

Toward the Development of National Telehealth Services: The Role of Veterans Health Administration and Future Directions for Research

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Abstract

The Veterans Health Administration (VHA) in the Department of Veteran Affairs (VA) has emerged as a national and international leader in the delivery and research of telehealth-based treatment. Several unique characteristics of care in VA settings intersect to create an ideal environment for telehealth modalities and research. However, the value of telehealth experience and initiatives in VA settings is limited if telehealth strategies cannot be widely exported to other public or private systems. Whereas a hierarchical organization, such as VA, can innovate and fund change relatively quickly based on provider and patient preferences and a growing knowledge base, other health provider organizations and third-party payers may likely require replicable scientific findings over time before incremental investments will be made to create infrastructure, reform regulatory barriers, and amend laws to accommodate expansion of telehealth modalities. Accordingly, large-scale scientifically rigorous telehealth research in VHA settings is essential not only to investigate the efficacy of existing and future telehealth practices in VHA, but also to hasten the development of telehealth infrastructure in private and other public health settings. We propose an expanded partnership between the VA, NIH, and other funding agencies to investigate creative and pragmatic uses of telehealth technology. To this end, we identify six specific areas of research we believe to be particularly relevant to the efficient development of telehealth modalities in civilian and military contexts outside VHA.

This paper is part of a series that summarizes the NIH conference, Future of Telehealth: Essential Tools and Technologies for Clinical Research and Care. The agenda and presentations from this conference are available online at <http://www.internet2.edu/health/library/NIH2009/>. A videocast of the June 25 plenary session is available online at <http://videocast.nih.gov/summary.asp?live=7466>.

Key words: telehealth technology, Veterans Health Administration, National Institutes of Health, national telehealth services

Introduction

The Veterans Health Administration (VHA) in the Department of Veteran Affairs (VA) has emerged as a world leader in the delivery and research of telehealth-based treatment, a relatively new application of technology with a rapidly growing evidence base and major public health implications. At the 2009 National Institute of Health (NIH) conference on the Future of Telehealth, VHA researchers presented a diverse sampling of research on telehealth treatments for depression,¹ hypertension,² heart failure,³ and posttraumatic stress disorder.⁴ These and other lines of research to evaluate the efficacy and costs of telehealth interventions are critical because use of telehealth modalities is already routine within the VHA. In FY 2008, VHA clinicians provided care to over 230,000 patients using telehealth modalities, mental health services were provided via real-time clinical videoconferencing at 300 VA community-based outpatient clinics, and 130,000 patients received telehealth services using store-and-forward technologies (Peters J, personal communication, 2009). Additionally, over 40,000 veterans have enrolled in the VA's home telehealth program.⁵

Several unique characteristics of care in VA settings intersect to create an ideal environment for telehealth intervention and research. First, the universal use of standardized electronic medical records (EMRs) in VHA allows off-site specialists and on-site care providers to share a common medical record and to coordinate care. EMRs provide an infrastructure that makes many forms of telehealth treatment possible. Second, VHA practitioners delivering care as part of a federal system do not have the same cross-state licensure restrictions that exist in many other public and private telehealth care settings. Third, large-scale utilization of telehealth in VA settings is made easier by a capitated payment system that is not subject to the range of restrictions imposed by many traditional third-party payer arrangements. Additionally, patients with a recent military background (e.g., veterans of the wars in Iraq and Afghanistan) may be more comfortable than civilian populations in using and interacting with technology, perhaps making telehealth modalities more accessible and commensurate with patient preferences in VA settings.

Notably, the value of telehealth experience and initiatives in VA settings is limited if telehealth strategies cannot be widely exported to other public or private systems. The underlying rationale for VHA's adoption and dissemination of telehealth was to meet the chronic healthcare needs of patients, especially those in rural and remote locations. However, a large driving force behind much of the recent

and ongoing expansion of telehealth services has been demand by patients and providers. While there is scientific evidence for VA telehealth initiatives such as retinopathy screening, in many other areas, clinical practice is leading research because the clear pragmatic value and clinical usefulness of telehealth makes the modality attractive to providers and local administrators. However, in private and other public settings, it is likely that incremental and sustained scientific validation for the effectiveness of telehealth interventions will be necessary before sufficient investments will be made to create infrastructure, reform regulatory barriers, and amend laws to accommodate expansion of the telehealth modality. VHA could provide the scientific validation for the comparative effectiveness of telehealth interventions to assist private and other public settings that do not currently have electronic health records or the same receptivity to health information technologies. Whereas literature reviews suggest that there is a growing body of evidence supporting use of telehealth interventions, methodologically flawed or otherwise limited research studies are the norm.^{6,7} As a result, the value of much of this research is questionable in terms of its ability to inform legislators, policy makers, senior executives, and financiers on the role for telehealth in the wider portfolio of healthcare services.

VHA is well placed to provide the systematic evidence upon which telehealth could be more widely adopted. Accordingly, increased efforts to conduct large-scale, scientifically rigorous telehealth research in VA settings would expedite the development of telehealth infrastructure in private and other public settings. To this end, we propose an expanded partnership between the VA, NIH, and other funding agencies to investigate creative and pragmatic uses of telehealth technology. We also encourage VHA researchers and administrators to take a more active role in taking advantage of the telehealth infrastructure already in place and the data-gathering capabilities of VHA to further telehealth research and the development of evidence-based telehealth care.

While many facets of telehealth intervention are in need of carefully controlled research, we identify six areas we believe to be particularly relevant to the efficient development of telehealth modalities in civilian and military contexts. First, emphasis should be placed on randomized controlled trials that investigate adaptations of existing evidence-based practices to telehealth modalities. Such studies should be appropriately scaled and powered for non-inferiority designs. Second, in addition to noninferiority designs, research should also strive to address situations, scenarios, illnesses, or populations where telehealth modalities are particularly indicated as *first-line* interventions over treatment as usual or face-to-face encounters. For example, interventions for behavioral health, am-

bulatory disorders, or intense anxiety may be more effective if conveyed within patients' natural ecology as opposed to in providers' offices. Third, telehealth technologies are evolving at a pace that may make the results of traditional randomized controlled trials irrelevant. Therefore, new research strategies must be developed that match the pace of technology development in order to reduce the time lag between initiation of research and widespread adoption of new technology into standard healthcare. Fourth, research should be emphasized that investigates improving patient access to care via telehealth technology, including home-based telehealth, telehealth at rural satellite clinics, and telehealth technology at convenient public locations (e.g., post offices, libraries, "big box" stores). Health disparities work in this area could also be especially helpful in identifying patient populations or cultural groups that may have varying degrees of comfort with telehealth technologies. Fifth, research investigating the economic impact or benefits of telehealth interventions will complement clinically oriented investigations and hasten the appropriate development of telehealth infrastructure, policy, and law. Finally, in addition to determining whether telehealth encounters can substitute for or improve upon in-person encounters, it will be important to examine interventions that combine telehealth and in-person components. Research should investigate how telehealth technologies can be incorporated into and enhance new models of care (e.g., team-based treatments, disease management programs, peer support services). Such research is needed to unleash the potential of telehealth technologies to improve the effectiveness of interactions between informed activated patients and prepared proactive care teams.

The areas for scientific investigation identified above are by no means exhaustive; we suggest that they are necessary for the widespread adoption of telehealth into a national healthcare environment. Local and regional support for telehealth in VHA and the growing knowledge base led to telehealth being designated by the Committee on Veterans' Affairs, United States House of Representatives on May 18, 2005 as in need of further development within VHA.⁸ VHA has sought to ensure the sustainability of its telehealth capacity by creating a national program office, setting goals to standardize the delivery of clinical care, and instituting a quality management program, including providing training resources for staff. Whereas a hierarchical organization, such as VHA, can support and fund such change, other health provider organizations and third-party payers may likely require rigorous economic and clinical findings over time to enable incremental and stepwise change. The VHA is therefore a unique clinical resource for the development of evidence-based telehealth interventions. Such interventions promise to transform the

delivery of healthcare in the 21st century and ultimately improve quality and access to services for patients everywhere.

Disclosure Statement

No competing financial interests exist.

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Received: October 9, 2009

Accepted: October 21, 2009

This article has been cited by:

1. John Paul Jameson, Mary Sue Farmer, Katharine J. Head, John Fortney, Cayla R. Teal. 2011. VA Community Mental Health Service Providers' Utilization of and Attitudes Toward Telemental Health Care: The Gatekeeper's Perspective. *The Journal of Rural Health* no-no. [[CrossRef](#)]
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