

HIV TELEHEALTH in VETERANS ADMINISTRATION CLINICS

Evidence-Based Structural Intervention

Evidence-Based Engagement in HIV Care

Evidence-Based for Viral Suppression

INTERVENTION DESCRIPTION

Goal of Intervention

- Determine the effectiveness of HIV telehealth programs as quality improvement programs implemented in clinics within Veterans Affairs (VA) health care system improve viral suppression

Intended Population

- Persons with HIV in VA clinics

Brief Description

Telehealth Programs in Veterans Administration (VA) clinics offer persons with HIV (PWH) specialty care via telehealth in nearby Veteran Affairs primary care clinics, instead of a distant HIV clinic located in a large VA facility. Patients choosing to use telehealth were scheduled for appointments at previously assigned follow-up intervals, as determined at their last HIV clinic visit. Protocols for telehealth scheduling and visits followed local facility policies. Protocols varied across networks, but in all cases involved secure videoconferencing between HIV specialist providers in central HIV clinics and patients in private rooms in VA primary care clinics. Telehealth visits were conducted by the same providers conducting in-person visits and included the same care elements. Telehealth technicians in the VA primary care clinics obtained vital signs and assisted with use of videoconferencing units and related technology as available to conduct limited physical exams (e.g., remote stethoscopes and high-resolution exam cameras for skin and oral exams). Laboratory and in some cases basic radiology facilities were available in the VA primary care clinics.

Theoretical Basis

- None reported

Intervention Duration

- One year

Intervention Setting(s)

- VA Primary Care health systems consisting of
 - Centrally located HIV clinic in a large VA facility in an urban area with a population of > 1 million
 - 8-9 affiliated VA primary care clinics in surrounding suburban and rural areas 14-114 miles from HIV clinic

Deliverer

- Teams consisting of:
 - Program coordinator (registered nurse, nurse practitioner, or physician assistant)
 - Facility telehealth coordinator
 - HIV specialist physician
 - Telehealth technicians

Delivery Methods

- Telehealth video conference calls

Structural Components

- Access – HIV health care
 - Initiated telehealth programs to provide patients the opportunity to receive HIV specialty care in VA primary care clinics closer to their homes
- Capacity Building—Technology
 - Used HIV telehealth visits within VA primary care clinics to access HIV specialty care for HIV-positive specialty clinic patients

INTERVENTION PACKAGE INFORMATION

An intervention package is not available at this time. Please contact **Michael Ohl**, Division of Infectious Diseases, University of Iowa Carver College of Medicine, Center for Access and Delivery Research and Evaluation (CADRE), Mailstop 152, Iowa City VAMC, Iowa City, IA 52246.

Email: michael-ohl@uiowa.edu for details on intervention materials.

EVALUATION STUDY AND RESULTS**Study Location Information**

The original evaluation study was conducted in three VA health care system networks between 2015 and 2016.

Key Intervention Effects

- Increased engagement in HIV care
- Increased viral suppression

Recruitment Settings

VA HIV specialty clinics

Eligibility Criteria

The only criterion required was confirmation by the patient's primary provider in the HIV clinic that telehealth visits were clinically appropriate based on the patient's care needs.

Study Sample

The analytic study sample consisted of 1670 patients in 25 clinics (925 in 13 telehealth intervention clinics and 745 in 12 control clinics) is characterized by the following:

Telehealth Intervention Clinics (n = 925):

- 70% Black, 27% White, 2% other, 1% missing
- 96% male, 4% female
- 3% <30 years old, 11% 30-39 years old, 18% 40-49 years old, 54% 50-65 years old, 14% >65 years old
- 70% 0 primary care clinic visits in prior year, 14% 1 primary care clinic visit in prior year, 16% ≥2 primary care clinic visits in prior year
- 12% 1 HIV clinic visit in prior year, 44% 2-3 HIV clinic visits in prior year, 40% 4-9 HIV clinic visits in prior year, 4% ≥10 HIV clinic visits in prior year
- 81% baseline retention in care
- 81% baseline viral suppression
- 36% depression
- 29% travel time to HIV clinic <60 minutes, 36% travel time to HIV clinic = 60-89 minutes, 13% travel time to HIV clinic = 90-119 minutes, 21% travel time to HIV clinic ≥120 minutes

Control Clinics (n = 745):

- 62% Black, 34% White, 2% other, 2% missing
- 96% male, 4% female
- 5% <30 years old, 9% 30-39 years old, 19% 40-49 years old, 51% 50-65 years old, 16% >65 years old
- 74% 0 primary care clinic visits in prior year, 13% 1 primary care clinic visit in prior year, 13% ≥2 primary care clinic visits in prior year
- 14% 1 HIV clinic visit in prior year, 48% 2-3 HIV clinic visits in prior year, 35% 4-9 HIV clinic visits in prior year, 3% ≥10 HIV clinic visits in prior year
- 80% baseline retention in care
- 82% baseline viral suppression
- 37% depression
- 11% travel time to HIV clinic <60 minutes, 40% travel time to HIV clinic = 60-89 minutes, 18% travel time to HIV clinic = 90-119 minutes, 31% travel time to HIV clinic ≥120 minutes

Assignment Method

A cluster randomized program evaluation design was conducted in three VA health care systems that began HIV telehealth programs in 2015-2016. Thirteen clinics with 925 participants were randomized to the telehealth intervention; 12 clinics with 745 participants were randomized to the control. A total of 1,670 people participated. Assignment of clinics and associated patients to arms involved 3 steps. First, geographic information system (GIS) software was used to divide geographic areas served by each of the three networks into smaller service areas assigned to each primary clinic. Second, administrative data were used to identify patients in care in each HIV clinic in the year before telehealth program initiation. Each patient was assigned to the nearest primary care clinic. Finally, clinics were pair matched based on the number of HIV clinic patient assigned to the primary care clinic and the distance between the primary care clinic and the HIV specialty clinic.

Comparison

The clinics that were not offered telehealth intervention during the evaluation year served as the control arm. Participants in control clinics were offered telehealth at the end of the evaluation year (a year later).

Relevant Outcomes Measured

- Viral suppression was defined as a binary variable indicating documented viral suppression based on viral load measurements obtained during routine care delivery and included in administrative data. It was coded 1 if HIV viral load was measured during the evaluation year and the last viral load was < 200 copies/mL and coded 0 if the viral load measure was not met.
- Retention in care was defined as having the required 2 HIV specialty clinic visits—either in-person or telehealth—with a provider (e.g., MD, physician’s assistant, or advanced practiced nurse) during the evaluation year.
- Engagement in care was measured as the total number of HIV visits. This outcome was not reported as a primary outcome in the study but is considered a relevant outcome in the Linkage to, Retention in, and Re-engagement in HIV Care and Structural Interventions chapters.

Participant Retention

- Participant retention was not reported.

Because participant retention is not a criterion for the Structural Interventions chapter, the Prevention Research Synthesis project does not evaluate that information.

Significant Findings on Relevant Outcomes

- In an intention-to-treat (ITT) analysis, telehealth patients had a significantly greater improvement in documented viral suppression during the evaluation year compared to control patients (78.3% vs 74.1%, respectively; absolute difference, 4.3%; 95% confidence interval [CI], 0.1% to 8.4%; RR, 1.06; 95% CI: 1.01 - 1.11; $p = 0.01$) adjusting for age, race, baseline measure of outcome variable, time in HIV care, and facility.
 - In a Complier Average Causal Effects (CACE) analysis which can be considered a type of exposure analysis that attempts to estimate the effect on those who complied with the intervention, telehealth patients had a significantly greater improvement in documented viral suppression during the evaluation year compared to control patients (91.5% vs 80.0%, respectively; absolute difference, 11.5%; 95% CI, 0.1% - 21.7%; RR, 1.14; 95% CI, 1.01 - 1.30; $p = 0.03$).
- Telehealth patients had more total HIV clinic visits than control group patients; the median number of total HIV clinic visits (i.e., combined telehealth and in-person) (range) was 4 (1–9). The median number of total clinic visits among the control patients (range) was 3 (0–14; $p = 0.01$).

Considerations

Additional significant positive findings on non-relevant outcomes

- None reported

Non-significant findings on relevant outcomes

- There were no significant differences between telehealth intervention patients and control patients for retention in care (ITT, 76.1% vs 72.6%; RR, 1.05; 95% CI, 1.00 - 1.10; $p = 0.06$; CACE, 86.4% vs 76.5%; RR, 1.13; 95% CI, 0.98 - 1.32; $p = 0.10$).

Negative findings

- None reported

Other related findings

- None reported

Implementation-research related findings

- None reported

Process/study execution-related findings

- Over 90% of eligible patients were offered telehealth according to logs maintained by local coordinators.
- Thirteen percent of patients living in areas where telehealth was available completed a telehealth visit in the evaluation year. Low telehealth use likely reflected the fact that patients in these three health care systems were already accustomed to traveling to the HIV clinic for care, and many could save relatively little travel time by using telehealth.
- The proportion of patients using telehealth increased as travel time saved increased, with 25.3% using telehealth if they could save more than an hour.

Adverse events

- None reported

Funding

Department of Veterans Affairs, Veterans Health Administration, Health Services Research and Development program (IIR# 15-147-1). Local quality improvement work to implement HIV telehealth programs was supported by the Veterans Health Administration’s Office of Rural Health.

REFERENCES AND CONTACT INFORMATION

Ohl, M. E., Richardson, K., Rodriguez-Barradas, M. C., Bedimo, R., Marconi, V., Morano, J. P., Jones, M. P., & Vaughan-Sarrazin, M. (2019). [Impact of availability of telehealth programs on documented HIV viral suppression: A cluster-randomized program evaluation in the Veterans Health Administration](#). *Open Forum Infectious Diseases*, 6(6), ofz206.

Researcher: [Michael Ohl, MD, MPH](#)

Division of Infectious Diseases
 University of Iowa Carver College of Medicine
 Center for Access and Delivery Research and Evaluation (CADRE)
 Mailstop 152, Iowa City VAMC
 Iowa City, IA 52246

Email: michael-ohl@uiowa.edu

