U.S. Department of Veterans Affairs
Veterans Health Administration
Office of Rural Health
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ORH PROJECT OVERVIEW

An Evaluation of the Feasibility of Improving Telemedicine Access for Rural Veterans Using Low-Earth Orbit (LEO) Internet Satellite Technology

Background

It is known that rural Veterans are older, exhibit more chronic illnesses, and have long been plagued by greater healthcare access issues versus their urban counterparts.[1] Importantly, telemedicine has been shown to alleviate travel time and other costs associated with in-person care, to increase patient satisfaction, and to improve access to primary care, mental health, and other specialty care,[2] especially for those with transportation or caregiver needs.

Despite the promise of telemedicine to improve access to care among highly rural and remote Veterans, use is mitigated by barriers including broadband infrastructure. Notably, per the Federal Communications Commission (FCC), 22.3% of rural Americans experience inadequate terrestrial broadband internet access compared to 1.5% of urban Americans.[3] As the demand and diversity of telemedicine programs (e.g., Clinical Resource Hubs, Tele-Mental health, cardiac rehabilitation) expands within the Department of Veterans Affairs (VA) Veterans Health Administration (VHA), there is a need to ensure already underserved populations do not become more disadvantaged. Low-earth orbit (LEO) satellite internet, which does not depend on terrestrial infrastructure, may be able to address this need.

The VHA Office of Rural Health (ORH) Veterans Rural Health Resource Center-Iowa City is conducting *An Evaluation of the Feasibility of Improving Telemedicine Access for Rural Veterans Using Low-Earth Orbit (LEO) Internet Satellite Technology.* Findings from the study will provide VHA with information about the feasibility, buy-in, experience with, and preferences for LEO satellite internet among Veterans living in highly rural or remote locations and lacking adequate terrestrial internet resources. This research can then be leveraged to improve internet access, and subsequently telemedicine use, and to identify alternative strategies that increase engagement among those most affected by the digital divide.

Goals and Objectives

The long-term objective of this effort is to support the delivery of equitable telemedicine access among rural Veterans. In 2025, our objectives are to:

1. Determine how widespread the digital divide remains among VHA enrollees, and further investigate the feasibility of using low-earth orbit satellites in the affected regions.

Goals and Objectives *(continued)*

2. Conduct 50 telephone and 15-20 qualitative interviews among Veterans with inadequate access to terrestrial broadband to evaluate the needs, feasibility, experiences, and preferences for LEO satellite services.
3. Support Connectivity and Collaborations Services in the administration of a satisfaction survey about the implementation of LEO satellite internet services at 7 VHA pilot locations.

Methodology

Using data available from the FCC, we have identified where terrestrial broadband internet is inadequate for telemedicine (*see Figure 1*). Among the 9.5 million Veterans enrolled at the VHA, 107,168 (1.1%) and 310,041 (3.2%) were foun d to live in an unserved or underserved location, respectively.

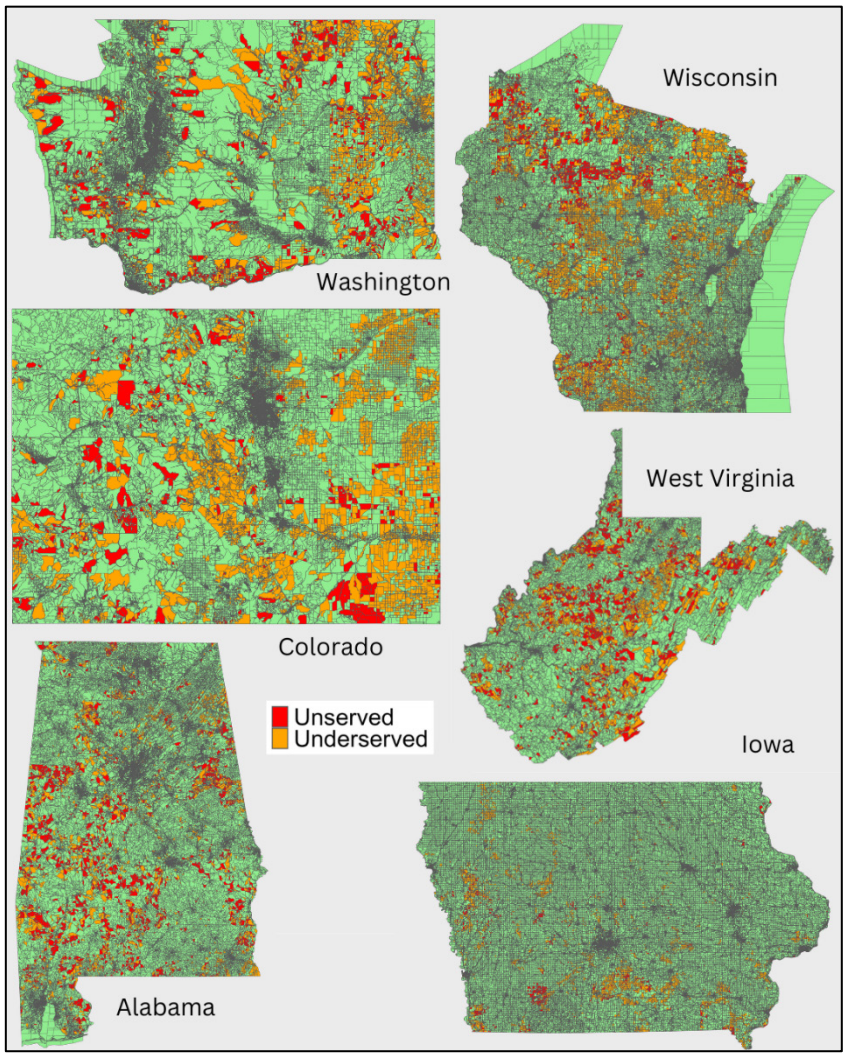

Figure 1. A selection of states nationwide illustrating unserved and underserved areas.

Veteran recruitment for the telephone and qualitative interviews among the cohort of Veterans identified as lacking adequate terrestrial broadband services is ongoing. A database containing the Veterans most recent contact information (e.g., phone number and mailing address) has facilitated study recruitment. Individuals identified in this database are randomly selected to participate in this study. The participants selected for the survey using a computer-assisted telephone interview and those selected for the qualitative interviews are mutually exclusive.

Thus far, 24 of 50 Veterans have completed the CATI, while 8 of 20 Veterans have participated in the qualitative interviews.

Impact on Rural Veteran Health

This study has the potential to improve rural Veterans' telemedicine access, while reducing travel burden and lessening VHA reliance on community care in highly rural and remote locations. Though the findings of this study will not directly impact rural Veteran health, it sets the stage to meaningfully modify the existing digital divide consult for those Veterans in the most digitally remote locations. We will further use the information gathered to develop a resource guide of state and federal programs to support home internet access, especially those addressing the barriers experienced by Veterans living in highly rural or remote areas.

Key Takeaways

The proposed work does not directly implement video telemedicine, but this effort informs the research community on the extent to which inadequate terrestrial broadband internet remains an issue among enrolled Veterans. Understanding the perspectives of those affected by this digital divide will lead to improved programs and interventional efforts to ensure equitable access for all Veterans. Given the national VHA priority on expanding Veterans' access to telemedicine, our results could also inform national priorities for resource-based interventions surrounding the uptake of video telemedicine.

References

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