lack of integration impacts the potential for a timely and integrated MHS VH capability. It also hinders an MHS-wide prioritization of VH assets toward deployed personnel. Stateside MTFs, military personnel, dependents, and retirees obtain important benefits from VH, but for deployed personnel and the Combatant Commands (CCMD), mission and lives may depend on it.

This chapter describes the state of organizational and strategic development in the DHA. However, DHA is only part of the MHS. The MHS must establish an integrated VH strategy for both deployed and non-deployed settings that meets the MHS's Quadruple Aim and an organizational structure to lead and manage it.

Non-deployed and deployed VH representatives currently come together through the Virtual Health Coordinating Group (VHCG). Chartered on 10 October 2019, the VHCG composes of Defense Health Agency Headquarters offices who each play a key role in planning for, overseeing, supporting, or executing VH care. Since chartering, the VHCG membership has grown to incorporate TRICARE, the VMC, and representatives from the Military Services. It will soon expand to include representatives from the Markets. It is important to note, however, that the VHCG's effectiveness as a mechanism for operational requirements coordination is unclear. The Army's Virtual Health Lead reported the Services had been relegated to information receivers only in this group and, for the past year and a half, have not been asked for input for strategy, policy, or budget priorities, unlike previous years.[15]

Addressing both the separation and integration of the elements of non-deployed and deployed VH care requires a robust and sustained collaboration of medical and relevant non-medical stakeholders. The DAD-HCO cited the following internal and external stakeholders as essential to successful VH planning and implementation[10]:

Internal

- HCO Virtual Medical Centers
- Healthcare Informatics
- Force Structure, Resources, and Assessment Directorate
- Information Operations
- Program Executive Office
- Medical Affairs and the Clinical Communities
- The Services
- Markets

External
- Veterans Affairs
- American Telemedicine Association

The DHB endorses the inclusion of non-medical personnel who can address implementation challenges, e.g., clinician disincentive due to lack of Relative Value Unit (RVU) credits for VH encounters. In addition, the DHB recommends adding the Joint Staff Surgeon and possibly a Joint Operations Medical Information Services representative to provide the Combatant Commander (CCDR) and deployed IT perspectives.

Current Defense Health Agency Governance, Leadership, and Organization

Defined and assigned in 2020, DHA governance and leadership includes leaders from across the DHA, including the Director, the Assistant Director for Healthcare Administration, the DAD-HCO, and the Assistant Director for Support. These leaders address questions including but not limited to: What do stakeholders need? What policies and procedures must be implemented to deliver VH? How are resources allocated? What must a solution be able to do? What is needed to provide combat support functions? Who is responsible and accountable for oversight and execution?

The DHA's Healthcare Optimization Directorate, which falls under HCO, oversees VH. A Healthcare Optimization Directorate component, the VH Branch, works to integrate VH into the overall health care delivery model. The Branch's VH Clinical Integration Office engages in policy writing, solution development, and interagency VH, and is charged with:

> *"…functional leadership, planning, and clinical guidance for Military Health System enterprise virtual health (telehealth) efforts. VH [Clinical Integration Office] works closely with the Virtual Medical Center[s] and the virtual health programs across the military services, markets and at major military treatment facilities worldwide to enable quality, consistent delivery of virtual health care to military service members, retirees, and their families."*[16]

As discussed in Chapter 1, over the past several years DHA integrated three formerly Service-led VMCs. The VMCs, particularly the VMC at BAMC, exercised leadership functions before the integration. Clarification of and integration of leadership functions with the DHA VH office is ongoing. Including entities active in VH but not part of the organizational structure, such as the Telehealth and Advanced Technology Research Center (now in the DHA's Research Directorate), may prove beneficial in understanding the entirety of VH in the MHS. LTG Crosland assumed leadership of the DHA in January 2023 and prioritized VH as a key area for the DHA.

Strategic Guidance for Virtual Health

Various channels in the MHS provided strategic guidance for VH. An Integrated Product Team consisting of collaborating DHA and Service representatives developed an initial MHS VH strategy in 2018. It was an initial attempt toward an MHS-wide VH strategy. In 2021 the DHA VH Strategy for FYs

2021 – 2026 replaced the 2018 strategy.[11] The 2021 Strategy integrates VH into the DHA Digital Patient Engagement Strategy (DPES). The DPES integrates virtual health, mobile health, and personal health record technologies to optimize care delivered in MTFs. It specifically addresses VH in the DC network and was developed exclusively by DHA personnel.

The DHB received two additional briefings addressing VH strategy, one by the DHA VH office and the other by the VMC in San Antonio. DHA VH lists four areas of strategic focus that are largely compatible with the DPES:

- high-volume, high-risk, or high-cost care to maximize cost reduction
- reduction in private sector cost
- operational need, and
- reduction in unnecessary health care utilization.

The VMC in San Antonio defines 17 Lines of Effort (LOEs) (Appendix F) for VH services provided in the non-deployed and deployed environments. There is some overlap between the LOEs and the DPES; the gap reflects the fact that the VMC exercised leadership functions separate from DHA VH when it was still part of the Army. DHA must achieve greater organizational and strategic alignment to optimize VH.

Virtual Health Strategy for Fiscal Years 2021- 2026

The MHS VH strategy puts forth impressive ideas and specifies actions that will enable VH.[11] However, the DHB was not able to learn anything about the status of enabling actions or specific, measurable goals and process and outcome metrics that would make the strategy anything other than notional at this point.

Excerpts from the Military Health System Virtual Health Strategy[11]

The VH Strategy goals are to safely maximize patient convenience, improve quality, outcomes, and efficiently utilize resources. (p.11)

The MHS VH Strategy will effectively utilize resources by matching a geographically separate supply of care to patient demand; create consultative and mentoring platforms to connect health care providers in support of a ready medical force; and enable direct support by specialists during complex care processes. (p.11)

DHA will use the full spectrum of VH technologies and clinical processes to support the DHA Director's LOE: deliver great health outcomes, support a ready medical force, enhance beneficiary satisfaction, and ensure fulfilled staff. (pg.12)

A key component of this Strategy is to expand VH support across all skill levels and care settings, in support of medical battlefields operating systems, and within all level of the MHS. The VH Strategy will implement lessons learned from the civilian sector to enhance DoD VH capabilities. It promotes mission success by investment in both technological and human capital, and it places the MHS in an excellent position for future growth by establish lines of accountabilities in the program structure. (p.16)

Enabling Actions from the Military Health System Virtual Health Strategy[11]

The DHA will prioritize, fund, and deliver VH capabilities across both direct and private sector care. Clinical leaders - informed by consultation with the respective Clinical Communities - will determine overarching VH clinical requirements, which will guide development and acquisition of enterprise technology solutions. (p.17)

Consistent with care delivered in person, the VH care process will include a series of standardized workflows integrated into the EHR based on best practices to ensure the best outcomes. (p.11)

VH solutions will be implemented in phases, with the goal of delvering capabilities most useful to the field and beneficiaries. DHA is currently completing a Capabilities-Based Assessment (CBA) for garrison/generational VH and the Services are working on a CBA for operational VH. Going forward, DHA will need to coordinate these efforts with AD-CS/Operations, Plans, and Requirements. (p.17)

The rapidly changing operational and technological environment requires the development of this strategy as well as execution of the strategy through a VH CONOPs planned for early Fiscal Year 2021. VH governance, execution, measures of effectiveness, outcomes, performance, and other respnsibilities will be forthcoming. (p. 17)

DHA will develop three- to five- year plans for each Initiative and develop Measures of Effectiveness that will be published in future annual reviews of the MHS VH Strategy. (p.17)

Prioritization of VH efforts should be a significant goal of DHA VH. Historically, prioritization of initiatives "change as leadership changes".[17] DHA designated four urgent priorities, which include teleradiology.[17] The Joint Staff Surgeon identified a need to get remote imaging capability closer to the front lines.[18] Currently, DHA VH strategy does not appear to prioritize or allocate enough resources to support development of teleradiology.

Strategic Guidance for Integrating Virtual Health into Combat Support

DHA VH's success in providing combat support depends upon leadership's ability to integrate the mission and priorities of CCMDs, which often differ from the DHA: operational success versus health care delivery. CCDRs must manage these competing priorities; VH is often a lower priority subject to reallocation of resources (e.g., bandwidth) to other objectives. The opportunity cost of not using VH in deployed environments (i.e., the number of medics who are not killed because they do not have to be at the front line) is significant. "VH enables delivery of good care while preserving medical assets, particularly that of high demand-low density medical personnel."[18]

VH is a powerful alternative to Medical Evacuation (MEDEVAC) for managing mission-compromising disease and non-battle injuries (DNBI) in deployed environments. DNBI are "all illnesses and injuries not resulting from hostile action or terrorist activity or caused by conflict."[2] In a 2018 pilot study, asynchronous VH in Iraq and Syria led to a reduction in MEDEVACs by nearly 60%.[19] Reducing MEDEVACs significantly decreases monetary costs and the cost of replacement personnel.[19] VH treatment of medical conditions in theater through voice and email communications as opposed to MEDEVAC has allowed an estimated cost avoidance of $14.1 million over a 5-year period.[20] For

example, just 112 synchronous video VH visits avoided 336 lost duty days by avoiding the need for patient movement.[20] With approximately 80% of MEDEVACs due to DNBI, the Joint Staff Surgeon advocates for more VH treatment options.[10, 18]

> "*Mental Health, which is highly amenable to VH treatment, is the number one DNBI diagnosis. Other likely candidates for operational VH include dental care, which was at times the number one MEDEVAC diagnosis in Afghanistan, followed by dermatology, ophthalmology, and musculoskeletal injuries. The latter are harder to manage through VH but not impossible. Good equipment and training are key to realizing these benefits.*"[18]

The DHB adds that transformational change also requires growing DHA's combat support mission in VH. This includes highlighting operational VH priorities, proving value to the CCMDs, enabling VH in the deployed environment, and establishing a firm and enduring agreement with CCDRs and operational VH SMEs and leaders. DHA is currently completing a CBA for non-deployed VH, and the Services are working on a CBA for operational VH.[10] Going forward, DHA will need to coordinate these efforts with relevant parties. The people, process, and technology factors discussed in the following chapter are equally important to accelerating VH growth across the MHS.

Opportunities to Learn from the Virtual Health Strategies of Other Health Systems

Like other civilian and federal health care systems, the MHS expects VH services to improve access to care, reduce health care costs, and improve the efficiency and effectiveness of the health care system. There are elements of other VH strategy frameworks that are less evident in the MHS VH strategy:

- equity for VH users with different needs,
- integration of VH as a research priority,
- focus on clinician and patient needs and satisfaction.[9,21,22,23]

The MHS does not exist apart from the U.S. health care system. "We're part of it. Our future it dependent on understanding that system. Partnering where it makes sense. And sustaining our own capacity where we must." - LTG Telita Crosland[1]

Of note, DoD has a unique relationship with the Department of Veterans Affairs (VA), its federal partner. Over the past few years, the VA's vision, strategic plan, and effective deployment of VH practices and measures (Chapter 4) has led to its recognition as a leader in VH. In the National Defense Authoriziation Act (NDAA) FY2020, Congress endorsed the DoD/VA cooperation as part of DHA's VH effort.[24] DoD and VA VH representatives have been meeting monthly under the auspices of the DoD/VA Health Executive Council Telehealth Workgroup for over a decade but there has not been significant interagency progress, a likely consequence of fragmented MHS VH governance and organizational structure.

DAD-HCO endorsed the potential benefits of a shared federal vision for VH, developed by DoD and VA together. However, the DAD-HCO stressed that DoD-specific patient and mission needs must drive DHA's progress.[10] The DAD-HCO also emphasized the need for DoD to develop its own system and to standardize before working with the VA.[10]

The DHB concluded that the DoD could learn much from the VA on the way to a standardized, integrated system capable of realizing a shared VH vision. See Figure 5 for important information regarding VH in the VA. As noted in the 2023 National Academy of Sciences, Engineering, and Medicine report, Achieving Whole Health – A New Approach for Veterans and the Nation[25]:

> *The VA has led numerous transformations in health care delivery in the United States. These include: (1) implementing one of the first integrated electronic medical records in the country; (2) becoming an industry leader in patient safety research and practices; (3) developing and implementing telehealth practices; (4) developing innovative primary care and preventive practices; and (5) championing patient-centered approaches to care, among many others.*

The DHB recommends the Congressionally mandated Health Executive Council Telehealth Workgroup identify lessons learned from the VA and accelerate VH deployment in the MHS.

Figure 5. Virtual Health in the Department of Veterans Affairs[22,23]

Organization:
Each Veteran Integrated Services Network has a telehealth director

Four Goals of Virtual Health (VH):
- *Accessibility*
- *Capacity*
- *Quality*
- *Clinician Experience*

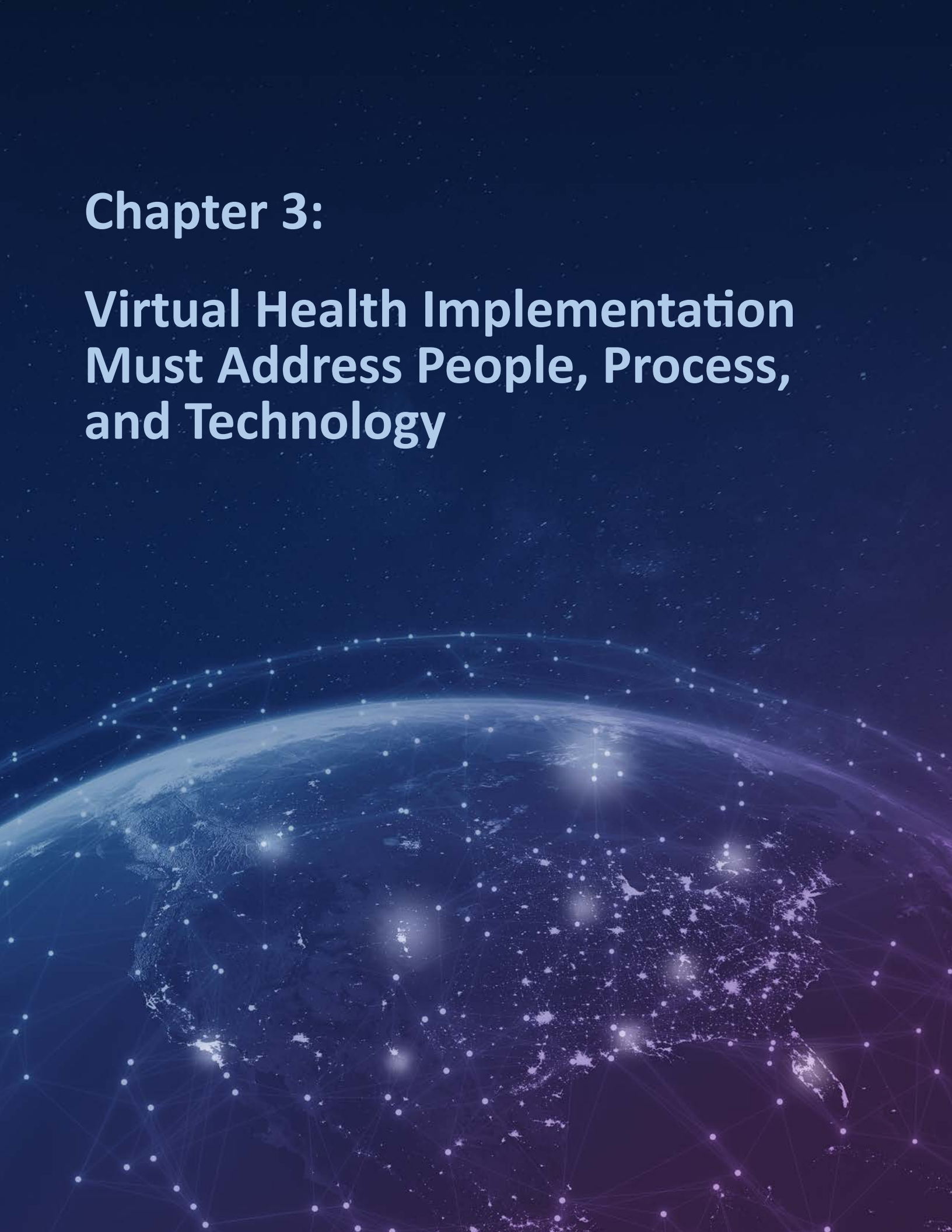
VH Modalities:
- *Clinical Video*
- *Store and Forward*
- *Remote Patient Monitoring - Home Telehealth*
- *VA Video Connect*

VH Usage:
- *Close to 20% of all veterans use/have used telehealth*
- *85% of specialty care has been enabled as telehealth: "I can see my specialist no matter where he/she is."*
- *Video is now the preferred modality among those vets who have used it*
- *The threshold for providing telehealth is one patient who would benefit - the veteran gets to choose*

The MHS must also establish an integrated VH strategy for both deployed and non-deployed settings that meets the MHS's Quadruple Aim and an organizational structure to lead and manage it. DHA VH strategy must support interoperability among the Services and enable Service-specific requirements where necessary. DHA VH should also identify high-impact, feasible priority areas that are amenable to VH interventions to deploy at scale. It is vital to prioritize initiatives on a multi-year plan. Finally, DHA VH should establish a strong channel of communication and collaboration with the Services' VH programs.

Chapter 3:

Virtual Health Implementation Must Address People, Process, and Technology



The MHS uses VH in three ways: patient-to-clinician care and services, clinician-to-clinician consultations, and complex, real-time patient monitoring that can be synchronous and asynchronous.[26] Patient-to-clinician VH enables health care evaluation and treatment to be administered directly to a patient; clinician-to-clinician VH allows medical and health care personnel to consult with each other about health care cases and questions; and complex, real-time monitoring supports periodic patient assessment outside of formal evaluation or treatment appointments in a variety of settings. See Table 1 for examples of MHS applications across these three modalities.

Table 1. Military Health System Applications Across Three Modalities[26, 27]

Patient-to-Clinician Virtual Health Applications	Clinician-to-Clinician Virtual Health Applications	Complex, Real-Time Monitoring Applications
Tele-behavioral Health (TBH) hub allows for easier coordination of virtual behavioral health treatment. *Virtually Integrated Patient Readiness and Remote Care Clinic (VIPRR)* provides virtual readiness exams for active duty personnel, including Personal Health Assessments. *Asynchronous patient-to-clinician interfaces* include appointing, e-visits, health record information and messaging services across both legacy and MHS GENESIS patient portals.	*Mobile Medic* trains enlisted clinical staff to conduct visits under the authority of a clinician in garrison and in training environments to increase their skills for operational environments. *Advanced Virtual Support for Operational Forces System (ADVISOR)* is a synchronous hotline between operational environments and experts in military hospitals in the U.S. ADVISOR supports 13 specialties. Critical care and infectious disease were added during the COVID-19 pandemic. *Global Teleconsultation Portal (GTP)* provides asynchronous clinical guidance and support within 24-72 hours to clinicians in 90 specialties via collaborative messaging.	*Tele-critical care (TCC)* is the 24/7 monitoring of critically ill patients from a distance via digital health technology and electronic communication. *Remote Health Monitoring (RHM)* is the use of digital technology to track patient health indices outside of medical appointments and transmit the data to a care team.

COVID-19: coronavirus; MHS GENESIS: Military Health System electronic health record system

For more than three decades, healthcare personnel in the MHS have used VH to provide patient care in hospitals and clinics within non-deployed and deployed environments, in patient transport vehicles, naval vessels, aircraft, and on the battlefield.[29] The application of VH in these settings occurred in "pockets" rather than across the MHS because of the variation in 'system-ness' across DoD's worldwide health care enterprise.

Implementation Challenges

VH is described as a powerful but frustrating tool for clinicians and patients; some practitioners see it as an additional, uncompensated burden to be avoided.[10,20,28] Leaders emphasize that VH must be

helpful, easy to use, and must add value to a health encounter.[10,18] The following sections present examples of people, process, and technological factors that enable or inhibit VH success in the MHS. The case scenarios in this chapter highlight some of the implementation challenges the DHB learned about during its year-long review.

Virtual Health is not a win if it makes your life harder or you don't know about it.
- COL Robert Cornfeld[28]

People

The MHS – DHA and the Services – is at a crucial juncture with VH. Years of progress have been lost because of challenges that accompanied the DHA's creation and assumption of MTF administrative responsibilities. The COVID-19 pandemic catalyzed the MHS – like all major health systems – to move past some barriers to provide needed care virtually. The challenge now is to solidify these gains, systematically address friction points, and address the organizational divide between the non-deployed and deployed environments.

Bridging an Organizational Divide between the Defense Health Agency and the Services

The viability of VH within the MHS depends on effective connections across time, space, and areas of responsibility. Currently, however, there is a tension and lack of clarity whereby the DHA handles non-deployed care (Figure 3) while the Services manage readiness to deploy and sustain VH. For example, the DHA and the Services collaborated on several versions of the MHS VH Strategic Plan in the newly formed MHS VH Working Group.[11,26] Since policy formally assigned DHA responsibility for VH, the Services have been in "receiving mode" only. In another example, the Army is completing a Capabilities Based Assessment (CBA) for operational VH. The latest version of the MHS VH Strategy calls for collaboration between DHA and the Services to help realize needed VH capabilities. The type and extent of collaboration included in the Army's CBA is not clear. The VH community must find a way to work together to bridge this organizational divide and use best practices from entities both inside and outside the organization to apply enterprise-wide.

Improving User Experience is Essential for Virtual Health Adoption

Care teams and patients describe situations that require improvements to rebuild and maintain confidence in VH and technological solutions currently in use. Improving the user experience by solving implementation challenges is crucial to restoring user trust in VH capabilities.[30]

Case Scenario 1
Col Rogers is about to embark upon a Permanent Change of Station (PCS) to Elmendorf Air Force Base in Alaska. He is relieved that he will be able to continue treatment with his current psychologist, Dr. Thomas, via virtual health. Due to bandwidth limitations, he must go to the MTF for his VH session. He does not mind, until he realizes that MTF staff haven't been trained to operate MHS Video Connect from the patient side. They muddle through and he is able to see Dr. Thomas for 20 minutes before time is up. The next time Col Rogers arrives for his appointment, no room or equipment are available. The third time, the video keeps freezing. Out of frustration, Col Rogers decides VH is not worth it, but he does not want to start over with a new clinician. He drops out of treatment.

Case Scenario 2
Dr. Smith arrives at an MTF for a clinic with a mix of VH and face to face appointments. His first patient is a virtual one. He arrives at his assigned examination room only to find that the workstation is not equipped with a camera. He scrambles to find another room and starts the appointment 10 minutes late.

Teams, Training, Uptake, and Sustainment

Practitioners can provide virtual care in DHA if: (1) it is clinically appropriate for virtual delivery; and (2) the patient agrees to virtual care.[10] However, many clinicians, staff, and schedulers are "VH naïve," which limits DHA's ability to implement VH.[28] These factors make it more difficult to address implementation challenges. Yet solving implementation challenges are crucial to restoring user trust in VH capabilities.

Implementation of VH needs to account for the following: (1) successful virtual encounters depend on a team-based approach that includes schedulers, presenters, clinicians, telehealth and digital navigators, and other support staff; (2) all team members require sufficient training to execute a VH visit, initiate and troubleshoot remote monitoring and care at home care options; and (3) incentives and requirements are needed to foster uptake and sustained use of VH by clinicians and patients.

You have to make it easy for everyone involved to move to virtual health – clinicians, presenters, schedulers – everyone. - COL Robert Cornfeld[28]

DHA leadership endorsed a team-based implementation approach and cited practices woven into VH at Kaiser Permanente as an inspiration. These include 'behind the scenes' nurse case management – done to an extent in the MHS – and co-management of patients through 1:1 primary care/specialty care partnerships. Much needs to be done to create and sustain viable VH teams. However, "DHA is not as good at training, coaching, sustaining and leading to make change happen."[10]

Initiatives designed to standardize and promote VH training in the MHS have taken place over the past five years. These include training provided by DHA Connected Health to the USUHS Graduate School of Nursing, and an inaugural telemedicine training course developed for the USUHS School of Medicine's post-clerkship Bench to Bedside and Beyond.[31] Looking ahead, training across all roles in the VH encounter needs to be universal. Also, training staff to specific roles is a system enabler. For example, accurate scheduling and coding are necessary to ensure encounters are recorded correctly in the EHR and credit is ascribed to clinicians.

Incentives and requirements are needed to facilitate VH use. Organizations in the forefront of VH adoption, such as the VA and Kaiser Permanente, endorse universal use of VH to foster uptake and sustainment of virtual care by clinicians.[10] All clinicians at VA must execute at least one VH encounter to increase familiarity; all Kaiser Permanente clinicians see patients virtually.[10]

Staffing is tough at the MTFs – if you don't make it easy, it's hard to get it done. Give everyone an account, ensure the conditions to see patients by VH - then make using VH a condition of employment. - COL Robert Cornfeld[28]

DHA stakeholders support incentivizing or requiring clinicians to conduct "just one virtual visit to increase acceptance of VH as an essential tool."[28] An 'everyone does one' approach has the added benefit of clarifying process breakdowns and friction points in VH implementation. Resolving friction points in implementation is essential to encouraging and maintaining strong adoption of synchronous and asynchronous clinician-to-clinician, clinician-to-patient and complex, real-time monitoring modalities.

DHA policy encourages at least 20% of visits to be virtual, however not all clinicians are aware of this policy.[10] Effective implementation requires a well-developed communication strategy to inform both clinicians and patients about all VH options. The DAD-HCO cited Kaiser Permanente's strategy to ensure patients know what is available and to encourage it early and often.[10] The DAD-HCO emphasized that communicating to patients the VH capabilities available to them in the MHS will help advance adoption.[10]

Processes

VH on the non-deployed side has evolved toward greater standardization in the last several years. DHA stakeholders have written policies and instructions, engaged in requirements identification, addressed Congressional interest in VH, and ramped up virtual care in response to the COVID-19 pandemic. Standardization accelerated when policy formally assigned DHA responsibility for and authority over VH in 2021.[10]

DHA is currently integrating VH into care delivery to increase access and meet patient needs by, among other things, acquiring industry-standard capabilities, integrating these into a single EHR, and standardizing processes and workflows.[10] DHA is issuing guidance establishing fundamental processes to optimize capacity to meet patient needs, for example, requiring facilities (Markets and MTFs) to plan expected number of appointments for each full-time equivalent employee, recommending at least 20 percent of appointments to be virtual (telephone or MHS VC), and using clinician-to-clinician consultation, traveling specialists, and VH capabilities to reach beyond a 60-minute drive-time standard.[10] Integration and processes are reported to be in various stages of implementation. However, staff reported a lack of training, bandwidth, equipment, IT support, and privacy in response to results of surveys regarding the VH surge during the COVID-19 pandemic.[26] One study surveying Military BH staff at 10 MTFs found they faced challenges as described and concern with treating complex cases, but found VH useful for SMs living far from an MTF.[32]

Standardization and Integration Are Moving in the Right Direction

DHA is incorporating VH into its "Standardize, Optimize, Integrate" approach to care in the non-deployed environments. Specifically, VH will be added as a mode of care available through the Integrated Referral Management and Appointing Center. Staff make appointments based on clinician referrals and use an algorithm that incorporates data from specialty locations on appointment availability, clinic location, and recommended type of appointment to appropriately schedule specialty referrals. Appointments may include in-person, virtual, tele-consultation, or care that requires the patient or specialist to travel to a location depending on the clinical need. New guidance aims to make virtual appointments available and consistent at all MTFs in primary care and in specialty care when possible, and to establish workflow protocols by specialty and by condition for conditions deemed VH amenable by the DHA Clinical Communities.[10] A similar structure can promote appropriate patient enrollment in patient remote monitoring and care-at-home options based on pre-defined enrollment criteria. In addition to making VH available, DHA can ensure VH use by requiring proactive standardized processes that are user-friendly. The VHA, Kaiser Permanente, and the University of California Health System, noted by a DHB member, use a similar a strategy.

Case Scenario 3
A local clinic uses a "Virtual First" strategy to increase VH use and ensure appropriate appointment type. With a proactive, standardized approach, clinic staff ask patients their preference for a virtual or in-person visit for each appointment. If the patient prefers a virtual visit and the visit type is amenable to virtual care according to a pre-agreed upon clinical algorithm, a virtual visit is scheduled. If the visit type does not fit the algorithm's criteria for a virtual visit, the system prompts the scheduler to confirm with a clinician whether a virtual visit is appropriate for that appointment.

Medical Privileging

Historically, the MTF Commander had privileging authority over any MHS clinician practicing in that facility. Clinicians practicing via VH were required to be privileged at both the clinician and patient sides of the encounter. Privileging VH clinicians at each practice site was untenable and negated much of the convenience and benefit of virtual treatment. An initial solution allowed Commanders at the patient's facility to accept the privileging decision of the Commander at the clinician's facility ('privileging by proxy'). More recently, the Virtual Medical Center in San Antonio has embraced the mission of centralizing and streamlining VH privileging. The DHB recommends that all clinicians in the MHS should have privileges to provide care to beneficiaries everywhere.

Case Scenario 4
Dr. Windham has been providing tele-behavioral health since the COVID-19 pandemic began. During the pandemic, his patients were registered at the local area MTF where he was credentialed and privileged. Dr. Windham was recently asked to expand his clinic to several other MTFs. He readily agreed, knowing he could call the Virtual Medical Center in San Antonio to get privileged across multiple MTFs.

Workflow Accounting

DHA must fix the burden of uncompensated work. This requires appropriate coding and accounting processes to assign relative value units (RVUs) to the evaluation and management codes of VH encounters. Tracking and crediting VH encounters simply and seamlessly, as in-person visits are, is essential to VH adoption. This is particularly important given COVID-era RVU parity in workload accounting for face-to-face and virtual visits. Despite widespread use of VH during the pandemic, in-person visits are still what counts in terms of expected clinical workload.

Case Scenario 5
Dr. Ryan, a pediatrician at a small MTF, asked the officer in charge how he might incorporate VH care into his practice. He explained that VH would make the lives of his patients and their families easier and would decrease late arrivals and no-shows. The officer replied that Dr. Ryan should not make any extra effort to schedule VH appointments as those visits do not count toward productivity and access standards.

Workflow Guidance

DHA must act on new guidance that requires workflows to be established for VH amenable conditions. These should include patient-to-clinician, clinician-to-clinician, and complex, real-time monitoring modalities. The Remote Health Monitoring (RHM) part of the latter modality is less mature from a use case perspective than patient-to-clinician and clinician-to-clinician applications. DHA may benefit from reviewing use cases identified in other health systems and including high-relevance opportunities for MHS beneficiaries, such as behavioral health and chronic condition management.

Guidance on Virtual Health

The DHB learned that guidance governing VH use among different parts of the MHS, e.g., non-deployed to deployed or within the contiental U.S. (CONUS), is lacking. Enabling agreements and policy remain unclear. Current provision of VH care from CONUS to outside the continental U.S. (OCONUS) varies, seemingly in accordance with local practice. Some CONUS health care personnel are providing care to OCONUS beneficiaries, while others are told they cannot offer care to their patients downrange in the absence of policies and agreements.

Case Scenario 6
SGT Barnes is a patient at a large MTF and has a good relationship with a staff psychologist who has helped him work through stressors related to his career in Special Operations. SGT Barnes will deploy soon and would like to maintain regular appointments during his mission OCONUS. Staff at the MTF are unsure if this will be possible with current capabilities due to unclear policies for VH visits in operational environments. Unable to obtain an answer from his supervisor, the staff psychologist contacts various DHA leaders and other institutional information sources – including the DHB – for guidance. The staff psychologist learns that guidance governing this type of VH practice does not yet exist. As a work-around, SGT Barnes calls the staff psychologist regularly using a cell phone while deployed. Given his sporadic availability, sometimes these calls are unscheduled and not recorded as appointments.

Improve the Selection of Technology Solutions

DHA has lacked a systematic approach to selecting VH solutions in the past. For instance, stakeholders purchased telemedicine carts before asking users who would operate the equipment about solutions that would best meet their needs.

> ***Case Scenario 7***
> *To accelerate VH use, Army leadership purchased several telemedicine carts and delivered them to primary care and behavioral health offices. Staff did not receive training about how or when to use the cart and there was no coordination with staff about how to incorporate the carts into daily operations. In the face of these difficulties and a lack of institutional incentives to use VH, the carts went mostly unused, taking up space in exam rooms and hallways. They were eventually moved to storage.*

Recently, in the case of MHS Video Connect (VC), clinicians and VH stakeholders first identified functional requirements. After understanding the problem and needs of clinicians, DHA identied the appropriate technological solution: MHS VC. The DHA centrally aquired the capability to promote standardization. However, there was a soft roll-out of MHS VC that has hobbled its adoption and use (see MHS VC section).

Technology

The MHS was once a leader in technological solutions, particularly for the deployed space. However, the MHS has not kept the technological edge for several reasons, including:

- Efforts not prioritized or linked to strategy
- Competition between priorities and needs not managed well
- Deployed and non-deployed care insufficiently integrated
- Duplication of effort when working in silos
- No standardized or structured implementation
- Unresolved network and technological barriers
- Technology solutions do not integrate with other systems (e.g., MHS GENESIS) or the workload credit system
- Addressing connectivity challenges *ad hoc*
- Not proactively providing technology support, but rather acting in response to a problem

As a complex system that includes warfighting responsibilities, the DHA and three separate Services must administer VH across the non-deployed/deployed divide. This divide is the major contributor to the MHS' current technological state. The multiple types of current technology issues call for a high-level, overarching, and sustained programmatic response. An IT solutions center at the MHS level is needed to ensure sufficient integration and standardization of technology infrastructure, coordination, standardization, security requirements, and solutions.

Differing Priorities and Needs

Capability Development and Technical Solutions

Non-deployed priorities and requirements drive capability development and the acquisition of technical solutions. Imaging capabilities, for example, are an area of identified need for the front lines. However, DHA VH strategy does not reflect this. Acquired enterprise technological solutions are not sufficiently helpful or appropriate in deployed environments and must be retrofitted for deployed applications. MHS GENESIS, the MHS' EHR system, is one example. This Enterprise solution can only be used in Roles 3-5, which is further from the frontlines. It does allow encounters to be tracked by Role between 3 and 5 but does not allow the user to designate whether care was in a deployed or non-deployed environment. MHS GENESIS is too "heavy" for use below Role 3.[20] The MHS' previous medical record, the Armed Forces Health Longitudinal Technology Application (AHLTA), had a 'lite' version that deployed personnel used in Roles 2 and 3. It was considered a store-and-forward capability because the AHLTA-lite data was eventually uploaded to AHLTA. No light bandwidth platform for Roles 1-2 is widely available for use in the field but two tools under development by the Air Force Research Laboratory are reported to be nearly 90% complete.[20] The Air Force Special Operations Command currently uses the Battlefield Assisted Trauma Distributed Observation Kit, a related capability, that runs on tactical networks and allows for documentation, monitors multiple patients' vitals wirelessly, autonomously documents patient care, and transmits data throughout the patient's continuum of care.[20]

Mission Priorities

Medicine's designation as a sustainment function rather than a warfighting function puts VH lower on the priority list in the deployed environment than other concerns. As a result, there is broad variation in the available bandwidth Commanders are willing or able to allocate to VH. Medical personnel have, in some circumstances, circumvented limitations and used informal but effective means to accomplish a VH objective on behalf of a patient (Case Scenario 10). These tensions limit the applicability of VH's documented power to decrease evacuations due to DNBI.[20] These tensions are greater in areas that are settings of expeditionary missions, where risk increases and infrastructure is typically limited.

Case Scenario 8
Dr. Miller, a medical officer, often finds that there is insufficient bandwidth for all communications required to provide patient care while deployed. She frequently finds herself out of range and unable to connect to patient records during expeditionary missions. Because of the older equipment she has access to, Dr. Miller must also be conservative with the amount of bandwidth she uses for patient care to accommodate the requirements for other aspects of the operation. As a work-around, Dr. Miller purchases mobile Wi-Fi hotspots from the post exchange. This additional, unsecured bandwidth has been helpful in both emergency and routine situations during the deployment. However, the unsecured bandwidth presents a cybersecurity risk for deployed operations.

Security Needs

A Commander in the Middle East mandated personnel could not wear FitBits – either inside or outside the wire – due to concerns that the signal would alert the enemy and provide a target.

Security is a significant and enduring issue that varies across non-deployed and deployed areas of responsibility. A minimum cybersecurity standard is necessary, but must also balance security with access in low-risk situations, e.g., MTF care. In higher-risk deployment situations, security and access are more difficult to balance. For example, the medical status of deployed ship's crew is critical information in theater and needs to be shared. However, sharing medical status via VH presents privacy and force protection risks. Managing the ever-present risk of adversaries picking up in-theater telecommunication activity is a constant concern.

Cybersecurity training is an important part of VH use in different environments. Training on this topic should address the variable threat level across the spectrum of MHS care and highlight factors that may lead to cybersecurity vulnerabilities in particular environments. These may include non-doctrinal approaches to care, which are more likely in contested environments, and a tendency to be less vigilant in locations with long-standing relationships with the United States.[20]

Sourcing of parts and technology is a related concern. Of note, the DoD issued regulations in January 2023 pursuant to the May 12, 2021 Executive Order on Improving the Nation's Cybersecurity prohibiting the use of telecommunications equipment or services from firms associated with nation-state actors and cybercriminals.[33,34]

Inadequate Information Technology Infrastructure

Network and Technical Barriers

Significant network and technical barriers impede integration within the deployed space and between the deployed and non-deployed arenas. Joint technology efforts like the Joint Operations Medical Information Services have stalled, but new leadership is trying to drive them forward. Additionally, the Joint Service Medical Force lacks "integrated and interoperable voice/data communication and networking between ground troops, aviation, and medical units."[20] It is "unable to provide advanced monitoring and decision support systems to improve injury identification and treatment to conduct remote casualty location, triage, and physiological monitoring to maintain a 100% accuracy standard."[20] Further, the Services have different network backbones and functional reciprocity does not exist across the networks. Each Service has different security requirements; additionally, it is expensive and difficult to provide a capability across all networks. Variable standards across the Services precluding widespread sharing of technologies and non-standardized solutions aggravate an already complex operational situation.

Connectivity Challenges and Innovations

As referenced in the Mission Priorities section, the medicine function will have a significant and enduring competition with operational needs for bandwidth. Older technology is bandwidth-intensive, which limits its utility in forward operating environments. A high-resolution technological breakthrough to compress exchanges like video teleconferencing and store and forward technology to smaller bandwidth is crucial for VH in deployed environments. Newer 5G technology can mitigate some bandwidth challenges without reducing quality. The DoD could benefit from assessing the National Aeronautics and Space Administration's pioneering lower bandwidth video visits involving avatars for Mars missions or the National Science Foundation's telehealth programs at the South Pole. VH on aircraft, ground transport vehicles, ships, and submarines is even more complicated. These vehicles must rely on satellite connections when moving. Submarines present the greatest test for VH – and a strong use case for evidence-based algorithms and store and forward VH. Of course, concerns around adversaries picking up in theater telecommunication activity are ever-present.

A Spirit of Ingenuity

The historically decentralized MHS structure has fostered ingenuity but also resulted in duplication. Instead of going to an existing set of solutions when faced with a problem, different parts of the MHS devise different solutions to address similar problems. This has resulted in non-standardized technology solutions and duplicative and unsustainable VH capabilities. DHA is addressing the former by establishing enterprise technology solutions for patient-to-clinician and clinician-to-clinician virtual care. The following sections will discuss these solutions, like the MHS VC and the Global Teleconsultation Portal (GTP), in more detail.

DHA must also address duplicative VH capabilities. Advanced Virtual Support of Operational Forces (ADVISOR) is one example. ADVISOR is a synchronous and asynchronous emergent telephone consultation support with an easy-to-remember phone number and 24/7/365 availability. It provides a broad range of on-demand urgent and emergent consultation services to operational forces that include critical care, general surgery, hematology, burns, toxicology, and ophthalmology (Appendix J). ADVISOR provides a more formal consultation process for a clinician who might otherwise make an unscheduled call back to someone they trained with for support. However, sustainment is a challenge. The program relies on volunteers for many specialties - specialties for which there are already 24/7/365 on-call clinicians at two or more MTFs. The specialist on the other end of the line is duplicative to the clinicians who are on the receiving end of the GTP and for calls within Market to on-call clinicians. The volunteer model and duplication threaten ADVISOR's sustainability and scalability.

Enterprise Technological Solutions: Important Progress at Risk

The Pacific Asynchronous Telehealth Portal (PATH) exemplifies early military ingenuity (Table 1). The Army developed a way to provide clinician-to-clinician remote consultation earlier than the commercial sector. It was cutting edge when it debuted many years ago. However, the capability has not matured

as rapidly as it has in the private sector. PATH was an early iteration of the clinician-to-clinician GTP. GTP is one of two enterprise technological solutions recently acquired or developed by DHA. The other is the patient-to-clinician MHS VC platform.

Global Teleconsultation Portal (Clinician-to-Clinician)

GTP is primarily OCONUS facing, as were its predecessors, the Pacific Asynchronous Telehealth portal, commonly known as PATH, and the Health Experts Online Portal, known as HELP. It is a technical solution. The VH capability it enables is asynchronous store and forward VH from clinician-to-clinician allowing routine virtual consultation and patient coordination for over 90 subspecialties. All DoD clinicians, including contractors in OCONUS locations, can use it for any patient beneficiary. Response is within 24 hours for 90% of calls with the rest answered within 72 hours.[20] Surgeons and pediatricians initiate half of GTP consultations.[35] GTP, the VH system most used currently by MHS medical personnel, is efficient, user friendly, and achieves the outcome. However, it does not integrate with the subject patient's EHR record, which is necessary for coordination of patient care. Additionally, GTP consultations do not earn workload credit. The DHB recommends DHA acquire enterprise technology solutions and resources appropriate for deployed environments. The DHA must ensure that technology solutions used in the operational environment meet user needs, security requirements and integrate with other major MHS systems.

Military Health System Video Connect (Patient-to-Clinician)

MHS VC is the enterprise-wide video capability. MHS VC replaced other Service-specific platforms and technologies used to conduct VH prior to 2020 (e.g., Adobe Connect, Cisco CMS/Jabber) and other typically consumer-oriented commercial platforms used by MHS clinicians during the COVID-19 pandemic (e.g., Apple FaceTime, Microsoft Skype/Teams, Google Duo). It is platform-agnostic and works on computers, laptops, and mobile devices on civilian and MTF non-classified networks. The software is the same as the Veterans Health Administration Video Connect (VHA VC) platform. It is designed to be distributed system-wide and fully integrated into MHS GENESIS.[35] However, a soft roll-out has hobbled its adoption and use, leaving some clinicians completely unaware of its existence.[28] Those who know about and want it, asked for it initially. Automatic provisioning through MHS GENESIS has been only partially successful. Of 162 Navy pediatricians, 47%, including many using MHS GENESIS, did not have the capability at the end of calendar year 2022.[36] Clinician exposure to a wide variety of technology platforms during the COVID-19 pandemic informed the decision to acquire MHS VC. It is important to acknowledge, however, that patient experience with these platforms was likely quite variable due to the variability in MHS staff familiarity.

Remote Health Monitoring (RHM): An Early Technology Solution

DHA VH is in the beginning stages of market research into RHM technological solutions. However, the use case for RHM does not appear well-defined and clinician input on functional requirements does not appear sufficient.[36] This approach puts DHA at risk of acquiring a technological solution before use

case and requirements are clear, and is reminiscent of the carts acquisition described in the Solution development section.

The Range of Virtual Health Capabilities

The DHB learned of several examples of MHS VH technology solutions and capabilities (Appendices H, I). It is important to note that in these documents and the VH community at large, the word "capability" is used to refer to both technological solutions, e.g., MHS VC, and the application of those tech solutions for a specific purpose, e.g., Tele-behavioral health. Terminology should be standardized for clarity. The use of the term "capability" might be reserved for an application of a tech solution for a specific purpose.

Information Technology Solutions Center

A comprehensive research and development effort ideally coordinated through an IT solutions centered around communications infrastructure, standards, and security concerns particular to military healthcare is essential. It is imperative to aggressively develop standardized, secure, bandwidth-parsimonious, technical-infrastructure-supporting medical use cases across the branches. Clinical protocols, standard operating procedures, and technology standards informed by clinical protocols and enforced across Service branches by a Chief Information Officer are needed. Solutions will need to address the intricacies of deployed vs non-deployed areas of responsibility. Technology will need to reduce the signal footprint yet allow for sufficient bandwidth for tele-radiology, critical care, and remote patient monitoring across tactical and operational needs.

Conclusion

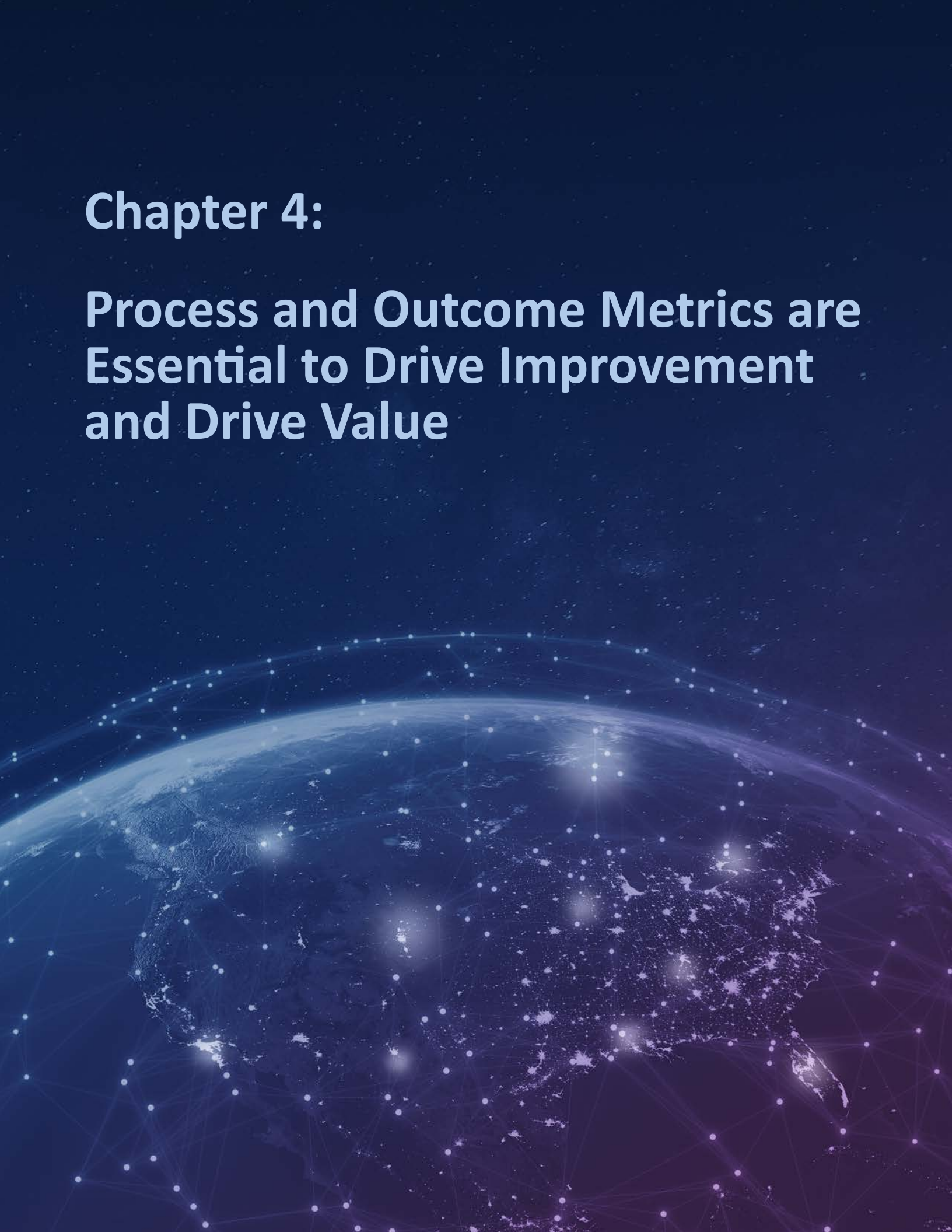
The MHS needs to regain its leading edge in VH to support force protection, retention, and improved clinician and patient experience. The MHS has faced multiple challenges in implementing VH. A clear strategy and implementation plan addressing people, processes, and technology are required. With these in place, the MHS can create an enterprise-wide, unified VH system of care that is usable, reliable, and convenient for beneficiaries and health care teams.

An improved user experience is essential for VH adoption. Engaging users in a team-based approach to training, coupled with incentives and requirements to use VH, can enable greater use of VH. As DHA moves to improve standardization and integration of VH in care delivery, ensuring clinicians have privileges to provide care to beneficiaries, irrespective of location, is essential. Also, DHA needs to fix the burden of uncompensated VH encounters so that VH counts the same as in-person visits. Technology requirements and priorities differ in deployed and non-deployed settings. Security needs vary also. In high-risk deployed situations, sharing medical status via VH presents privacy and force protection risks that require mitigation. Connectivity challenges may occur in deployed settings where bandwidth is allocated to operational rather than medical needs. By implementing solutions that address the people, processes, and technology, the MHS can accelerate adoption and improve patient outcomes.

We need to be leaders in exploring how to care for our people using technology that is available today, and that can be scaled tomorrow. – LTG Crosland[1]

Chapter 4:

Process and Outcome Metrics are Essential to Drive Improvement and Drive Value



Why MHS VH Needs Measures to Achieve the Quadruple Aim

VH is a "force multiplier" that can improve care, decrease costs, and increase readiness in the non-deployed and deployed environments of the MHS. Meaningful process and outcome metrics support achieving the Quadruple Aim and will inform programmatic improvements and evaluate the effectiveness as the Enterprise implements VH strategy.[11,37]

In support of the MHS Quadruple Aim, the main LOEs for VH, discussed in chapter 2 and detailed in Appendix F, support the DHA's four strategic priorities: great outcomes, ready medical force, satisfied beneficiaries, and fulfilled staff.[11,35] The MHS recognizes that VH increases access to "health care for all beneficiaries across time and geography."[11,35] Increasing access to health care services, including access to specialists, through VH technological solutions and capabilities will improve the quality of health care as well. Using VH technological solutions for operational medicine addresses the ready medical force priority. Ideally, VH capabilities will increase patient engagement and satisfaction, support medical personnel with resources to deliver better care, and increase staff satisfaction.[11,35]

DoD should develop specific metrics in order to demonstrate how VH helps the MHS achieve the Quadruple Aim and to sustain effective uses of VH. DoD can organize these as process measures or outcome measures to highlight VH performance improvements. The chosen metrics will need to reflect that the MHS has beneficiaries in both deployed and non-deployed environments.

Virtual Health Measures

Performance improvement depends on knowledge of both process and outcome measures. Outcome measures, in general, establish how a system impacts the goals, or metrics, of an initiative. Process measures highlight intermediate steps within an initiative. As the MHS works to integrate and streamline VH implementation, metrics will help leaders identify areas of success in the MHS and areas in need of improvement.

Current Virtual Health-Specific Measures

The DoD collects some data on VH patient and clinician satisfaction and number and type of VH encounters. However, collection and measurement are inconsistent. For example, the DHA is standardizing VH workflows and modalities and assessing gaps in policy to streamline VH implementation but does not have a measure to track the progress of these efforts.[17] The following subsection provides information about select MHS and DHA VH measures across the three VH modalities.

Current Metrics

The MHS VH program operates in three modalities: patient-to-clinician, clinician-to-clinician, and complex, real-time monitoring.[26] The MHS uses VH applications worldwide including at base hospitals,

field hospitals, in patient transport vehicles, ships, and aircraft, and on the battlefield.[29] These modalities are both synchronous and asynchronous. The current metrics for each are[17,26,35]:

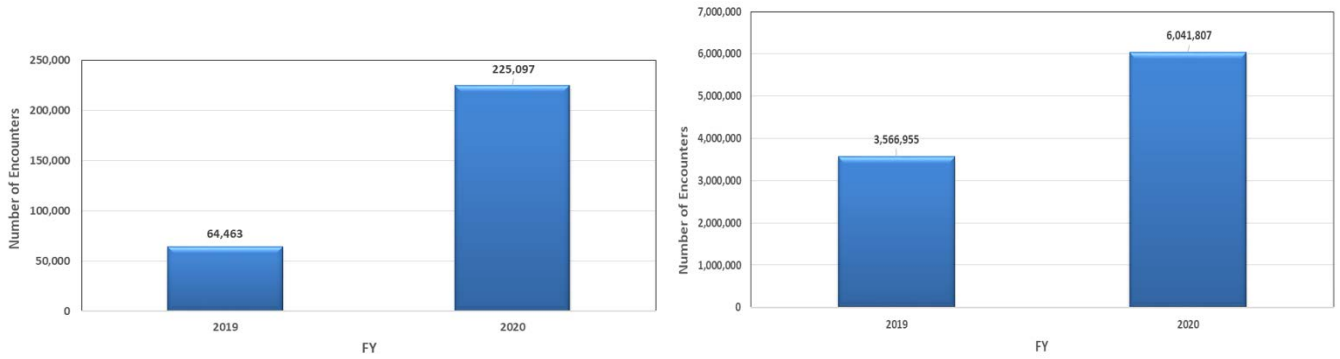
1. Patient-to-clinician:
   - Adoption tracked by number of virtual encounters across DC globally:
   - Number of video visit encounters and number of clinical phone encounters (Figure 7)
   - Number of visits by specialty for video and telephone separately
   - Adoption of asynchronous services
   - Increase in use
   - Percentage of modality for all patient-to-clinician VH

2. Clinician-to-clinician:
   - ADVISOR consultations tracked by number of telephone calls to measure adoption
   - GTP consultations tracked by number of messages

3. Complex, real-time monitoring:
   - TCC measures adoption in the number of MTFs and beds supported
   - RHM – number of patients supported, number of admissions avoided, and cost savings

Though DHA tracks total numbers for the metrics outlined above, the DHB learned there are no process or outcome measures being collected consistently across the Enterprise nor used as part of a coordinated plan for process improvement.

Figure 6. Patient to Clinician Encounters: Video Visits (L) and Clinical Phone Visits (R)[26]



VH Measures that have Limited Impact

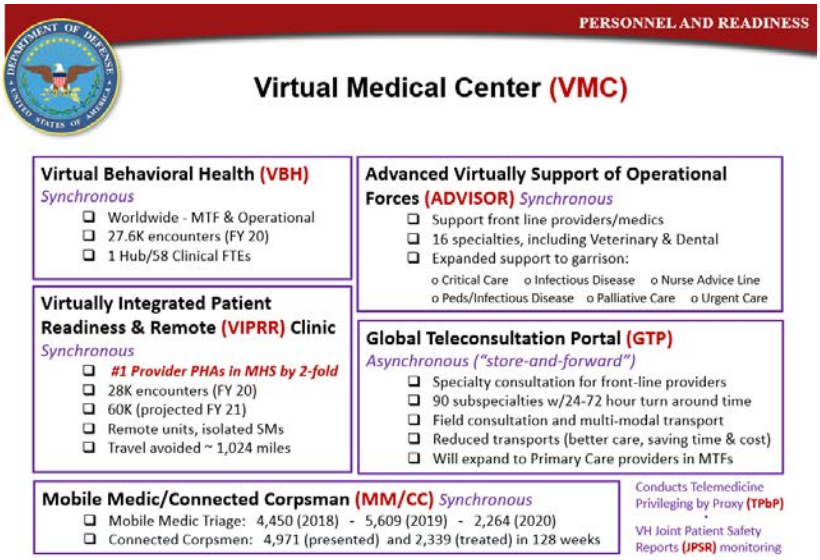
The MHS tracks the number of VH encounters. However, the data is not currently aligned for end user and Enterprise impact. For example, a current dashboard for MHS Video Connect displays total encounters by location. The DAD-HCO explained there is a greater need to track performance metrics and number of in-person appointments averted rather than just the number of VH encounters.[10] This would inform VH's impact on critical metrics such as infrastructure and personnel requirements.[10] An

expert in operational health care delivery also emphasized the need for tools to track VH measures in the operational environment to better meet demand and requirements.[20]

An active-duty VH briefer suggested providing functional staffing models for technical solutions, like MHS VC. For example, flexible clinical scheduling models enable clinics to address to staffing challenges by having flexibility to shift VH visit responsibilities between physician and nursing based on staffing shortages or excesses.[28] The briefer recommended tracking the number of clinicians across the MHS that use VH rather than the number of clinicians trained to use VH in order to better understand VH appointment availability and overall VH usage.

The VMC at BAMC was established in 2018 to leverage virtual technology for patients in both deployed and non-deployed environments. During the COVID-19 pandemic, the VMC integrated various technical solutions and capabilities in a tiered approach and tracked the monthly volume of encounters.[26] For example, according to FY2020 data, 27,600 synchronous Virtual Behavioral Health (VBH) encounters were conducted through the VMC at MTFs and in deployed environments (Figure 7).[17] Additional VBH encounters were conducted in other parts of DHA during the same year. DHA's measurement strategy should ensure that meaningful data is collected and integrated in one place to provide a more complete picture of Enterprise VH capability, uptake, and impact.

Figure 7. Virtual Medical Center Technical Solutions and Capabilities[17]



Other Sources for Measures and Metrics

Two important frameworks to consider come from the American Medical Association (AMA) and the Veterans Health Administration (VHA). The AMA *Return on Health* report, described in more detail later, details six value streams important for measuring VH.[9] The VHA is a large health care organization

providing care to Veterans, which ramped up use of VH faster than the MHS in recent years. The description of their processes and tools can provide areas of improvement for VH measures in the MHS.

American Medical Association Return on Health Framework

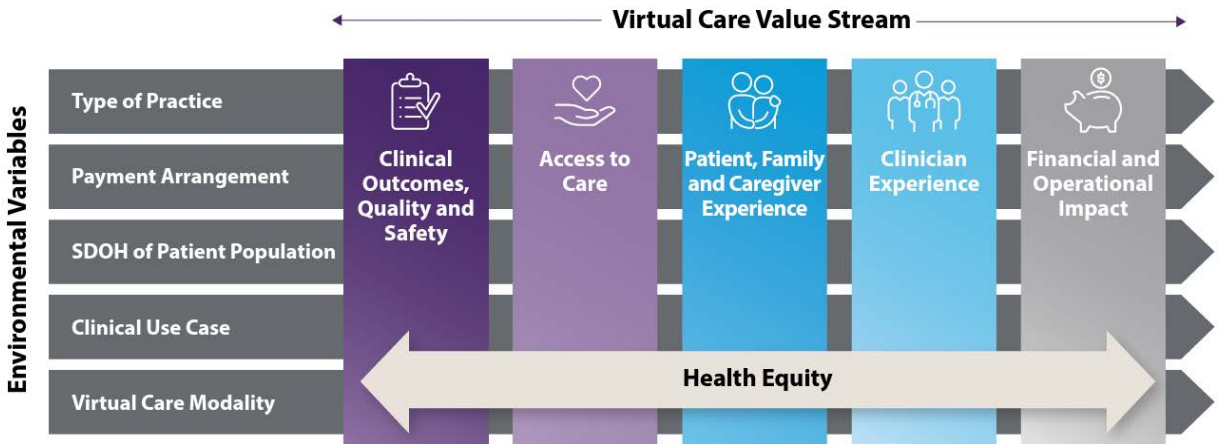
While the MHS mission is unique, an examination of VH-specific measures used in other healthcare organizations can inform measurement decisions made by DHA. The AMA and Manatt® Health Strategies developed *Return on Health: Moving Beyond Dollars and Cents in Realizing the Value of Virtual Care* to provide a framework for measuring the value of virtual care.[9] Each of the six VH Value Streams have examples of process and outcome measures (Appendix F). The value streams are:

- Clinical outcomes, quality, and safety
- Clinician Experience
- Patient, Family and Caregiver Experience
- Access to Care
- Financial and Operational Impact
- Health Equity

The AMA report recommends that health systems should implement metrics that measure the quality of VH care and evaluate cost and quality measures frequently to ensure the metrics reflect the changing VH environment of the organization.[9]

The Return on Health Framework measures the value of virtual care through its six value streams across five environmental variables that affect the value generated in a VH program (Figure 8). One practical example from Virginia Commonwealth University Health (VCU Health) shows the value of VCU Health's implementation of telepsychiatry video visits. As a result of this analysis, VCU Health was able to measure the impact of its telepsychiatry program for patients and clinicians and inform decision-making for the program's future.

Figure 8. Americal Medical Association Return on Health Framework[9]



The AMA report also provides an aid to apply the Return on Health framework to VH programs, including specific guidance for implementing VH patient-clinician, clinician-clinician, and remote patient monitoring.[38,39] These may prove useful to the MHS when establishing enterprise-wide measures.

Veterans Affairs Virtual Health Measures

The VHA, the component of the US Department of Veterans Affairs (VA) that implements the VA healthcare program, is the largest integrated healthcare system in the U.S. with over 9 million Veterans enrolled, over 400,000 healthcare professionals and staff, and over 1,200 health facilities.[40] This system has made significant investment into its VH infrastructure and has a large amount of data on its VH efforts. The VHA's experience developing, implementing, and evaluating VH across the system can inform DHA's efforts. While there are logistical challenges, this large system lends itself to standardization and establishing efficiencies, concepts that can benefit the DHA with its similarly large patient population and geographically dispersed locations. At the most basic level, the VHA tracks numerical metrics such as VH appointments, digital divide consults, and number of Veterans served with VH. For example, the VA delivered over 11.2 million VH appointments with over 9.5 million as video visits to home, over 67,000 Digital Divide consults (VH appointments enabled and subsidized by commercial mobile data carriers), and 2.3 million Veterans who received VH care in FY21.[23]

The VHA measurement of VH efforts goes beyond numerical counts alone; they now invest in research and ongoing quality measures. One area of research is the effect of VH use on other types of health care utilization. VHA research identified that the VHA's Virtual Health Resource Centers (VHRC) do not necessarily increase utilization of VH compared to national data.[41] However, the VHA may have improved VH delivery by increasing efficiencies in training and consultation which may increase adoption and capacity in the system.[41,42]

The VHA also tracks VH quality measures through stakeholder experience surveys.[22] The inclusion of both Veterans and the health care professionals who care for them is a notable best practice of these surveys and helps the VHA improve experiences for all. Areas covered in VH experience surveys include ease/simplicity, efficiency/speed, quality, employee helpfulness, equity/transparency, satisfaction, and confidence/trust. These Veteran and clinician experience data can be shown by care modality. The VHA also collects accessibility measures as part of its efforts to make VH accessible for all stakeholders.

VA has a quality management program for virtual care and assesses standards quarterly using "the Virtual Care Scorecard performance results, conference calls with Veterans Integrated Services Networks (VISNs) Telehealth Program Managers, and a VISN's Community of Practice self-assessment."[23] The VA also tracks Veteran preferences in delivery of care, whether by video, telephone, in-person, or no preference.

While The VHA differs from the MHS in mission, population, and budget, the infrastructure in place for the VHA helps demonstrate the usefulness of VH. The MHS can adopt or adapt the VHA VH measurement infrastructure and tools to inform how to best use VH for both deployed and non-deployed beneficiaries and achieve its four VH strategic priorities: great outcomes, ready medical force, satisfied beneficiaries, and fulfilled staff.

Measurement Challenges and Opportunities Identified by Briefers

Operational Virtual Health

The subcommittee heard from the Joint Staff Surgeon, who provided additional comments and outcome recommendations during a briefing. Some are reflected in the recommendations put forth by the DHB.

Potential benefits of VH in the deployed environment:

- Preserving medical force
- Importance of MH in combat theater
- Decreasing DNBI
- Follow up and compliance rate for care

In combat, VH delivery of MH care is an area of significant benefit as it can preserve medical strength without placing medical personnel at risk and reach more patients. A key factor is to implement strategies to provide as much care in as many locations as possible without losing medical staff. "An example of using VH to preserve the fighting force and the medical force is represented by the potential to return ill and injured to duty more quickly and to reduce the number of medics killed."[18]

DNBIs are another important area to track in deployed environments—types, quantity of each, and how VH can help decrease DNBI. VH is of particular importance for decreasing time to treatment in-theater and for preventative care for SMs to stop DNBI from occurring in the first place. By using VH to decrease DNBI, SMs will be able to stay in the field, thus fulfilling the medically ready force part of the Quadruple Aim.

Potential Savings Associated with Virtual Health

Several analyses from early adopters suggest potential cost savings associated with VH that should be pursued further. Cost savings can include both direct and indirect costs:

- increased access to care that prevents progression of illness to a higher level of severity
- more efficient use of workforce
- reduced costs to patients in less time off work and less spending on transportation
- reduced costs to the MHS with less use of private care network
- Mission Days saved
- reduction in evacuation of deployed SMs
- less payouts due to adverse events attributable to delays in care

DHA has included patient safety reporting as one outcome measure of VH. They are particularly interested in potential delays in treatment that could occur if an in-person appointment is unnecessarily chosen – by the clinician or patient - rather than VH.

"Mission Days" saved – quantified as dollars saved/day - reflects the effectiveness of VH to prevent costly transport or days lost to travel.[28] An analysis of the impact of VH on Mission Days saved during a six-month deployment showed a savings of over 200 Soldier Mission Days saved and avoidance of nearly $90,000 in lost Soldier productivity among the 29 Soldiers in the study.[28] To determine the cost avoidance attributable to VH rather than in-person medical appointments, researchers estimated the average cost of $410 per Soldier per day, based on the average of two previous studies that analyzed the cost of ADSMs.[43,44,45] Mission days saved demonstrated a monetary return on investment benefit of VH through both direct cost and time savings.

A cost analysis of the ADVISOR program found an average cost savings of $80,000 per virtual consultation.[46] The report categorized scenarios according to whether they supported evacuation, delayed evacuation, or did not need evacuation at all due to the consultation support provided by the ADVISOR program.[46]

Another metric associated with VH is the potential savings patients may realize.[7] Enabling more efficient care through VH with access and reach—earlier care, better care—can reduce costs for the patient in the long-term and better health outcomes. Additional patient savings may result from reduced travel time, reduced time away from work, and reduced wait time for appointments which could better impact health leading to fewer appointments in the future.[47] Maj Gen Friedrichs noted that "the savings to the patient and unit should be recognized as an additional value of VH encounters – not having to travel, find parking, etc. are tangible benefits."[18]

Recommended Areas for Measures

Virtual Health will leverage data to identify measures of effectiveness to maximize value for DHA including: quality, readiness, health outcomes, and performance.
- 2021 Strategic Plan Guiding Principle[10]

DNBI have long been a leading cause of injury and medical evacuation of service members (SM) and greatly affects readiness.[48,49,50,51] A DNBI-related VH measure would be welcome in deployed environments—types, quantity of each, and whether VH decreased DNBI or DNBI evacuations. By using VH to decrease DNBI, deployed health care professionals could help more ADSMs stay in the field or on ships.

Treating injuries sustained in the field onsite rather than evacuating troops can reduce the number of lost Mission Days per injury. This translates to savings in the time spent transporting injured ADSMs, the costs associated with medical evacuation (MEDEVAC) to in-person treatment at a higher level of care, and the cost to transport a replacement into theater.

In combat, MH could benefit most from VH, through VBH, as it can preserve medical strength by addressing a large clinical need in a field with limited personnel. VBH can deliver preventive care to ADSMs with access to synchronous and asynchronous clinician- and self-provided care on resilience-building, stress management, and sleep hygiene before escalation. Figure 7 provides information

for synchronous VBH. DoD can design and implement strategies to provide as much care in as many locations as possible without losing limited medical staff to bodily injury or to the medical needs of non-deployed population.

The DHB incorporated many of the concepts from the Joint Staff Surgeon's office and other offices relevant to deployed operational health in its recommendations – not only for those directed at the deployed environment but also for the non-deployed environment. From discussions with other subject matter experts (SMEs), the DHB recommends that VH metrics should:

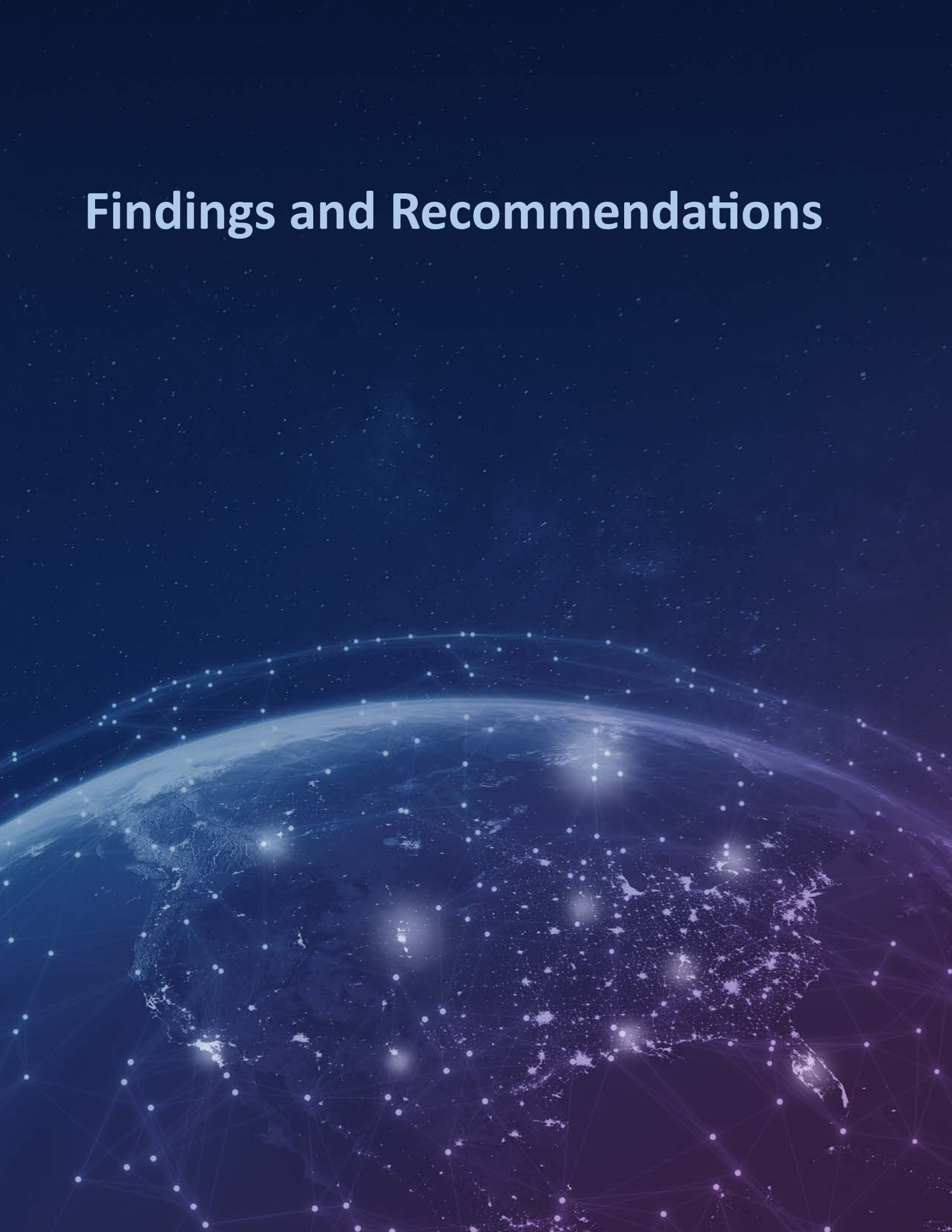
- Measure quality of VH care and impact on outcomes
- Measure user experience from the patient and clinician perspectives
- Measure financial and operational impact, including mission-days saved for deployed users and other time and travel savings for non-deployed users
- Measure impact on equity by asking: to what extent do users have access to equipment and services in all locations?
- Evaluate cost and quality metrics regularly for applicability to the organization's priorities
- Measure success against initial goals, and if goals are not met, conduct root-cause analysis to evaluate why the program did not meet the goals

Conclusions and Way Ahead

The MHS is a unique and large health care organization supporting ADSMs and beneficiaries worldwide. While the MHS will need military specific measures to inform their VH efforts, especially in delivery of VH care to the deployed environment, the MHS can and should learn and borrow from other health care systems with more advanced VH measures. Numbers alone do not help the MHS advance VH at the pace our system, clinicians, CCDRs, and patients demand. The DHA should review and select meaningful process and outcomes measures that align with the DHA VH FY 2021-2026 Strategic Plan.[10] Measures consistently collected across the Enterprise and used for performance improvement will enable the MHS to regain lost ground and re-establish a leadership position in VH.

Our vision of the future is one where physicians, nurses and medics and corpsmen are liberated by technology rather than burdened by it; a vision where the burden of monitoring and entering data for providers and patients is offloaded on devices and services that are connected, interoperable, and…smart. We are going to meet the patients where they are. Anytime. Anywhere. Always.
- LTG Telita Crosland[1]

Findings and Recommendations



The DHB reports the following findings and makes their recommendations in response to the tasking. The DoD should prioritize Recommendations 4 and 19.

Finding 1: The MHS was once on the leading edge of technologically enabled healthcare. Siloed efforts are hampering progress.

> **Recommendation 1:** The MHS must establish a state-of-the-art VH system focused on the entire community of users, including Active-duty, Reserve, and Guard Service members, Line Commanders, family members, retirees, and health professionals.

Finding 2: Successful MHS VH relies on integration of shared resources to succeed. There is a lack of agreement and coordination among the DHA and the Services.

> **Recommendation 2:** MHS leadership should direct DHA and the Service Leads to integrate VH care into both deployed and non-deployed settings with clear clinical priorities and populations.

Finding 3: Beneficiary access to VH in the Purchased Care network is not consistent.

> **Recommendation 3:** DHA should recommend that the next TRICARE contracts require clinically appropriate and interoperable VH care in the Purchased Care network to optimize beneficiary care.

Finding 4: The MHS lacks a unified VH strategy for both the deployed and non-deployed settings and an organizational structure for leading and managing it.

> **Recommendation 4:** The MHS must establish an integrated VH strategy for both deployed and non-deployed settings that meets the MHS's Quadruple Aim, establishes an organizational structure to lead and manage it, and advances equity.

Finding 5: DHA VH responsibilities to Service-led VH programs are not well defined. A robust communication channel between the DHA and the Services is lacking.

> **Recommendation 5:** DHA VH strategy must support health information interoperability among the Services and external health providers where applicable and enable Service-specific requirements where necessary.
>
> DHA VH should establish a strong channel of communication and collaboration with the Services' VH programs.

Finding 6: A concise list of high-impact, feasible priority areas amenable to VH interventions at scale has not been identified.

> **Recommendation 6:** DHA VH should identify high-impact, feasible priority areas that are amenable to VH interventions to deploy at scale. It is vital to prioritize initiatives on a multi-year plan, (e.g.,

mental health, DNBI, teleradiology, medical needs of beneficiaries overseas, and health disparities) that impact readiness.

Finding 7: Current VH capabilities significantly lag leading health care systems. Lessons learned from other health care systems, especially the Department of Veterans Affairs (VA), have not been effectively utilized.

Recommendation 7: Optimize the Congressionally mandated DoD/VA Health Executive Council Telehealth Workgroup to identify lessons learned from VA to accelerate VH deployment in the MHS.

Finding 8: DHA is a member of the American Telemedicine Association. DHA has not used the ATA's self-assessment tool to gauge its use of VH in health care delivery.

Recommendation 8: DHA should complete the ATA or other organizational self-assessment tool and repeat self-assessments regularly to identify friction points across user levels, clinical settings or geographic areas, and technology/equipment usage.

Finding 9: DHA VH does not have an organization-wide systematic implementation and sustainment plan for VH programs and initiatives, e.g., MHS Video Connect (VC).

Recommendation 9: DHA VH must develop an implementation and sustainment plan and timetable which includes the necessary tools, IT infrastructure, and administrative support. VH leadership, accountability, and transparent continuous improvement efforts are essential.

Finding 10: DHA VH does not have a comprehensive communication plan, which is essential to successful implementation.

Recommendation 10: DHA VH must work with DHA Communications to develop a population-appropriate communication plan for clinicians and patients that describes the tools, IT infrastructure, administrative support, training, and timeline for implementation of VH.

Finding 11: Process and technical barriers exist that dis-incentivize user engagement with VH and hinder implementation.

Recommendation 11: DHA must work with end users to systematically identify and address the process and technical barriers to VH engagement.

Finding 12: Training and coaching are essential to successful VH implementation. There are good examples of trainings in the MHS, but training is not standardized and disseminated across the enterprise.

Recommendation 12: DHA should develop and disseminate standardized, enterprise-wide VH trainings for all users. Trainings should address workflow or technical issues, such as IT infrastructure, that may arise across all clinic staff and for patients.

Finding 13: Administrative infrastructure is insufficient to enable and support VH.

Recommendation 13: DHA should ensure administrative systems and personnel for VH are aligned to enable and support a user-centric experience. All Direct Care (DC)clinicians in the MHS should have privileges to provide care to beneficiaries anywhere.

Finding 14: Clinicians are not routinely provided credit for VH encounters. Additionally, VH visits may not be reimbursed comparably with in-person visits.

Recommendation 14: DHA should ensure clinicians get credit for both synchronous and asynchronous virtual care at a Relative Value Unit (RVU) rate at least equal to in-person care.

Finding 15: Standardized workflows for common conditions which could incorporate VH are not widely available.

Recommendation 15: DHA should:

- Review and incorporate where appropriate the DoD & VA Clinical Practice Guidelines already adapted for VH.
- Implement guidance to establish workflow protocols by specialty and by condition that are amenable to VH.
- Include patient-to-clinician, clinician-to-clinician, and complex, real-time monitoring modalities.

Finding 16: A robust standardized process to identify technology solutions is not consistently applied.

Recommendation 16: DHA VH should consistently follow the established rigorous process for developing and selecting technology solutions, for example, for Remote Health Monitoring (RHM), to ensure technology solutions meet the needs of users.

Finding 17: Sub-optimal IT infrastructure and lack of sufficient IT support limit incorporation and delivery of VH throughout the MHS.

Recommendation 17: DoD must establish an IT solutions center, with an enterprise help-desk function, to address issues impacting VH throughout the MHS:

- Coordination
- Standardization
- DoD-specific security concerns
- Establish interoperability with the VA and other health care systems

Finding 18: VH technological solutions, resources, and capabilities are different for deployed and non-deployed settings and do not consistently integrate with other relevant systems (e.g., MHS GENESIS or workload capture system). Lack of integration can compromise quality of care, discourage VH engagement, and increase risks to privacy and security.

Recommendation 18: DHA must ensure that enterprise technology solutions used in deployed settings are appropriate, meet user needs and security requirements, and integrate with other major MHS systems (e.g., MHS GENESIS, MHS VC).

Finding 19: The Services currently operate on different networks in deployed settings. Reciprocity (e.g., sharing of information and resources) and bandwidth allocations are problematic issues.

Recommendation 19: The MHS must:

- Comply with the Joint All Domain Command and Control Framework and other DoD data standards that govern reciprocity and data sharing.
- Require a standard DoD bandwidth cybersecurity signal package so VH can function consistently on all the networks.
- Prioritize solving connectivity problems.

Finding 20: Process and outcome measures are necessary to drive improvement and demonstrate value. These are not being collected consistently across the enterprise nor used as part of a coordinated plan for improvement.

Recommendation 20: The MHS should develop a plan to consistently collect data across the enterprise to track process and outcome measures for both deployed and non-deployed settings. This needs to be coordinated across the Services and the DHA and used for performance improvement.

Finding 21: Many current DOD VH measures (such as number of VH visits) do not support the improvements needed in process and outcomes.

Recommendation 21: In consultation with internal DOD experts (including MHS early adopters), and informed by metrics used by leading health care systems, DHA should select measures that include all the following elements:

- Clinical outcomes, quality, and safety
- Clinician experience
- Patient, family, and caregiver experience
- Access to care
- Financial and operational impact
- Health equity

Appendices

Appendix A: References

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Appendix B: Terms of Reference

THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON
WASHINGTON, DC 20301-1200

HEALTH AFFAIRS

MEMORANDUM FOR PRESIDENT, DEFENSE HEALTH BOARD

SUBJECT: Request for Defense Health Board Review, Optimizing Virtual Health in the Military Health System

Pursuant to the attached Terms of Reference (TOR) on "Optimizing Virtual Health in the Military Health System," I direct that the Defense Health Board (DHB), working through its Health Care Delivery Subcommittee, to review the current state of virtual health from a strategic and tactical perspective. Specifically, the Board should recommend guidance on optimizing virtual health decision making and implementation.

The TOR for this review provides a detailed description and scope of the tasking. The point of contact for this action is the DHB Designated Federal Officer CAPT Gregory Gorman. He may be reached at (703) 275-6060, or gregory.h.gorman.mil@mail.mil. Thank you for your support and commitment to optimizing the health and force-readiness of the military.

MULLEN.SEILEEN.MARIE.1519853007
Digitally signed by MULLEN.SEILEEN.MARIE.1519853007
Date: 2022.05.02 15:14:39 -04'00'

Seileen Mullen
Acting

Attachment:
As stated

cc:
Group Federal Officer
Advisory Committee Management Officer
Defense Health Board Designated Federal Officer

Defense Health Board
Optimizing Virtual Health in the Military Health System
TERMS OF REFERENCE

These terms of reference establish the objectives for the Defense Health Board ("the Board") to review, through its Health Care Delivery Subcommittee ("the Subcommittee"), the provision of health care services virtually through the use of technology in the Military Health System (MHS).

Mission Statement: The mission of the Board is to provide independent advice and recommendations to maximize the safety and quality of, as well as access to, health care for members of the Armed Forces and other Department of Defense (DoD) beneficiaries.

Issue Statement: Defense Health Agency (DHA) efforts to reshape health care in the Department of Defense (DoD) involve reallocation of resources, including military medical billets. The MHS transformation aims to realize cost savings through efficiencies and to provide more targeted medical support for the war fighter – to produce and sustain a medically ready force and a ready medical force. Ongoing efforts to restructure Military Medical Treatment Facilities (MTFs) pursuant to the National Defense Authorization Act for Fiscal Year (FY) 2017 additionally impact MTF capabilities through closures, and through changes to service populations and officer and enlisted medical billets.[1] As system transformation proceeds, provision of health care to Active Duty families and retirees remains an important recruitment and retention tool for the all-volunteer force.

DHA is assessing multiple options to deliver medical care for DoD's 9.6 million Active Duty Service Members, spouses, dependents, and retirees. Proposals included hiring civilian health care providers to replace military providers at MTFs and increased use of the civilian TRICARE network. Hiring new civilian providers may be a viable solution in more populated areas but may be hard to implement in rural/remote areas. More extensive use of the TRICARE network may be impacted by lack of provider availability due to low reimbursement rates and to general network insufficiency across rural/remote areas.

The targeted use of DoD's developing Virtual Health (VH; also known as "telehealth" or "TH") capability presents another option in support of military medical force optimization. When applied in response to specific demand signals, VH can support synchronization of need and capacity, expand access to specialty care, and improve system efficiency and patient satisfaction. Expansion of VH to meet medical need, particularly in behavioral health, during the coronavirus disease 2019 (COVID-19) pandemic exemplifies the power this technology can bring to a health system. Telehealth in the Department of Veterans Affairs illustrates the benefits of strategic application of technology to the specific health care needs of a given population.

Virtual health in the MHS has moved from collaboration among Component programs to a single programmatic approach. The integration is partially complete: across the Military Services, between garrisons, and in deployed settings. During the COVID-19 pandemic, VH use accelerated to better protect the health of patients and healthcare providers, and to decrease virus transmission.[2] VH encounters by specialty services increased from 63,990 to 259,330 - a 305% growth from FY 2019 to FY 2020. Research suggest that VH enhances MHS medical force

optimization, particularly with respect to patient access and satisfaction; however, the impact of VH on outcome measures is understudied while computer access and network bandwidth remain concerns for patients and providers, respectively.[3,4] Realizing VH's full potential will require careful analysis of relevant health system factors and strategic alignment with DoD's health care enterprise.

The MHS VH effort needs a top-down strategic approach with effective translation for VH implementation tactics. The goal of this top-down alignment is to apply systems, scientific evidence, and incentives to improve the coordination of care, and provide cost-effective services to consumers/patients.[5, 6]

Objectives and Scope: Given the applicability of VH to MHS system optimization, the Subcommittee should:

- Review current state of VH from a strategic and tactical perspective.
- Provide recommendations for optimizing VH decision making and implementation.

Methodology:

1. The Subcommittee may conduct interviews and site visits as appropriate.
2. The Subcommittee may seek input from other sources with pertinent knowledge or experience.
3. In accordance with the November 26, 2018, Deputy Secretary of Defense memo, "Advisory Committee Management," the Board and Subcommittee shall receive full and timely cooperation of each Office of the Secretary of Defense or DoD Component Head in providing analyses, briefings and other DoD information or data necessary for the fulfillment of its responsibilities as provided for by this Terms of Reference.

Compliance:

The Board and Subcommittee will operate in conformity with and pursuant to the Federal Advisory Committee Act, the Government in the Sunshine Act, and other applicable federal statutes and regulations. Individual Board members do not have the authority to make decisions or recommendations on behalf of the Board, nor report directly to any federal representative. The members of the Board and Subcommittee are subject to certain Federal ethics laws, including 18 U.S. Code §208, governing conflicts of interest, and the Standards of Ethical Conduct regulations in 5 C.F.R., Part 2635.

Deliverables:

The Subcommittee will complete its work within a year of being tasked and report to the Board in a public forum for full and thorough deliberation. The Board will report to the Assistant Secretary of Defense for Health Affairs, who has been delegated the authority to evaluate the independent advice and recommendations received from the Board and, in consultation with the Under Secretary of Defense for Personnel and Readiness, identify actions or policy adjustments

to be made by DoD in response. The Subcommittee will provide progress updates at each Board meeting.

Required Support:

1. The Defense Health Board Support Division will provide any necessary research, analytical, administrative, and logistical support for the Board.

2. Funding for this review is included in the division's operating budget.

References:

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Appendix C: Methods

The DHB Support Division team performed a comprehensive search and review of information on VH throughout the MHS. The team identified the initial pool of subject matter experts from published work and organizations relevant to the DHB's tasking and objectives in the Terms of Reference. These experts on VH from academia, private industry, government, and the military briefed the Subcommittee about VH prioritization, decision making, and strategic implementation in commercial and government organizations. During these briefings, the Subcommittee members engaged with the experts asking clarifying questions to better understand how the military can use VH for Service members, family members, and retirees. Subcommittee members also learned about the challenges of employing VH strategically throughout the MHS to beneficiaries in both deployed and non-deployed environments. Through multiple meetings and iterative review of scientific literature, government documents, subject matter expert briefings, and key discussions, the Subcommittee members discussed the current state of VH in the MHS, strategies to optimize VH, implementation challenges, and measurements that could show VH's added value. From these discussions, the DHB Staff synthesized the information and research to provide background for the Subcommittee to draft its findings and recommendations. The Subcommittee Chair briefed the findings and recommendations to the DHB in an open forum on March 22, 2023, with discussion by DHB members and opportunity for input by the public. The DHB members approved of the recommendations after minor amendments.

Appendix D: Memorandum on the Alignment of Operational and Installation-Specific Medical Functions and Responsibilities

OFFICE OF THE UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND READINESS

27 MAR 2019

MEMORANDUM FOR UNDER SECRETARY OF THE ARMY
UNDER SECRETARY OF THE NAVY
UNDER SECRETARY OF THE AIR FORCE
ASSISTANT SECRETARY OF DEFENSE FOR HEALTH AFFAIRS
VICE CHIEF OF STAFF OF THE ARMY
VICE CHIEF OF NAVAL OPERATIONS
VICE CHIEF OF STAFF OF THE AIR FORCE
DIRECTOR, DEFENSE HEALTH AGENCY

SUBJECT: Alignment of Operational and Installation-Specific Medical Functions and Responsibilities with Section 702 of the National Defense Authorization Act for Fiscal Year 2017, and Sections 711 and 712 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019

References: (a) Under Secretary of Defense for Personnel and Readiness memorandum, "Authorities and Responsibilities of Military Treatment Facility Leaders, Service Leaders and the Military Medical Departments," February 21, 2018
(b) Under Secretary of Defense for Personnel and Readiness memorandum, "Construct for Implementation of Section 702," May 22, 2018
(c) Final Plan to Implement Section 1073c of Title 10, United States Code (Final Report to the Armed Services Committees of the Senate and House of Representatives), June 30, 2018

This memorandum clarifies the Department's current plan for implementing 10 U.S.C. § 1073c and sections 711 and 712 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019. Specifically, it addresses roles and responsibilities of the Military Departments, the Assistant Secretary of Defense for Health Affairs (ASD(HA)), and the Defense Health Agency (DHA) regarding operational and Military Treatment Facility (MTF) specific medical functions. This memorandum revises, reiterates or supplements previous guidance in references (a), (b), and (c); to the extent that any guidance is inconsistent, guidance in this memorandum shall govern. Some elements of the Department's current implementation plan outlined below may be supplemented by additional actions in the next 2 years, or may represent the end state of the organizational reform, contingent on Congress adopting statutory changes that DoD will recommend this year.

Each Military Department is responsible for:

- Manning, organizing, training, equipping, their military personnel (including medical personnel), for medical individual and collective readiness, and setting requirements for services DHA provides in support of the Services to include care of uniformed

personnel.

- Delivering operational clinical services under the operational control of Combatant Commands; on ships or planes; and on installations outside of MTFs (as defined below). Each Military Department will act as the Privileging/Scope of Practice/Clinical Quality Management authority for providers conducting such operational clinical services.
- Setting medical readiness standards, subject to DoD minimum standards and metrics established by the ASD(HA), and ensuring that their military medical personnel are trained in and maintain their clinical readiness skills. The Military Departments will maintain readiness standards at the MTF or through non-MTF partnerships with civilian institutions established by the DHA or the Military Departments. All partnerships will include a provision for capturing and reporting workload.
- Coordinating with DHA on a Service Manpower Document that identifies military medical personnel assigned to MTFs, by location, skill set, and clinical availability. Each Military Department will exercise administrative control of military personnel assigned to MTFs, to include personnel assignments and the issuance of military orders. In situations where military personnel, not under the authority, direction, and control of the MTF Director, provide health care services in the facility, the DHA will maintain oversight for the provision of care delivered by these individuals through MTF policies and procedures and the ptivileging responsibility of the MTF
- Establishing policies for assessment of the employability, deploy-ability, and assignability of their personnel, laying out requirements, where appropriate, to assure proper evaluation of employability, deploy-ability, and assignability, and executing administrative and personnel management aspects of these assessments.
- Developing Defense Health Program (DHP) resource requirements and submitting them through appropriate Military Health System (MHS) governance processes to the ASD(HA).

The ASD(HA) is responsible for conducting oversight of the MHS as detailed by DoD Directive 5136.01, Secretary of Defense policy and statute, and especially:

- Allocating DHP funding to the Military Medical Departments and the DHA with a priority placed on readiness requirements.

The DHA is responsible for:

- Conducting clinical services and business functions within the MTFs in support of healthcare delivery, and especially providing facility, medical supply, equipment, and other clinical support as needed for all activities within the MTF. The DHA will act as the Privileging/Scope of Practice/Clinical Quality Management authority for all care within an MTF. For purposes of distinguishing DHA responsibilities for delivery of health care services inside an MTF from Military Department responsibilities for delivery of health care services outside an MTF, an MTF is defined as any DoD facility, outside of a deployed environment, constructed primarily for health care or as otherwise determined by the Secretary of Defense to be

a MTF. With respect to budgetary responsibilities, the operation and maintenance of MTFs will be funded through the DHP appropriation.

- The provision of care within the MTF to include care in support of medical readiness. The Military Departments will set medical readiness requirements for Active Duty care (what is needed, when, and where) for DHA implementation,
- Identifying the capacity of each MTF to support Military Department or ASD(HA) established clinical readiness standards.
- Coordinating with each Military Department on a Service Manpower Document that identifies military medical personnel assigned to MTFs, by location, skill set, and clinical availability.
- Providing sufficient capacity within the MTF or DHA established non-MTF partnerships to meet Military Department clinical readiness requirements.
- Developing DHP resource requirements and submitting them through appropriate MHS governance processes to ASD(HA).

Tables 1 and 2 attached provide a distribution of responsibilities for planning and executing the requirements. The Military Departments, ASD(HA), and DHA will work collaboratively to monitor effectiveness and efficiency of support.

This guidance will be updated, as needed, to address on-going issues and business rules associated with implementation of this important organizational reform of the MHS. Except as modified by this memorandum and future updates, reference (c) remains in effect.

James N. Stewart
Assistant Secretary of Defense for Manpower and Reserve Affairs, Performing the Duties of the Under Secretary of Defense for Personnel and Readiness

Attachments:
As stated

cc:
Chief Management Officer of the Department of Defense
Under Secretary of Defense (Comptroller)/
Chief Financial Officer
Director of Cost Assessment and Program Evaluation

Appendix E: Virtual Medical Center Lines of Effort

From Legault G. Personal Communication. October 13, 2022.

VH01 – MHS Video Connect: Improve clinician adoption and use of a standardize enterprise video encounter. This is the roll out and adoption of video-to-video platform for patient-to-clinician or clinician-to-clinician use across the enterprise.

VH02 – Global Teleconsultation Portal (GTP): Standardize and optimize GTP process for higher throughput and better use of resources. This is the MHS web-based asynchronous platform for front line and/or primary care clinicians to reach out for non-emergent specialty consults. Consults are answered within 24-72 hours (average 14 hours at this time). Over 6,000 consults completed annually.

VH03 – Remote Patient Monitoring (RPM): Improve health and readiness while managing costs through deployment of RPM capabilities. This includes evaluating current pilots and implementing an enterprise solution for RPM.

VH04 – Virtually Integrated Patient Readiness and Remote Care Clinic (VIPRR): Optimize VIPRR to enhance readiness support across the enterprise. This service provides over 70,000 readiness exams a year for all military services and prioritizes remote service members. The service continues to expand and has been used to provide limited acute primary care support.

VH05/10 – Specialty Care Access/Rapid Garrison Care: Improve access to specialty care through VH. Besides improving access to specialty care, especially for remote service members, there is a plan to develop a rapid VH capability that can be provide needed care during a disaster or surge support for locations experiencing a sudden capacity shortfall in one or more specialty areas.

VH06 – Advanced Virtual Support for Operational Forces (ADVISOR): Increase availability of 24/7, full spectrum synchronous specialty consultation services to operational forces for contingency support. This is a 24/7 line available to all deployed clinicians to access specialty consultation. ADVISOR is planning to expand services to support small and/or remote Military Treatment Facilities (MTFs) needing to access urgent specialty consultation.

VH07 – Mobile Medic / Connected Corpsman: Prepare front line clinicians with VH skills prior to deployment to improve access and readiness.

VH08 – VH Data Environment: Define and display accurate data at all levels of the enterprise for VH decision making. Key performance indicators (KPIs) related to VH are being defined by the VH community/SMEs and the method for displaying the data is under development.

VH09 – VH Competencies: Establish role-based competencies for VH clinicians and support personnel across the enterprise to increase VH usage and effectiveness.

VH11 – VH Privileging: Improve access to VH services through enterprise level VH clinician privileging. Plan to improve the process for VH privileging to simplify it for clinicians and credentialing teams.

VH12 – Management of Virtual Medical Center (VMC) Assets: Ensure continuity, expansion, and access to VH support services through management of VMC global assets. Plan to unite geographically dispersed VMC components under the Defense Health Agency (DHA) Health care Optimization Division (HOD) and consolidate these resources under the guidance of VMC hubs in San Antonio, Europe, and Indo-Pacific.

VH13 – Remote Medical Imaging: Expand use of tele-interpretive services through development and deployment of medical imaging. This will help expand tele-radiology, tele-dermatology, tele-ophthalmology, and other specialties across the enterprise.

VH14 – Direct Operational Support: Improve access to multi-specialty care for deployed personnel through connection to garrison-based VH services.

VH15 – Use VH services to expand clinician exposure to complex case mix: Improve clinician knowledge, skills, and abilities (KSAs) through the use of VH services to expand clinician exposure to complex cases.

VH16 – Virtual Behavioral Health: Expand access to behavioral health care across the enterprise through VMC managed tele-behavioral health (TBH) hubs. An enterprise-wide TBH solution is being built based out of the VMC with a tentative start date of October 2022.

VH17 – Expand Tele-Critical Care (TCC): Expand tele-critical care services across the enterprise. Currently the program monitors 16 sites and over 100 beds. Plan to expand to 47 sites and over 400 beds.

Appendix F: American Medical Association Virtual Health Value Streams

CLINICAL OUTCOMES, QUALITY AND SAFETY SUB-STREAMS	EXAMPLES OF COMMONLY USED MEASURES
Clinical quality and safety outcomes	• Mortality measures (e.g., mortality rate) • Functional status measures (e.g., Functional Independence Measure) • Disease morbidity measures (e.g., Patient Health Questionnaire-9) • NCQA HEDIS measures[iii] • Readmission rates (e.g., 30/60/90-day) • Emergency department (ED) visits • Number of visits to correct diagnosis • Adverse event rate (e.g., postoperative infection rate) • Patient-reported outcomes (e.g., Brief Pain Inventory) • Antibiotic prescribing rate
Clinical processes	• Medication adherence • Adherence to care plans or discharge instructions • Adherence to evidence-based guidelines (e.g., door-to-needle time) • Improvement in disease detection

ACCESS TO CARE SUB-STREAMS	EXAMPLES OF COMMONLY USED MEASURES
Availability of care	• Time to third next available appointment or consultation • Percentage of patients who completed specialty referral within 14 days of referral or interprofessional consult request • Percentage of patients with coverage for virtual visits on their current health insurance plan • Median travel time to care per patient • Number and frequency of patient touchpoints with clinician and/or care team • Reduction in patient transfers
Equitable care*	• Percentage of patients who delay care due to access barriers (e.g., lack of access to broadband, provided technology) • Out-of-pocket costs as a percentage of household budget • Percentage of patients with disabilities who are able to conduct a virtual visit through adaptive technologies • Percentage of patients who can conduct a virtual visit in their desired language

PATIENT, FAMILY AND CAREGIVER EXPERIENCE SUB-STREAMS	EXAMPLES OF COMMONLY USED MEASURES
Clinical and/or technology experience	• Net promoter score (NPS) • Patient activation measure (PAM) • Hospital or Clinician and Group Consumer Assessment of Healthcare Providers and Systems Survey (HCAHPS or CG-CAHPS) • Reported understanding of physician instructions: assess patients' understanding of treatment instructions provided by their physician

CLINICIAN EXPERIENCE SUB-STREAMS	EXAMPLES OF COMMONLY USED MEASURES
Technology experience	• Reported ease of using technology, obtaining clinical information, participating in the virtual visit
Work experience	• Engagement and satisfaction with work (self-reported) • AMA-recommended physician satisfaction surveys (e.g., Mini-Z)[iv] • Annual percentage of physician turnover (or annual recruiting costs) • Duration of visit (compared with equivalent in-person visit) • Percentage of visits conducted virtually and in person

FINANCIAL AND OPERATIONAL IMPACT SUB-STREAMS	EXAMPLES OF COMMONLY USED MEASURES
Direct revenue	• Payment for professional services (e.g. virtual visits, remote patient monitoring, interprofessional consults) • Payment for technical services • Program revenue for offering telehealth services (e.g., the fees that community hospitals pay to participate in a telestroke network) • Performance-based payments generated by participation in an alternative payment model
Indirect revenue	• New patient acquisition • Patient retention rate • Percentage of referrals completed • Increased capacity (bed or appointment availability)
Direct expenses	• Telehealth program expenses (e.g., setup costs, staffing, IT infrastructure, maintenance costs) • Malpractice expenses • Clinical care expenses • Total cost per episode of care or per member per month (for payers, employers and clinicians in risk-based arrangements)
Operational efficiencies	• Length of stay • No-show rate • Inpatient or ED throughput rate • Clinician panel size

HEALTH EQUITY SUB-STREAMS	EXAMPLES OF COMMONLY USED MEASURES
Equity in clinical outcomes, quality and safety	• Inequities impacting marginalized patient populations in selected process, outcomes, quality and safety measures
Equity in access to care	• Inequities impacting marginalized patient populations in selected access measures
Equity in patient, family and caregiver experience	• Inequities impacting marginalized patient populations in selected patient, family and caregiver experience measures
Equity in clinician experience	• Inequities impacting marginalized clinician populations and/or clinicians caring for marginalized patient populations in selected clinician experience measures
Equity in financial and operational impact	• Inequities impacting provider organizations caring for marginalized patient populations in selected financial and operational impact measures

Appendix G: Virtual Medical Center Capabilities

Patient to-Provider Capabilities	Short Description	Targeted End User	How a Market Can Request Access
Services and Support	**Short Description**	**Targeted End User**	**Contact Information for Support**

Provider-to-Provider Capabilities	**Short Description**	**Targeted End User**	**How a Market Can Request Access**
Patient Monitoring	**Short Description**	**Targeted End User**	**How a Market Can Request Access**

Appendix H: Virtual Medical Center Europe Capabilities Flyer

DHA Defense Health Agency

VIRTUAL HEALTH EUROPE

Virtual Health Support for Operational Forces

A Tri-Service guide for Role 1 to Role 3 providers in EUCOM, AFRICOM, CENTCOM, and SOCOM

Operational Virtual Health (OVH) Team

DSN (314)590-8026 Civ: +49-6371-9464-8026

email to: usarmy.landstuhl.medcom-rhc-e.mbx.operational-vh-team@mail.mil

Consultative Specialty Care Available:

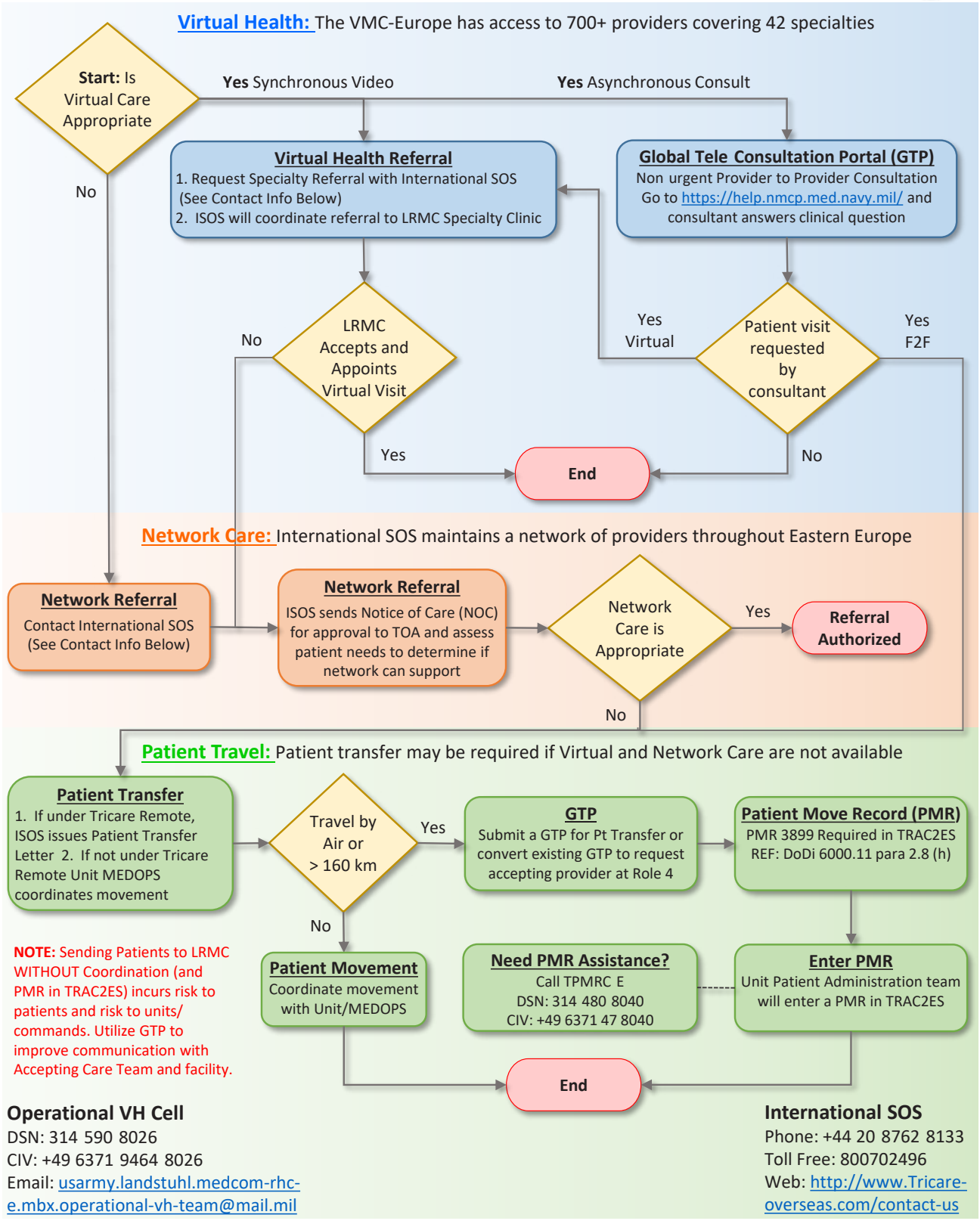
Allergy/Immunology	Gastroenterology	Nutrition	Rheumatology
Army Body Comp. Prgm	General Surgery	Nutrition/ABCP	Sleep Medicine
Audiology	Gynecology	Orthopedics	SUDCC
Behavioral Health	Hematology/Oncology	Pain Management	Speech Pathology
Cardiology	Infectious Disease	Plastic Surgery	TBI
ENT	Internal Medicine	Podiatry	Urology
Endocrinology	Neurosurgery	Pulmonology	Dermatology

How to Consult with a Specialty Care Medical Provider:

1. **Emergency Telephonic Consultation (24/7/365)**
   - **PRIMARY:** ADVISOR Line – Urgent/Emergent Specialty Care (Critical Care, Surgery, Medicine) +1 833-238-7756
     NOTE: *There is a pause while the computer routes your call – do not hang up.*
   - ***ALTERNATE:*** *LRMC Emergency Room: DSN 314-590-6322, Comm: +49 (0) 6371-9464-6322*
2. **Routine, Non-Urgent Consultation via Email or Real-Time Virtual Video Visit (V3)**
   - Secure Web Based consultation using the Global Teleconsultation Portal (GTP): Supported by LRMC and Navy Med East specialists
     - Simple no CAC required registration at: https://help.nmcp.med.navy.mil
     - GTP consults are answered in 24 – 72 hours
   - Routine Synchronous Video specialty consultation (M-F, 0730 – 1600, GMT +1)
     - Use TRICARE/ISOS as the 'PCM' for specialty care when requesting V3 from garrison and role 4 to ensure proper coordination. **International SOS Eurasia-Africa** +44 20-8762-8384
     - Contact the VMC-Europe OVH Team office at DSN 314-590-8026, or comm +49 (0) 6371 9464 8026 to assist coordinating your ADSM's virtual appointment or to establish your site as a VH ready.
       VH READY: Your site may need to be set-up for VTC capabilities and receive OVH education.

Patient movement and tracking:

1. **LRMC Patient Gateway Center & Deployed Warrior Medical Management Center (DWMMC)**
   - Staffed 24/7/365
   - Website: https://rhce.amedd.army.mil/landstuhl/services/transfer.html
   - Email: usarmy.Landstuhl.medcom-rhce-e-mbx.patient-gateway@mail.mil
   - Phone: DSN 314-590-5890, Comm +49 (0) 6371 9464 5890
2. **LRMC Medical Transient Detachment (MTD)**
   - Active Duty Patient Movement Office: DSN 314-590-5899, Comm +49 (0) 6371-9464-5899
   - Army LNO: DSN: 314-486-5564/5965, Comm: +49 (0) 6371-86-5564/5965
   - Navy LNO: DSN 314-486-8127, Comm +49 (0) 1622964149
   - Marine LNO: DSN 314-590-7100, Comm +49 (0) 06371-9464-7100
   - Air Force LNO: DSN 314-486-7660, Comm: +49 (0) 6371-86-766


Virtual Health: The VMC-Europe has access to 700+ providers covering 42 specialties
Start: Is Virtual Care Appropriate
Yes Synchronous Video
Yes Asynchronous Consult
No
Virtual Health Referral
1. Request Specialty Referral with International SOS (See Contact Info Below)
2. ISOS will coordinate referral to LRMC Specialty Clinic
Global Tele Consultation Portal (GTP)
Non urgent Provider to Provider Consultation
Go to https://help.nmcp.med.navy.mil/ and consultant answers clinical question
No
LRMC Accepts and Appoints Virtual Visit
Yes
Yes Virtual
Patient visit requested by consultant
Yes F2F
No
End
Network Care: International SOS maintains a network of providers throughout Eastern Europe
Network Referral
Contact International SOS (See Contact Info Below)
Network Referral
ISOS sends Notice of Care (NOC) for approval to TOA and assess patient needs to determine if network can support
Network Care is Appropriate
Yes
Referral Authorized
No
Patient Travel: Patient transfer may be required if Virtual and Network Care are not available
Patient Transfer
1. If under Tricare Remote, ISOS issues Patient Transfer Letter 2. If not under Tricare Remote Unit MEDOPS coordinates movement
Travel by Air or > 160 km
Yes
GTP
Submit a GTP for Pt Transfer or convert existing GTP to request accepting provider at Role 4
Patient Move Record (PMR)
PMR 3899 Required in TRAC2ES
REF: DoDi 6000.11 para 2.8 (h)
No
Patient Movement
Coordinate movement with Unit/MEDOPS
Need PMR Assistance?
Call TPMRC E
DSN: 314 480 8040
CIV: +49 6371 47 8040
Enter PMR
Unit Patient Administration team will enter a PMR in TRAC2ES
NOTE: Sending Patients to LRMC WITHOUT Coordination (and PMR in TRAC2ES) incurs risk to patients and risk to units/ commands. Utilize GTP to improve communication with Accepting Care Team and facility.
End
Operational VH Cell
DSN: 314 590 8026
CIV: +49 6371 9464 8026
Email: usarmy.landstuhl.medcom-rhc-e.mbx.operational-vh-team@mail.mil
International SOS
Phone: +44 20 8762 8133
Toll Free: 800702496
Web: http://www.Tricare-overseas.com/contact-us

Appendix I: Virtual Medical Center Illustrations of Virtual Health Applications

ADVISOR
Advanced Virtual Support for Operational Forces

23 Jun 2019, Orthopedic Surgeon from Ft Bragg, NC

Open fracture with nailbed injury left index finger distal phalanx

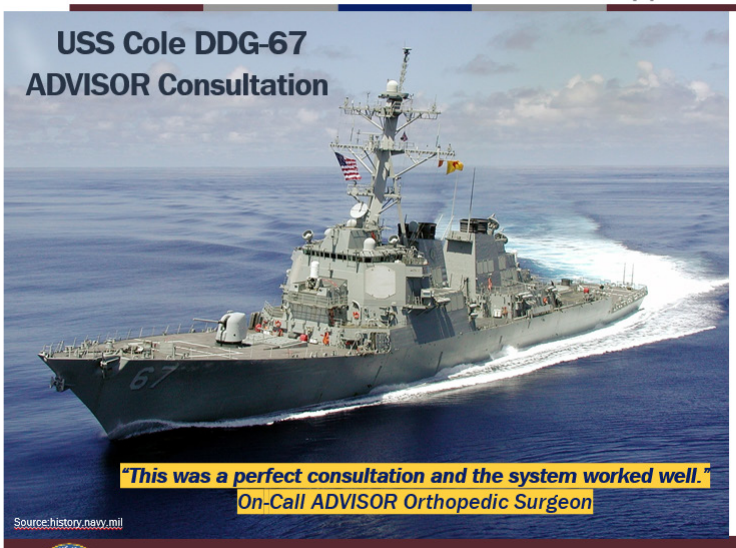
23 y/o AD SGT, in Africa, cut tip of dominant left index finger with band saw, hitting the bone of the distal phalanx. ADVISOR Volunteer, Orthopedic Surgeon from Ft Bragg, NC, was contacted by a deployed emergency physician who had a general surgeon with local operating capability. The deployed team needed advice on how to manage this complex fingertip injury. The team was able to text the ADVISOR Clinician patient details and photos of the injury/treatment via civilian secure messaging. The patient had a loss of the nail bed and a small soft tissue defect over the distal phalanx of the left index finger. Detailed recommendations were communicated to include surgical closure, appropriate dressings and to transition from intravenous to oral antibiotics. The team was able to send post op images which showed good performance of this procedure. **This contact prevented unnecessary air/ground evacuation of this injury.**

"I think the main success was encouraging the team that they could do this with minimal equipment in an austere environment. They deserve the credit for being willing to reach beyond their comfort zone to do the right thing for the patient and the Army." ADVISOR Clinician

Medically Ready Force… Ready Medical Force

ADVISOR
Advanced Virtual Support for Operational Forces

USS Cole DDG-67
ADVISOR Consultation



"This was a perfect consultation and the system worked well."
On-Call ADVISOR Orthopedic Surgeon

Source:history.navy.mil

May 28th, 2022

POTENTIAL SHOULDER DISLOCATION
WITH REDUCTION,
NEURO AND VASCULAR INTACT

STORY/ HISTORY:

22 Y/O F FELL DOWN THE LADDER ON THE USS COLE 3 DAYS PRIOR TO CONSULTATION. C/O IMMEDIATE SHOULDER PAIN. PER MDR, HE PERFORMED A REDUCTION OF THE SHOULDER WITH GENTLE EXTERNAL ROTATION AND PLACED THE PATIENT IN A SLING WITH PLAN FOR PENDULUM EXERCISES. NO RADICULAR SXS, C/O MOSTLY POSTERIOR PAIN, NO RECURRENCE OF INSTABILITY. SEEN IN LOCAL ITALIAN ER FOR RADS WITH REPORT OF DECREASED SUBACROMIAL SPACE, BUT REDUCED SHOULDER. ASKING ABOUT NEED FOR EVAC OR ADDITIONAL IMAGING.

Medically Ready Force… Ready Medical Force

ADVISOR

Advanced Virtual Support for Operational Forces

July 14th, 2022

Ophthalmology Operational Virtual Health Evaluation (OVHE)

Story/History

"I'd like to give you feedback on the ADVISOR Virtual Support System. I had an ophthalmic patient today that I was concerned for an ulceration of the conjunctiva, with a good bit of uptake on the fluorescein stain.

The ADVISOR support line had me in immediate contact with an Ophthalmologist, and we were able to work up the patient almost seamlessly. After giving the clinical presentation, the ophthalmologist had requested pictures of the affected eye, both with and without fluorescein. I was able to use the Command's camera to take pictures and send them over to her (without any PII or identifying data). We were able to review and discuss them over the phone at real time and were able to determine that the patient can be retained onboard at this time with aggressive antibiotics and very close follow up protocol. I've notified my Physician Supervisor and Senior Chief that I had utilized the specialty resource and briefed them of the findings and plan.

For concerns conditions such as the eyes with very low thresholds for operational retention, ***the ADVISOR program is a colossal benefit for providers afloat needing that second-look, and the impact on uninterrupted operations cannot be understated.*** If by chance this feedback makes it up further, I would like to personally thank LCDR Loretta Stein for her assistance.

Although the condition is still very early and I'm not out of the woods until resolution, ***this resource can give operational IDCs the information and tools needed to hold off on pressing that MEDEVAC button immediately."***

USS Billings (LCS 15) Gold Crew

ADVISOR Consultation

"I would ABSOLUTELY recommend the ADVISOR program to any Operational IDC."

USS Billings (LCS 15) Gold Crew IDC

Medically Ready Force… Ready Medical Force

ADVISOR

Advanced Virtual Support for Operational Forces

USS Billings (LCS 15) Gold Crew

ADVISOR Consultation

July 14th, 2022

Ophthalmology Operational Virtual Health Report (OVHR) from LCDR Stein

29-year-old male patient, 12 hours from time of injury/start of care.

- **Story**: Woke up with left eye localized conjunctival injection/redness, no trauma, no change in vision, mild irritation.
- **Diagnosis**: IDC noted no FB on exam; staining revealed what appeared to be conj. Abrasion, no lac, no suspicion for globe trauma.
- **Recommendations**: I advised a course of topical moxi QID x 5days for infection prophylaxis and ilotycin ointment for 2-3 days. Reviewed return precautions.
- **Recommended Follow-Up**: 1 days with f/u with ship doc.

Question	Response
My experience with the local caregiver was:	5
If you answered 1 or 2 or 3, please indicate why:	
The local caregiver's clinical questions were appropriate for virtual health consultation:	5
If you answered 1 or 2 or 3, please indicate why:	
My ability to provide appropriate recommendations was:	5
If you answered 1 or 2 or 3, please indicate why:	
Please provide any suggestions on how we could support you better:	
Use the advisor app platform to be able to accept images- maybe ship could email them to the app and be captured in the encounter.	

Medically Ready Force… Ready Medical Force

Appendix J: Meetings and Presentations

March 30, 2022: Defense Health Board Meeting
Virtual

The DHB met virtually and received briefings from subject matter experts (SMEs) on priority topic areas of the MHS, to include VH. Lt. Col. Nathan Reynolds, Healthcare Optimization Division, DHA, briefed an overview of VH in the MHs.

June 6, 2022: Defense Health Board Meeting
Virtual

Dr. Brigid McCaw introduced the tasking to the DHB.

June 29, 2022: Health Care Delivery Subcommittee Kickoff Meeting
Virtual

The Subcommittee met virtually and received briefings from military and cilivian SMEs on VH and VH strategy. LTC Gary Legault, VMC, DHA, provided an update on VH efforts within the DHA. Dr. Michael Dinneen, Office of Strategy Management, Office of the Assistant Secretary of Defense for Health Affairs, briefed on how digital health is an enabler of the health service delivery. The Subcommittee also reviewed the tasking and discussed a report outline.

July 13, 2022: Health Care Delivery Subcommittee Meeting
Virtual

The Subcommittee met virtually and received briefings on "Optimizing VH" by Ms. Ann Mond Johnson, American Telemedicine Association.

August 10, 2022: Defense Health Board Meeting
North Chicago, IL

The DHB met in person and received a briefing from Dr. Darrin Worthington, Veterans Integrated Services Networks, VHA, on the VHA's Telehealth Services, VISN 12. Dr. Brigid McCaw provided an update on the tasking for the DHB.

August 17, 2022: Health Care Delivery Subcommittee Meetin
Virtual

The Subcommittee met virtually and received briefings on "Decision Making for Telehealth Services in the Veterans Health Administration" by Dr. Kevin Galpin, Office of Connected Care, VHA.

September 7, 2022: Health Care Delivery Subcommittee Meeting
Virtual

The Subcommittee met virtually and received a briefing on "Value Based Care and Strategic Decision Making in Virtual Health" by Dr. Robert Kaplan, Senior Fellow and Marvin Bower Professor of Leadership Development at the Harvard Business School, and Dr. Kevin Schulman, Professor of Medicine and Professor of Operations, Information, and Technology at Stanford University.

October 5, 2022: Health Care Delivery Subcommittee Meeting
Virtual

The Subcommittee met virtually and received an overview brief of the global operational VH challenges and the complexity of medical care in the deployed environment, and how VH can help provide better care to the troops.

The SMEs who briefed at the meeting:

- Mr. Mike Kile, VMC, BAMC
- LTC Gary Legault, VMC, BAMC

October 19, 2022: Health Care Delivery Subcommittee Meeting
Virtual

The Subcommittee met virtually and received a briefing on MHS Video Connect and operational VH by COL Robert Cornfeld, Chief Medical Information Officer, Madigan Army Medical Center.

November 2, 2022: Health Care Delivery Subcommittee Meeting
Virtual

The Subcommittee met virtually and discussed sections of the report, to include the outline and a section on governance and prioritization of VH in the MHS. There were no briefings at this meeting.

November 16, 2022: Health Care Delivery Subcommittee Meeting
Virtual

The Subcommittee met virtually and received briefings on how the VHA prioritizes their research, in particular formalizing and integrating VHA Connected Care's Research Consortium.

The SMEs who briefed at the meeting:

- Dr. David Atkins, Office of Research and Development, VHA
- Dr. Leonie Heyworth, Office of Connected Care, VHA

December 12, 2022: Health Care Delivery Subcommittee Meeting
Virtual

The Subcommittee met virtually and received a briefing on optimizing VH in the MHS by Ms. Regina Julian, Heath Care Operations, DHA.

December 14, 2022: Health Care Delivery Subcommittee
Virtual

The Subcommittee met virtually and received a briefing on the priorities of the COCOMs by Maj Gen Paul Friedrichs, Joint Staff Surgeon, Joint Chiefs of Staff.

January 11, 2023: Health Care Delivery Subcommittee Meeting
Virtual

The Subcommittee met virtually and discussed sections of the report, to include the findings and recommendations. There were no briefings at this meeting.

January 25, 2023: Health Care Delivery Subcommittee Meeting
Virtual

The Subcommittee met virtually and discussed the report. There were no briefings at this meeting.

February 8, 2023: Health Care Delivery Subcommittee Meeting
Virtual

The Subcommittee met virtually and discussed the report. There were no briefings at this meeting.

February 22, 2023: Health Care Delivery Subcommittee Meeting
Virtual

The Subcommittee met virtually and discussed the report. There were no briefings at this meeting.

March 22, 2023: Defense Health Board Meeting
Falls Church, VA

Dr. McCaw, the Subcommittee Chair, provided a decision brief to the DHB members. After some admendments to the language, the DHB voted to approve the report and its findings and recommendations.

Appendix K: Glossary

ADSM: Active duty Service Member

ADVISOR: Advanced Virtual Support of Operational Forces

AHLTA: Armed Forces Health Longitudinal Technology Application

AMA: American Medical Association

ATA: American Telemedicine Association

BAMC: Brooke Army Medical Center

CBA: Capabilities-Based Assessment

CCMD: Combatant Commands

CONUS: Continental United States

DAD-HCO: Deputy Assistant Director of Health Care Operations

DC: Direct Care

DHA: Defense Health Agency

DHB: The Defense Health Board

DoD: Department of Defense

DNBI: Disease nonbattle injuries

EHR: Electronic health record

GTP: Global Teleconsultation Portal

HCO: Health Care Operations

HELP: Health Experts online Portal

LOE: Lines of Effort

MEDEVAC: Medical evacuation

MH: Mental Health

MHS: Military Health System

MTF: Military Treatment Facilities

NAL: Nurse Advice Line

OCONUS: Outside the continental United States

PATH: Pacific Asynchronous TeleHealth System

PC: Purchased Care

RHM: Remote Health Monitoring

RPM: Remote Patient Monitoring

RVU: Relative Value Unit

SMs: Service members

TBH: Telebehavioral Health

TCC: Tele-Critical Care

TH: Telehealth

US: United States

USAF: United States Air Force

VA: U.S. Department of Veterans Affairs

VBH: Virtual Behavioral Health

VC: Video Connect

VCU: Virginia Commonwealth University

VH: Virtual Health

VHA: Veterans Health Administration

VHCG: Virtual Health Coordinating Group

VIPRR: Virtually Integrated Patient Readiness & Remote Clinic

VISNs: Veterans Integrated Services Networks

VMC: Virtual Medical Center


DEFENSE
HEALTH BOARD