

# Disparities in Telehealth Use: Three Ways

CORE Cyberseminar Series

July 7, 2021

**CONNECTED CARE**

**Virtual Care CORE**



# Presenters

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**Samantha Connolly, PhD**



Clinician Investigator, VA Boston Center for Healthcare Organization and Implementation Research; Instructor of Psychology, Harvard Medical School Department of Psychiatry

# How to Measure Broadband Access and the Implications for Virtual Care

## July 2021

- The Study Team:
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- Ariana Shahnazi, PhD
- Kailey Mulligan, BA
- Peter Kaboli, MD, MS

A special thank you to our funders:

The Office of Connected Care and Virtual Care Core, under COR 20-199-05, OCC/COVID-19 RFA Project Title: Broadband Access as a Social Determinant of Health: The Association of Broadband Access with Changes in Use of Primary Care and Mental Health Services During the COVID-19 Pandemic

Comprehensive Access & Delivery  
Research & Evaluation (CADRE),  
Iowa City, IA



# Background

- VHA is a national leader in telehealth adoption.
- However, broadband internet is not available everywhere creating inequitable access, especially among already underserved populations
- *Objective: To use publicly available broadband data to determine associations between telemedicine uptake before and during the COVID-19 pandemic.*
  - But how does one define broadband availability?

# Federal Communications Commission (FCC) Broadband Data

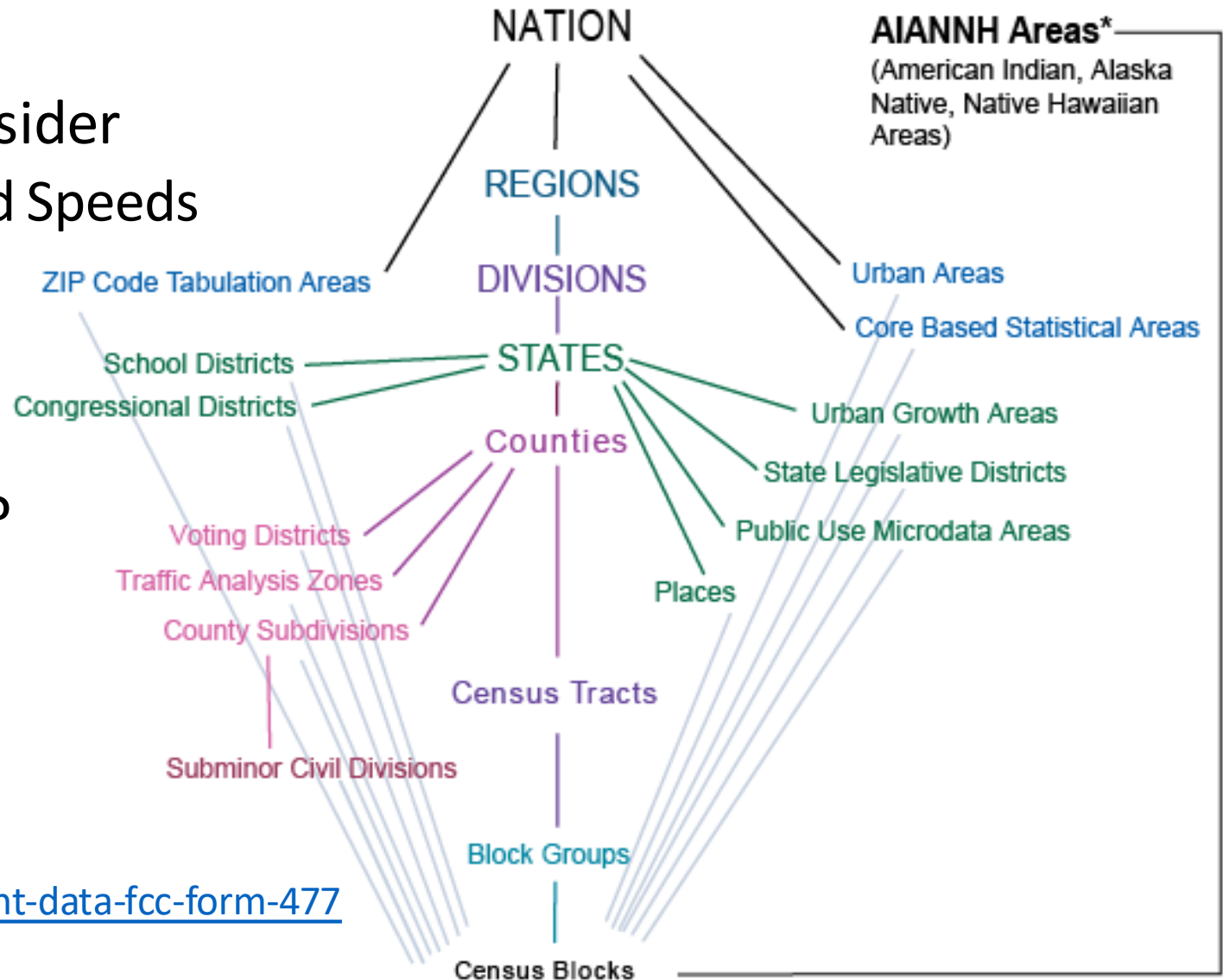
- Data Form 477 filed twice yearly by broadband providers
- Fixed Broadband Deployment data is available Dec 2014 – Jun 2020
- Adequate Broadband Speed for telehealth: 25 Mbps Down/ 3 Mbps Up
- NUANCE:
  - A provider files a list of the census blocks in which they do, or can, offer services to at least one location.
  - This does not mean that every location in the block has access to that technology or bandwidth, or that the number of providers is equivalent to consumer choices.
  - Consequence: Unidentified portions of a census block without broadband access.

Source: <https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477>

# FCC Broadband Data

- Measurement Options to Consider
  - Average Upload or Download Speeds
  - Number of Providers
  - Technology Offered
  - Penetration Rate
- What Geographic Unit to Use?
  - County
  - Census Block Group
  - Census Block

Standard Hierarchy of Census Geographic Entities

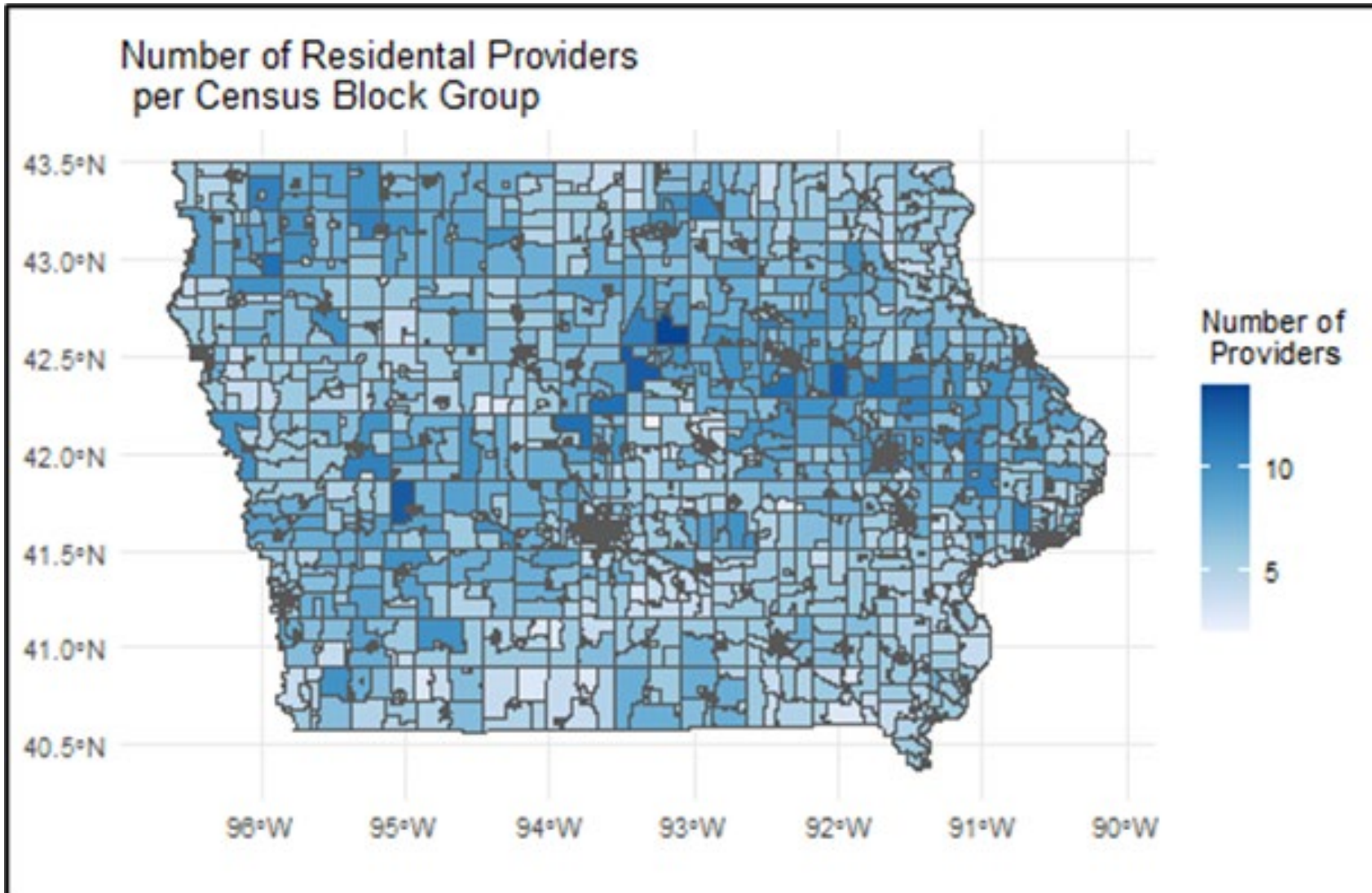


Sources:

<https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477>

<https://mcdc.missouri.edu/geography/sumlevs/>

# Example: Number of Unique Residential Providers per Census Block



The lighter the color, the fewer the number of providers on a scale of 0-14.

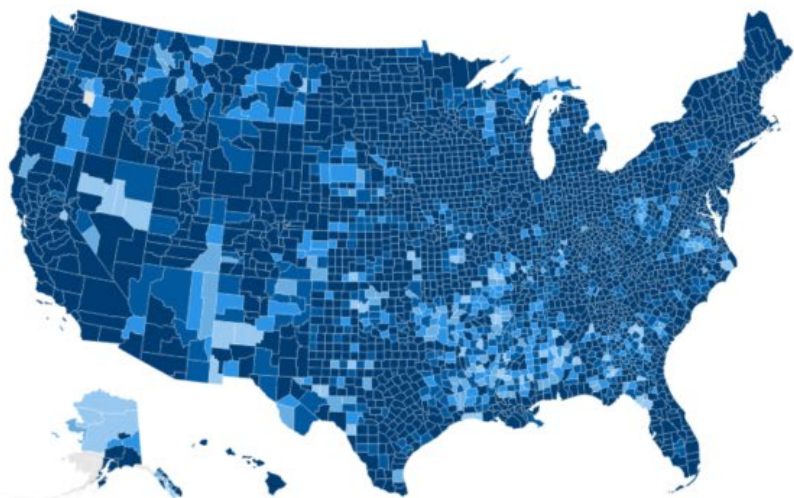
# Microsoft US Broadband Use Percentages Data

- Anonymized data collected by Microsoft.
- Based on estimated throughput speed when a Microsoft product is updated using the size of the package and the time required to download.
- Combined with the number of households per county and zip code.
- Counts the number of devices connected to the Internet using the adequate broadband speed definition (25Mbps/3Mbps).

Source: <https://github.com/microsoft/USBroadbandUsagePercentages>



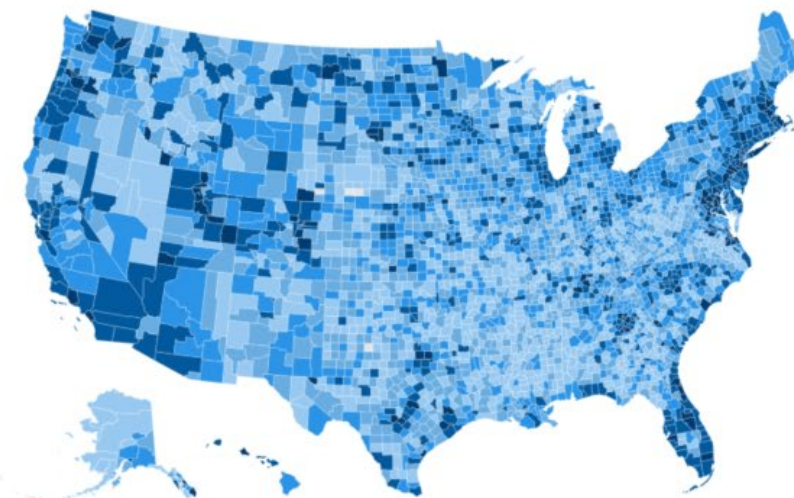
FCC indicates broadband is not available to ~14.5M people



FCC broadband availability\*  
0% >0 to 20% >20% to 40% >40% to 60% >60% to 80% >80% to 100%

\* FCC Broadband has or "could" provide greater than or equal to 25 Mbps / 3 Mbps

Microsoft data indicates ~120.4M people do not use the internet at broadband speeds



Broadband usage\*\*  
0% >0 to 20% >20% to 40% >40% to 60% >60% to 80% >80% to 100%

\*\* Broadband speeds greater than or equal to 25 Mbps

Sources: FCC Fourteenth Broadband report based on form 477 data from December 2019 and Microsoft data from October 2020  
To assist with additional broadband mapping analysis data has been made downloadable [here](#). Learn more in this [GitHub repository](#).

- Comparison of FCC and Microsoft Use Data
- Percent of people per county that use the Internet at Broadband Speeds (25Mbps/3Mbps)
- October 2020

# Summary

- There are many ways to define broadband “availability”
  - FCC Data is publicly available, but has limitations
  - Broadband DATA Act of March 2020 requires FCC to report more granular service availability data and create updated maps to better allocate broadband funding. Work in progress.
  - Microsoft Use data is new, but shows promise to more accurately reflect actual use (i.e., boots on the ground)
- Understand the pros/cons of each and match the definition to the study question.
- Next Steps: Finalize thresholds for broadband access and study the association with telehealth use.

# VC CORE Updates

- Portfolio Review Progress
  - >400 VC related projects identified since 2011 being abstracted
  - Conducting outreach to VA Program Offices, QUERI leadership, and others to identify non-research and operations projects related to VC
- VC State of the Art Conference Planning Underway
  - Conference dates TBD, targeting December 2021
- Two VC Workgroups Formed
  - Current workgroups are focused on Telemental Health and VC Data/Metrics
  - Have an idea for another workgroup? Please propose it!
- On the Horizon: VC Measures Wiki/Compendium
- For more information or to get involved with any of the above projects/workgroups please email [vhavirtualcarecore@va.gov](mailto:vhavirtualcarecore@va.gov)



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Center for the Study of Healthcare  
Innovation, Implementation & Policy

# Assessing Disparities in VA Telehealth Use During the COVID-19 Pandemic

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Center for the Study of Healthcare Innovation, Implementation, & Policy

VHA Health Services Research & Development

Los Angeles, CA

**Veterans Emergency Management Evaluation Center**

Department of Veterans Affairs

North Hills, CA

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Alison B. Hamilton, PhD, MPH

## **Operations Partners:**

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**Christine Lam, MD**

VA Long Beach Healthcare System  
(Primary Care)

**VA Virtual Care Core/VA Office of  
Connected Care**

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## Co-Investigators/Mentors

- Donna Washington, MD, MPH
- Alison Hamilton, PhD, MPH

## Operations Partners

- Rashmi Mullur, MD
- Christine Lam, MD

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- Shelby Smout, M.S.

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# Background

- **The COVID-19 pandemic laid bare longstanding racial/ethnic healthcare disparities**
  - Black, Hispanic, American Indian/Alaska Native (AI/AN) and Asian groups are at an elevated risk for COVID-19 infection, hospitalization, and death compared to Whites
- **Multiple contributing factors, including**
  - Overrepresentation of racial/ethnic minorities among essential workers
  - Higher population density in racial/ethnic minority neighborhoods
  - Reduced access to medical care
  - Structural racism



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# Background

- Since the pandemic **racial/ethnic minorities are experiencing higher rates of excess all-cause mortality during the pandemic *after* accounting for COVID-19 deaths**
  - *May reflect disparities in access to/quality of care*
- Prior disasters, such as Hurricane Katrina in New Orleans, illustrate the consequences of missed medical care for racial/ethnic minority populations
- Ongoing access to high-quality care is vital to mitigating health disparities



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# Background

- **U.S. healthcare systems providers ramped up telehealth after the onset of the COVID-19 pandemic**
  - Studies prior to COVID-19 pandemic report racial/ethnic disparities in telehealth use
  - During the COVID-19 pandemic, mixed evidence has emerged regarding telehealth disparities: Higher, lower, and similar telehealth use among minorities has been reported
  - Telehealth disparities during COVID-19 could have longer term negative impacts on racial/ethnic minority health because of reduced access to care



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# Background

- **Cultural factors may affect telehealth uptake among racial/ethnic minorities**
  - Past research indicates lower telehealth uptake of some telehealth modalities, despite availability of requisite technology
- **Potential barriers affecting telehealth uptake among racial/ethnic minorities:**
  - Concerns about
    - credentials of telehealth providers
    - privacy/confidentiality
    - diminished interpersonal rapport in telehealth context
  - Technological barriers/digital divide



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# Background

- **The VA rapidly ramped up telehealth in the wake of COVID-19 to facilitate care continuity**
  - Initiatives such as VA's Digital Divide program aim to facilitate telehealth uptake in vulnerable populations
  - Prior studies with overall VA population show slightly lower use among racial/ethnic minorities
- **Many prior VA studies focused on increasing access for rural communities, which are predominantly White**
- **More work is needed on telehealth access during COVID-19 among urban-dwelling minorities**
  - Higher concentration of COVID-19 risk factors such as population density, essential workers, income disparity



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# Current study

- **Aim: To examine telehealth uptake among racial/ethnic minorities in the VA Greater Los Angeles Healthcare System**
  - Findings can be used to efficiently allocate resources for equitable dissemination of telehealth
  - Care continuity and equitable access to care vital to mitigating impacts of health disparities during the COVID-19 pandemic



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# Methods

- **Sample**

- VA Greater Los Angeles Healthcare System Veteran users with 1+ VA primary care or mental health appointment(s) between 3/1/19 and 2/29/20.
- Black, Hispanic, and White minorities included based on prior evidence of telehealth disparities



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## Setting

VA » Locations » Veterans Health Administration » VISN 22: Desert Pacific Healthcare Network » VA Greater Los Angeles Healthcare System (GLA)

### Locations

#### VA Greater Los Angeles Healthcare System (GLA)

[View the Web Site](#) | [CBOCs/OPCs](#)

11301 Wilshire Boulevard  
Los Angeles, CA 90073

Phone: 310-478-3711

Fax: 310-268-4779

[Map](#) [Driving Directions](#)



#### Facility Overview

The VA Greater Los Angeles Healthcare System (VAGLAHS) is the largest integrated healthcare organization in the Department of Veterans Affairs. It is a Joint Commission accredited, complexity level 1a facility serving Veterans throughout Kern, Los Angeles, San Luis Obispo, Santa Barbara, and Ventura counties. Outpatient clinics are located in: Gardena, San Gabriel, San Luis Obispo, East Los Angeles, Lancaster, Oxnard, Santa Maria, and Santa Barbara. A list of all VAGLAHS facilities, is available on our website's [directions page](#).



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# Methods

- **Data Collection**

- Obtained cohort race/ethnicity, demographics, and medical comorbidities from the VA Corporate Data Warehouse (CDW)
- Used stop codes to identify VA Video Connect (VVC) visits between 6/1/20 and 11/30/20

- **Data Analysis**

- Logistic regression analyses
  - Covariates: age, gender, medical comorbidities (diabetes, obesity, hypertension, peripheral vascular disease, ischemic heart disease)
- Separate analyses conducted at station and site level

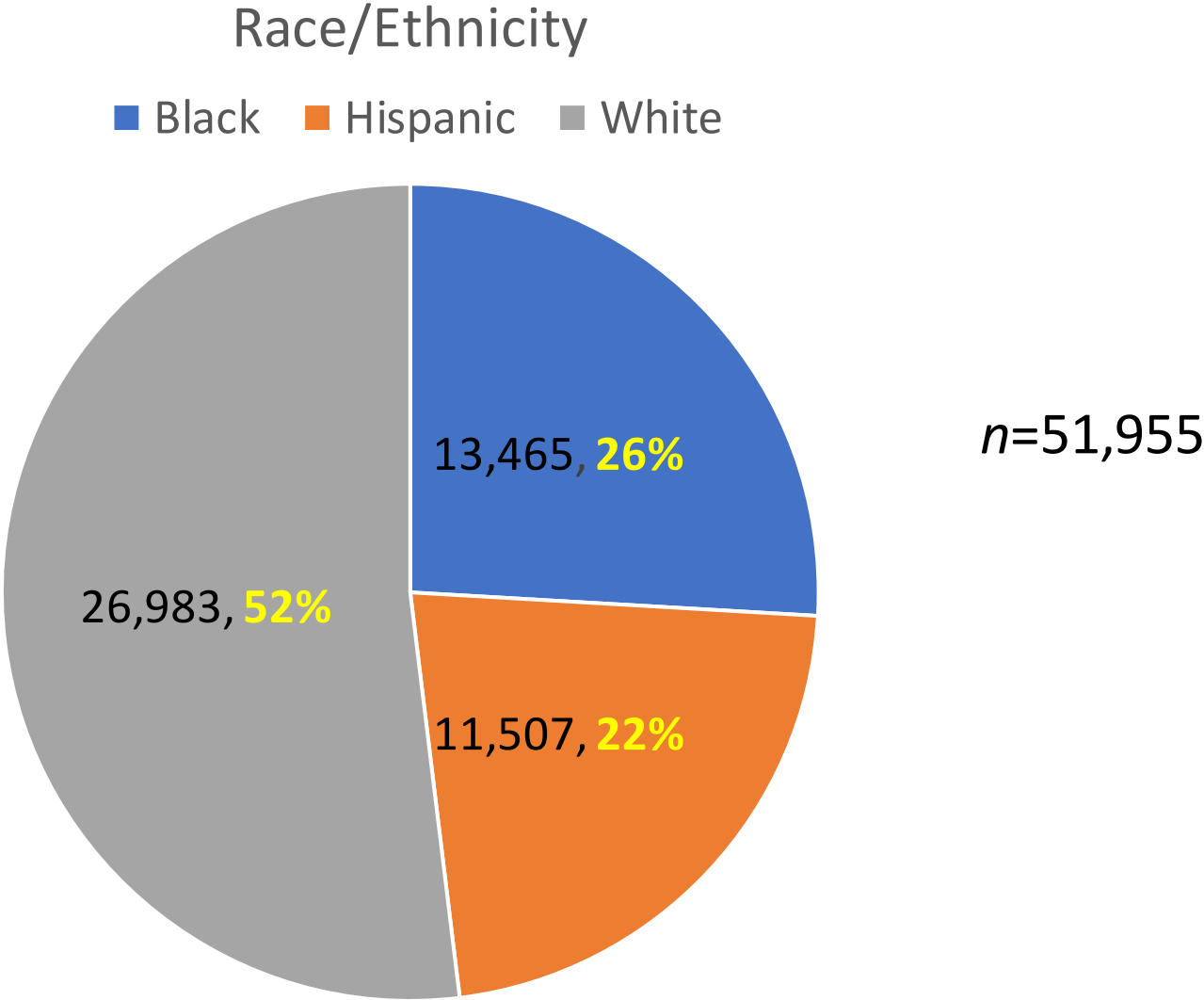


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# Results

## Patient Characteristics



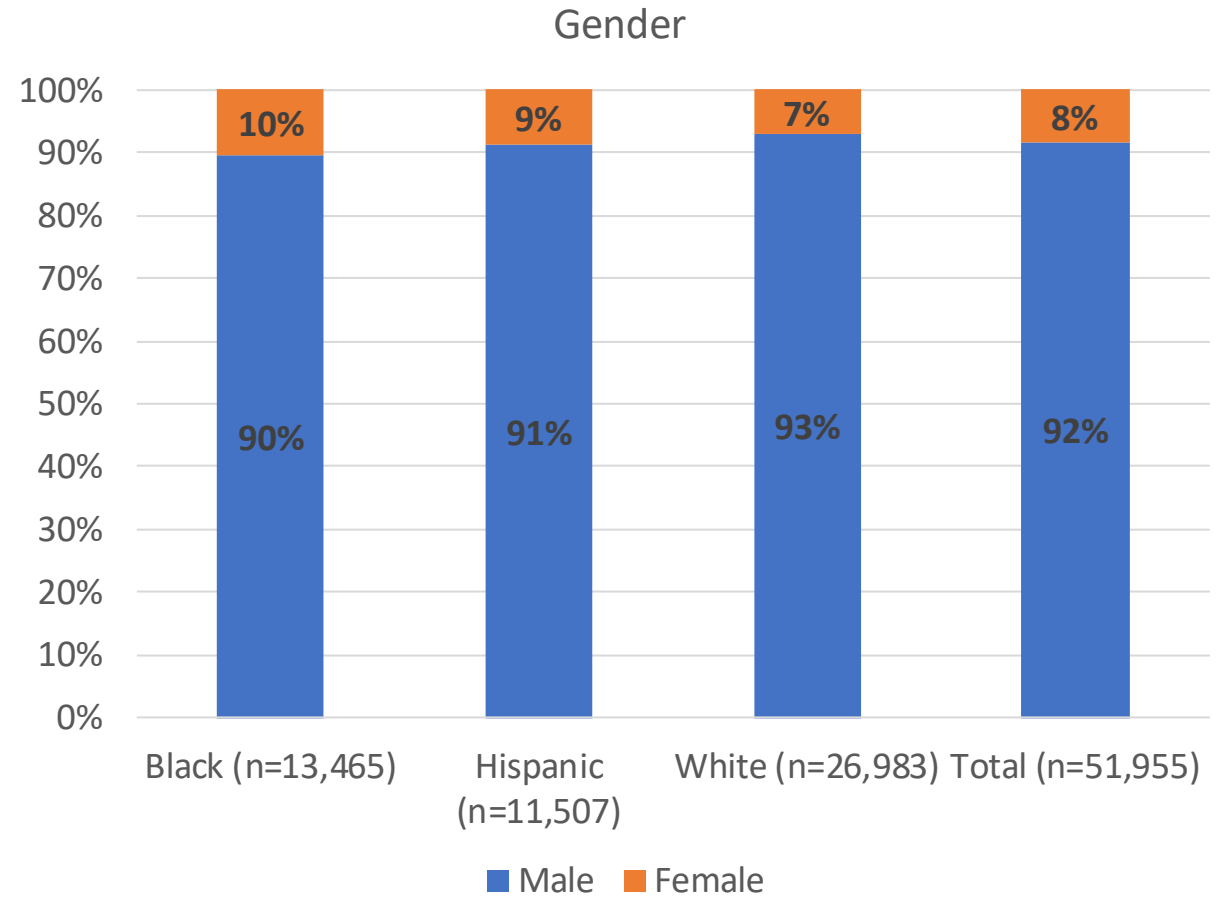
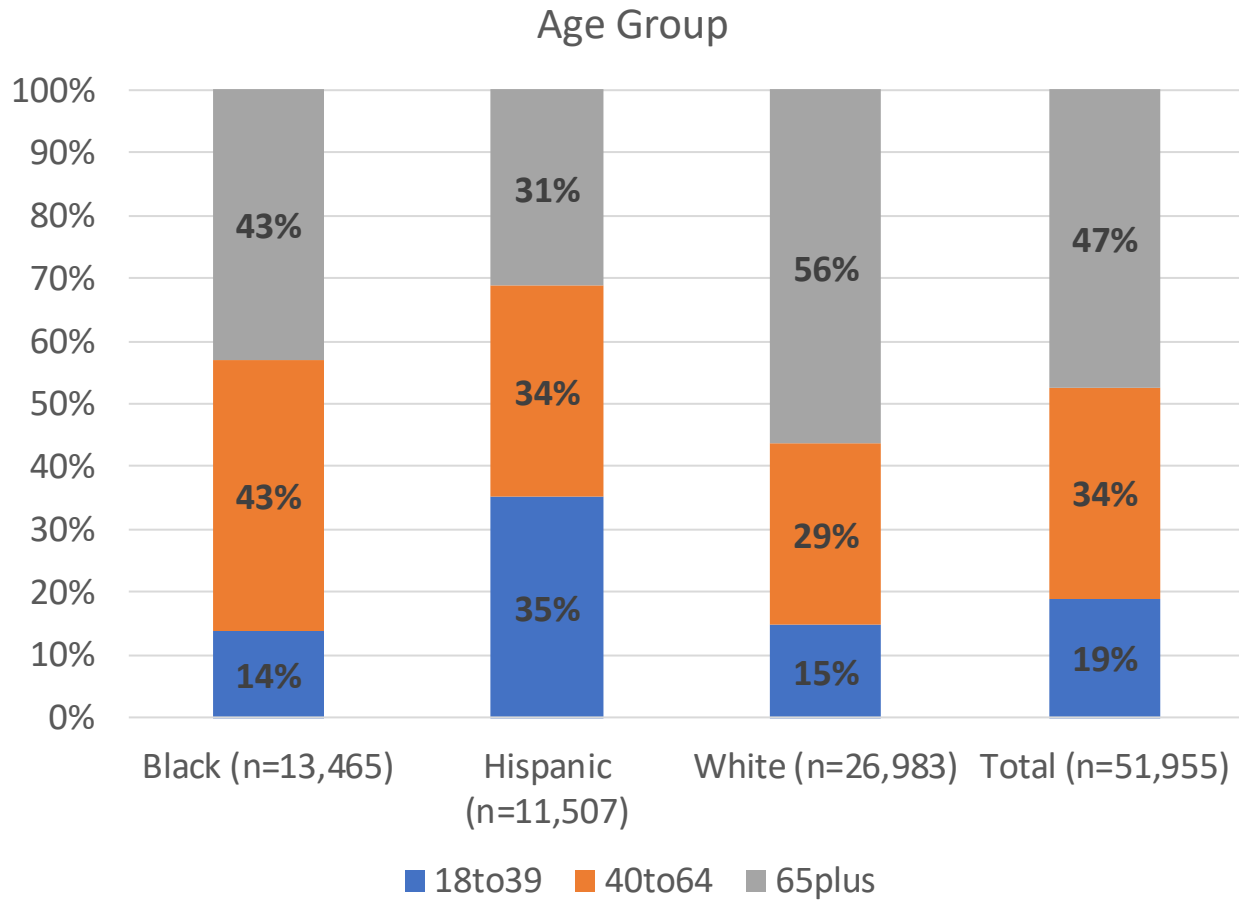
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All Veterans reporting Hispanic ethnicity categorized as Hispanic

# Results

## Patient Characteristics

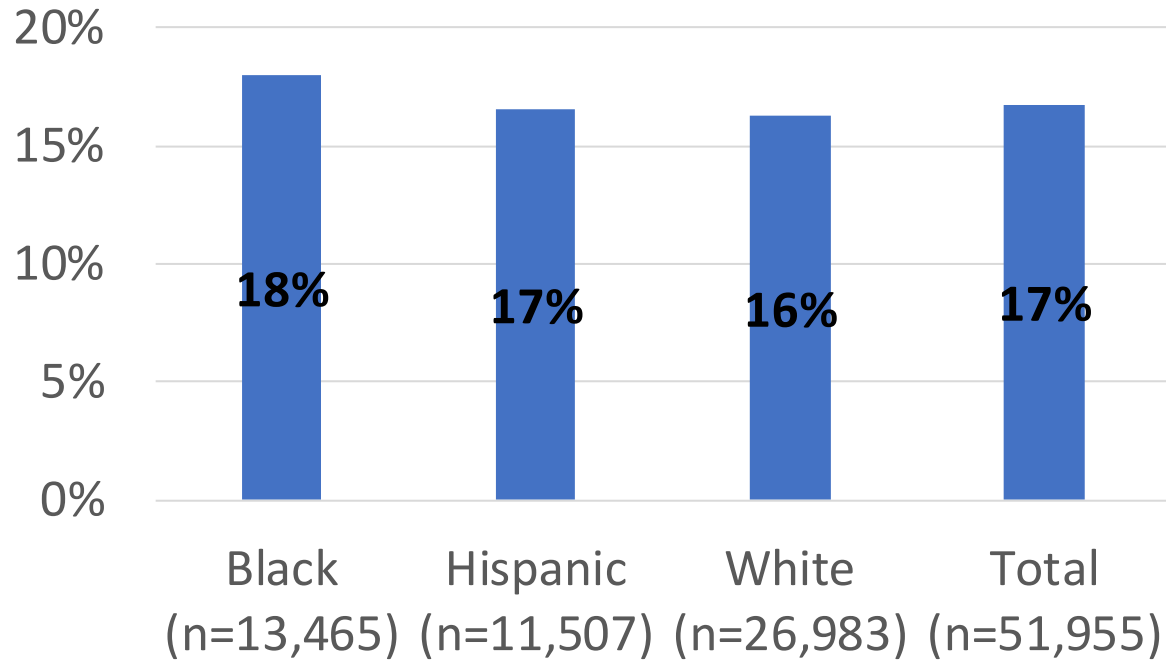




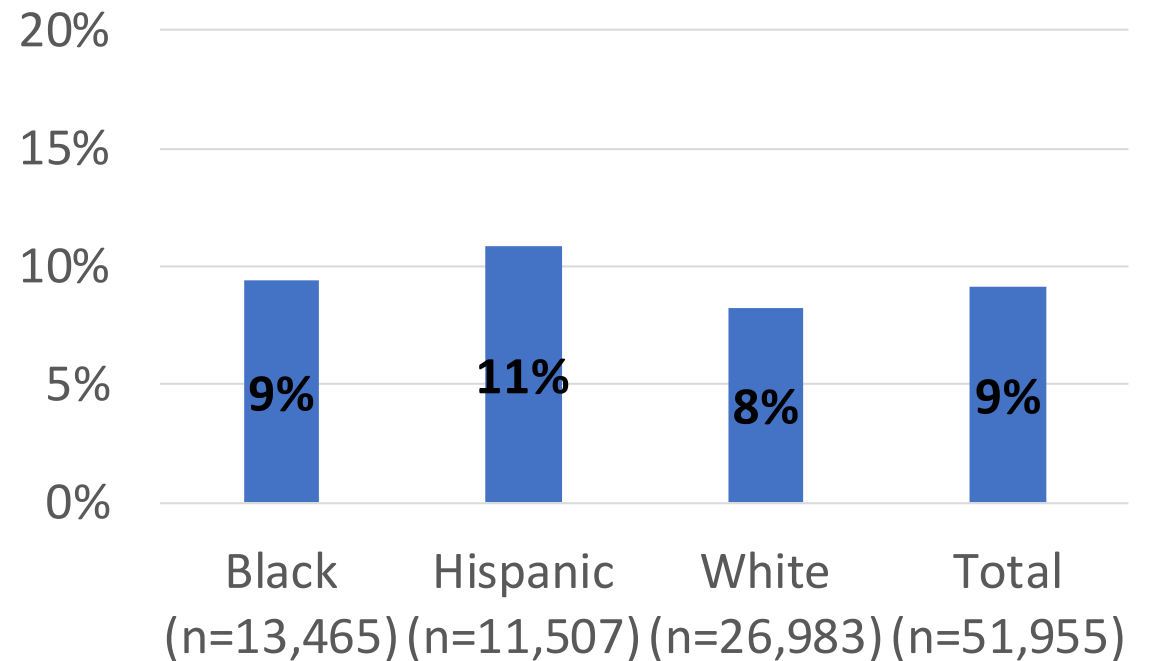
# Results

## VA Video Connect Utilization

### Primary Care VA Video Connect Utilization



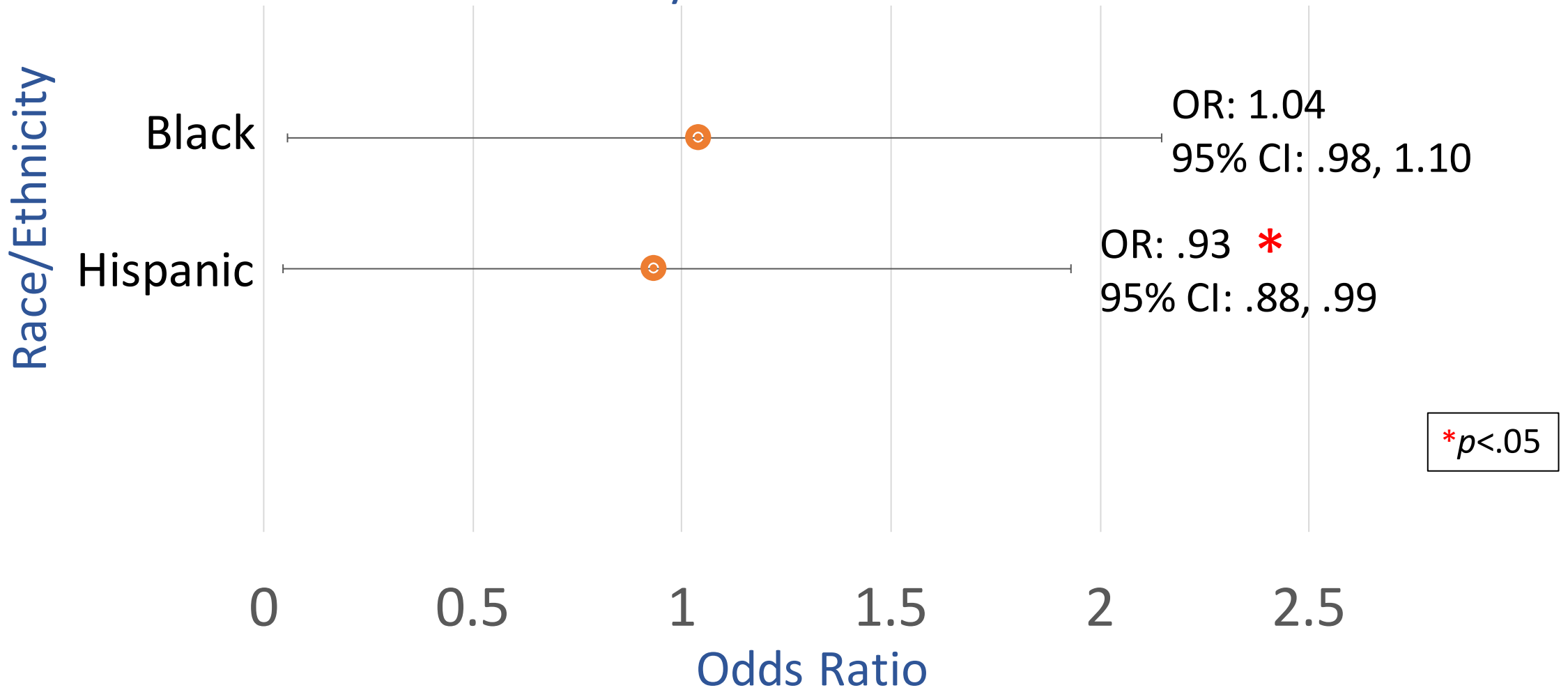
### Mental Health VA Video Connect Utilization



# Results

## VA Greater Los Angeles (Station Level)

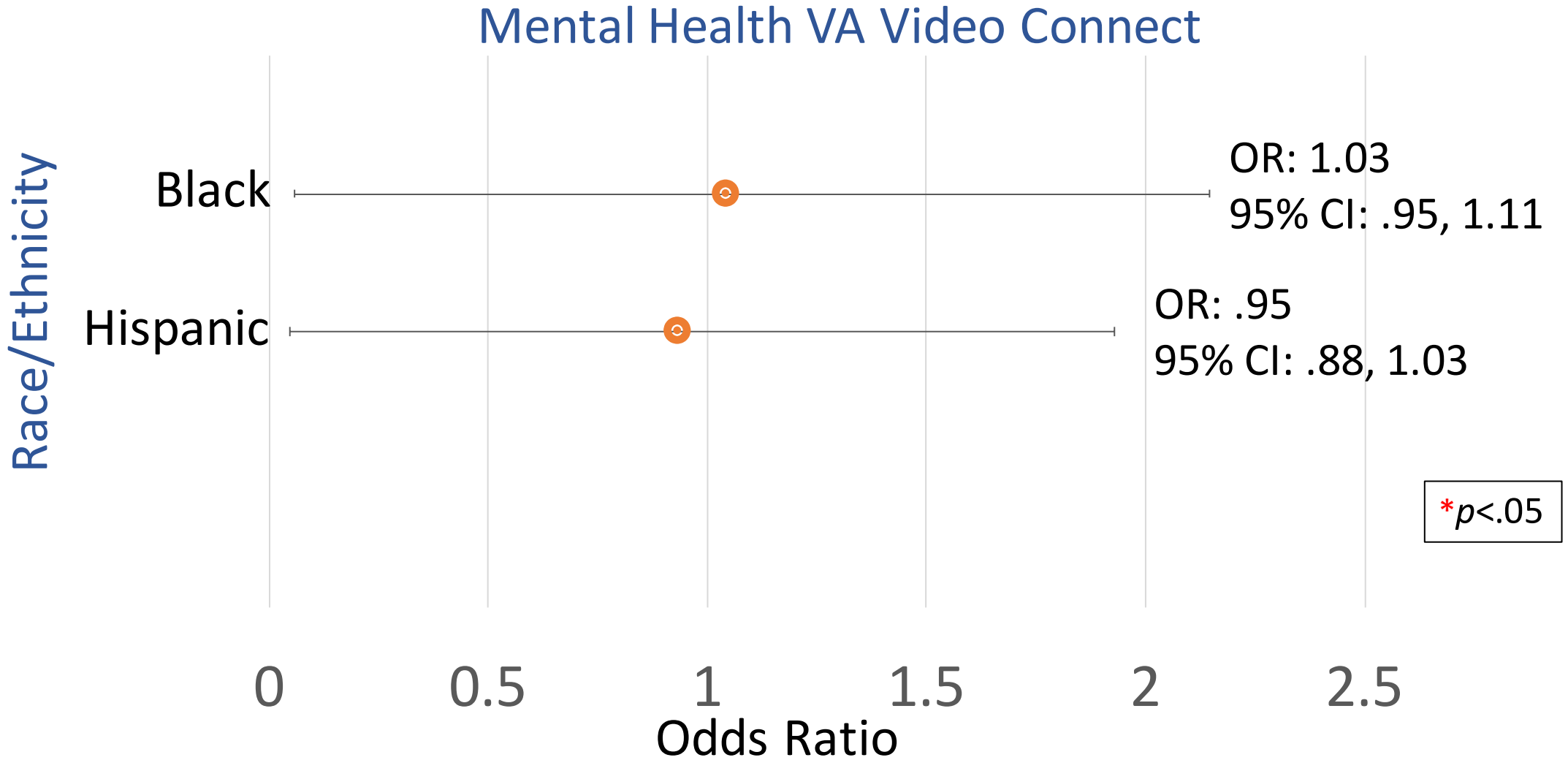
### Primary Care VA Video Connect



Reference group: White. Covariates: Age, Gender, Medical Comorbidities

# Results

## VA Greater Los Angeles (Station Level)



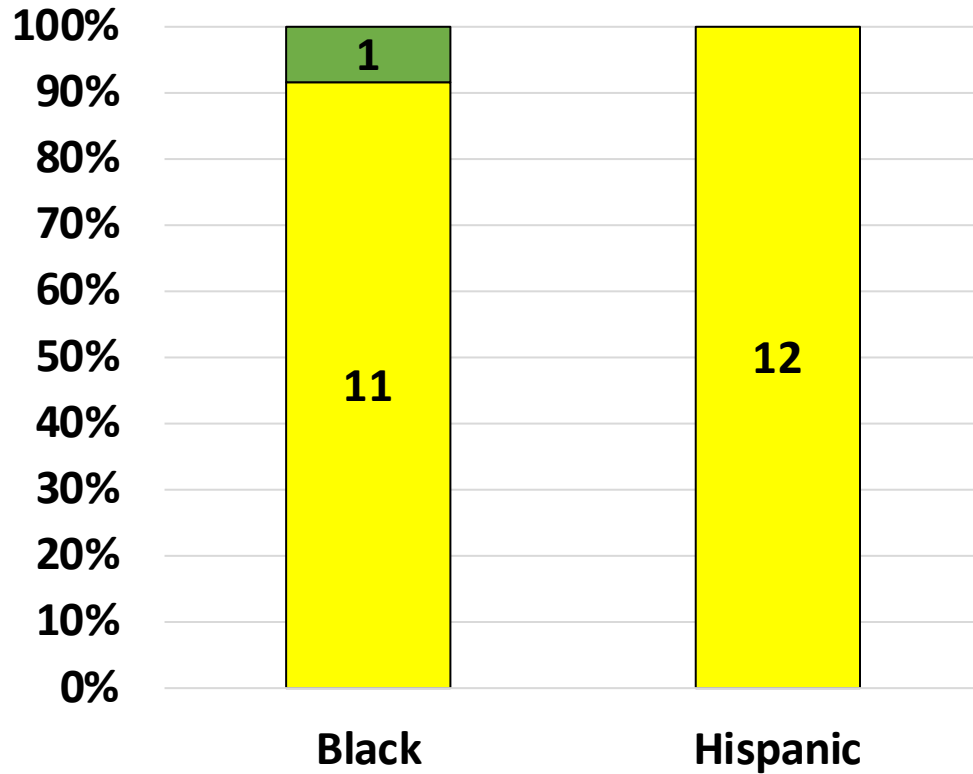
Reference group: White. Covariates: Age, Gender, Medical Comorbidities

# Results

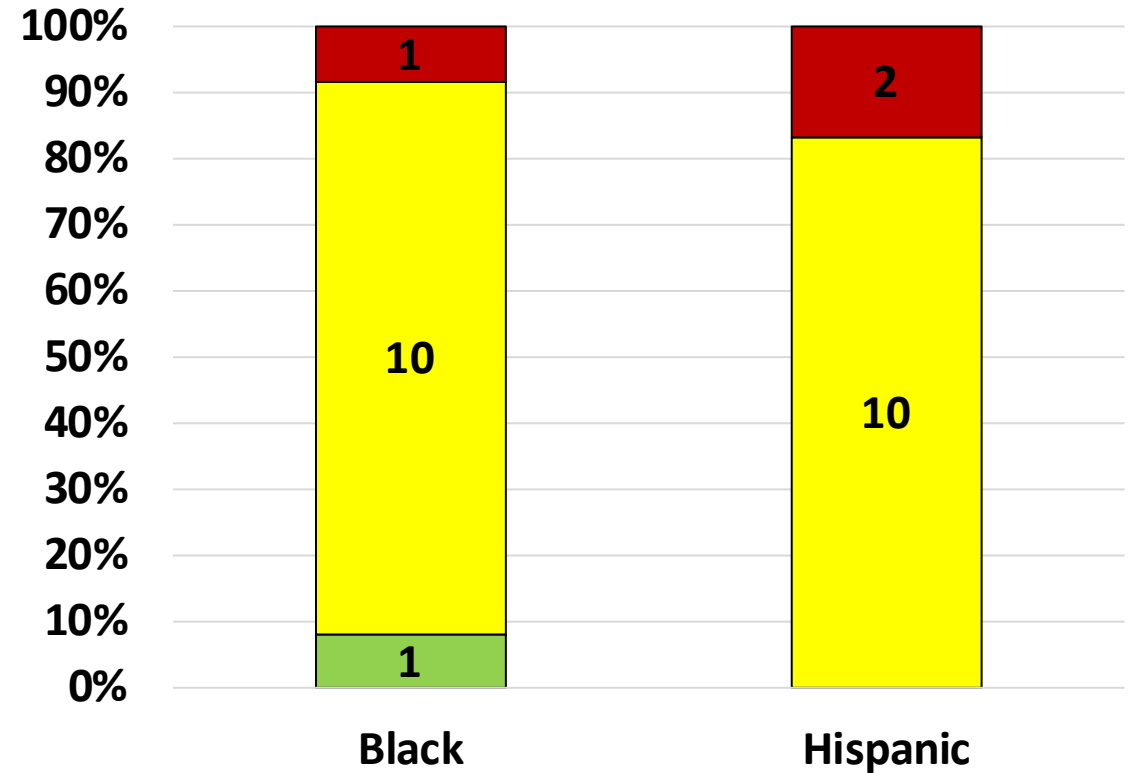
## VA Greater Los Angeles (Site Level)



### Primary Care VA Video Connect



### Mental Health VA Video Connect



Reference group: White. VVC=VA Video Connect

# Summary

## Variation in race differences in VVC use across and between Greater Los Angeles VA sites

- Station Level
  - Slightly lower primary care VVC use among Hispanic patients
  - No racial/ethnic differences in mental health VVC use
- Site Level
  - No racial/ethnic disparities in primary care VVC use
  - Lower racial/ethnic minority mental health VVC use at 3/12 (25%) sites



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# Discussion

- VVC uptake varied in urban, predominantly minority VA setting
- Strategies are needed to facilitate equitable telehealth use throughout the VA and in diverse communities
- Future directions
  - Qualitative work at sites with evidence of race disparities to discuss barriers and facilitators of VVC use



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# Predictors of patient and provider use of telemental health within the Department of Veterans Affairs during the COVID-19 pandemic

**Samantha Connolly, PhD**

*VA Boston Center for Healthcare Organization and Implementation Research*

*Harvard Medical School Department of Psychiatry*

**VA**



U.S. Department  
of Veterans Affairs





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- No conflicts of interest to report.

# What do I mean by telemental health?

*Remote mental health care delivered in real-time via videoconferencing or phone*



- Can increase access to care by eliminating barriers such as:
  - Travel to appointments (distance, time, traffic, parking, inclement weather)
  - Child or elder care responsibilities that make leaving home difficult
  - Stigma/anxiety towards receiving in person care
- During COVID, providing virtual care was no longer a choice
  - In-person versus video largely became video versus phone
  - Phone care, while eliminating the visual component of video or in-person appointments, often has fewer barriers to use



# dig·it·al di·vide

*noun*

the gulf between those who have ready access to computers and the Internet, and those who do not.  
"a worrying "digital divide" based on educational attainment and income"

## Assessing Telemedicine Unreadiness Among Older Adults in the United States During the COVID-19 Pandemic

Kenneth Lam, MD<sup>1</sup>; Amy D. Lu, MD<sup>1</sup>; Ying Shi, PhD<sup>1</sup>; [et al](#)

[» Author Affiliations](#) | [Article Information](#)

*JAMA Intern Med.* Published online August 3, 2020. doi:10.1001/jamainternm

## Telemedicine and the Forgotten America

Howard M. Julien [✉](#), Lauren A. Eberly, Srinath Adusumalli

Originally published 11 Jun 2020 |

<https://doi.org/10.1161/CIRCULATIONAHA.120.048535> | *Circulation.* 2020;142:312–314

## Strategies for Digital Care of Vulnerable Patients in a COVID-19 World—Keeping in Touch

[Darrell M. Gray II, MD, MPH<sup>1</sup>](#); [Joshua J. Joseph, MD<sup>2</sup>](#); [J. Nwando Olayiwola, MD, MPH<sup>3</sup>](#)

[Author Affiliations](#) | [Article Information](#)

## Quality of care

- **Barriers to video use are concerning as phone care may be lower quality in some circumstances**
  - Less robust phone RCT findings as compared to video trials
  - Smoking cessation studies show poorer patient medication compliance, satisfaction, perceived support from their provider, treatment completion, and abstinence rates in phone versus video conditions
- **Providers may also be hesitant to see higher risk patients from a distance altogether**

## Provider level differences

- Potential age differences in line with the digital divide
- Potential discipline-level differences based on caseload size, appointment length and frequency

What are patient and provider predictors of telemental health use during COVID?

# Patient methods

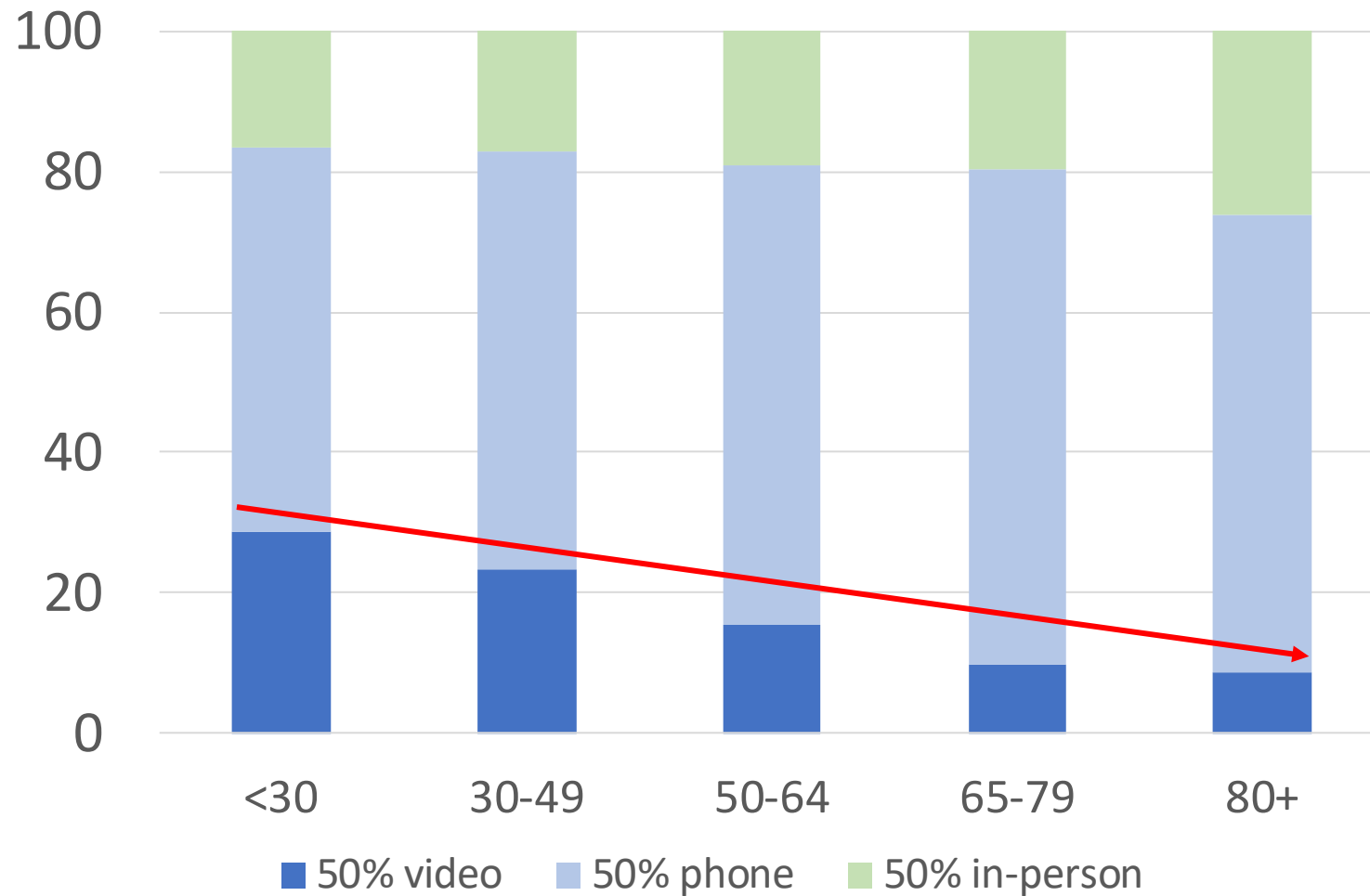
- Sample: **1,054,670** Veterans with at least one outpatient MH appointment between March 11- July 10, 2020
- Logistic regression examining likelihood of having **the majority** of MH appointments by video, phone, or in-person



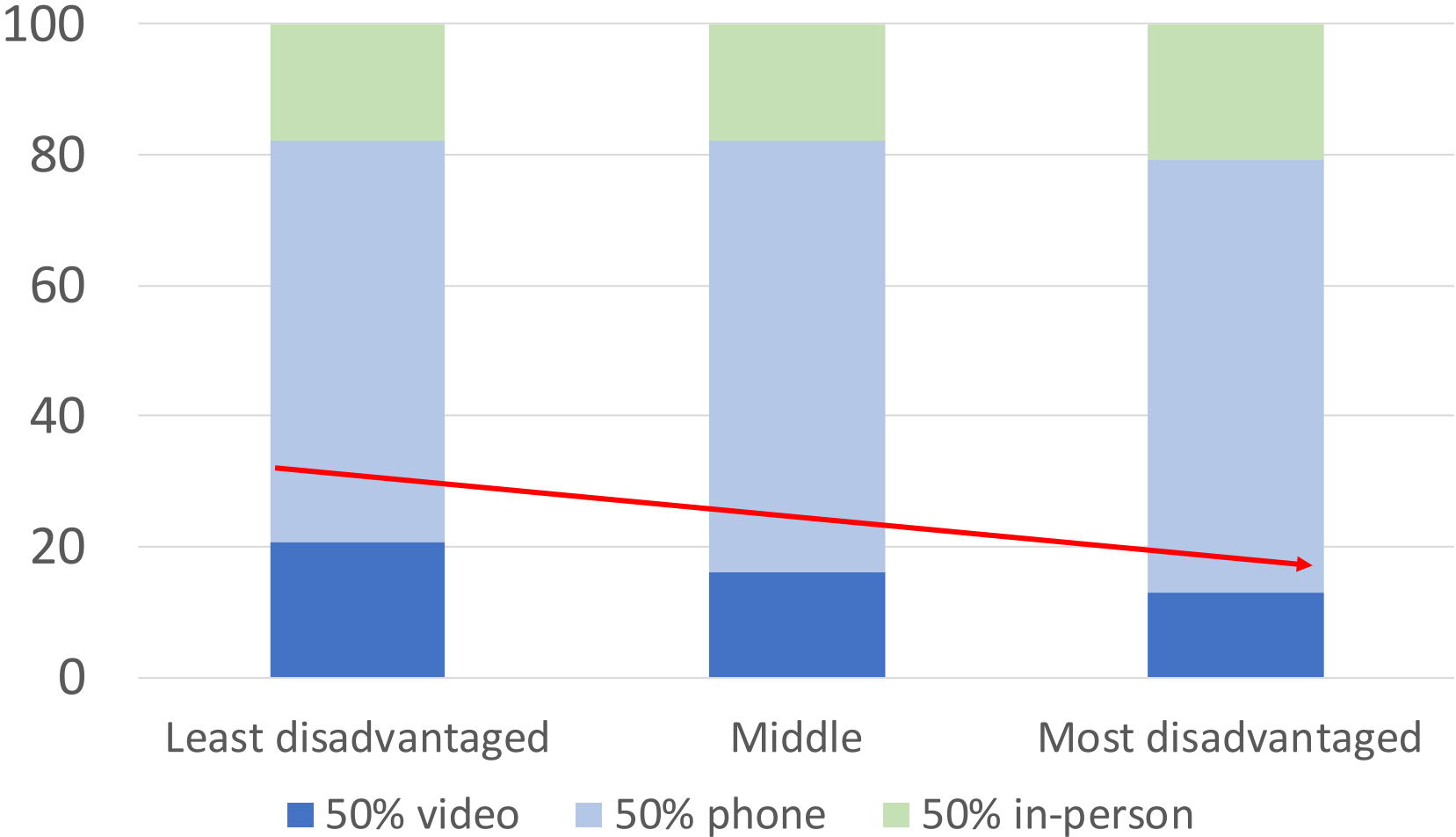
## Patient findings

- **Lower odds** of having majority **video** appts compared to phone or in-person:
  - Age 65+
  - Low socioeconomic status
- **Higher odds** of having majority **in-person** appts compared to video or phone:
  - Schizophrenia diagnosis
  - History of MH hospitalization
- Women more likely to have video appts
- No significant differences based on race

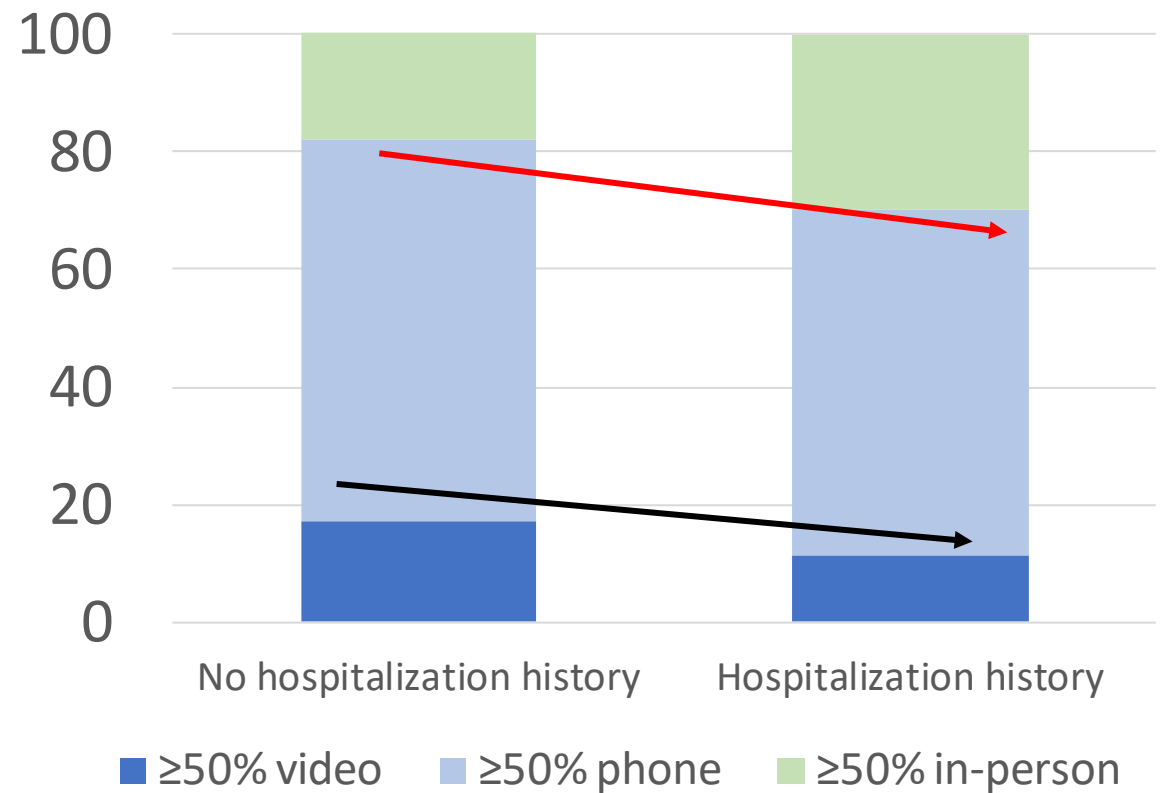
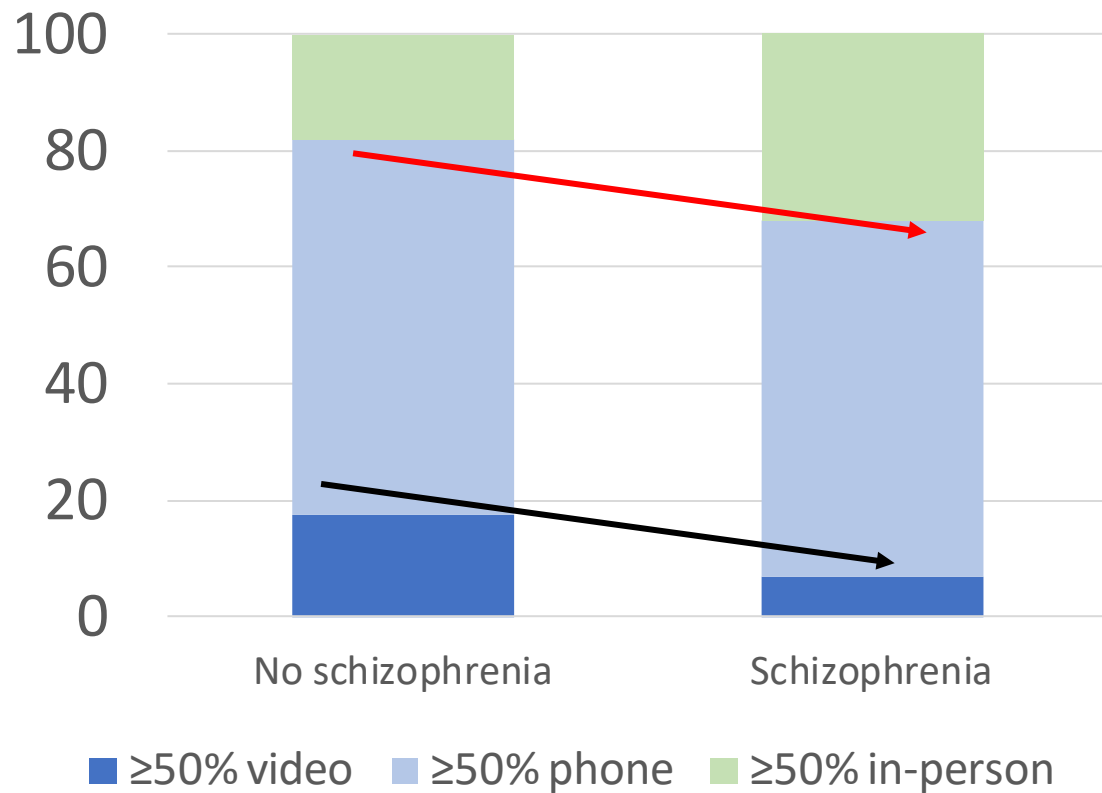
# Age differences in % of VA MH patients receiving $\geq 50\%$ of their care via video during COVID-19



# Socioeconomic differences in % of VA MH patients receiving $\geq 50\%$ of their care via video during COVID-19



# Diagnostic severity differences in % of VA MH patients receiving $\geq 50\%$ of their care via video during COVID-19



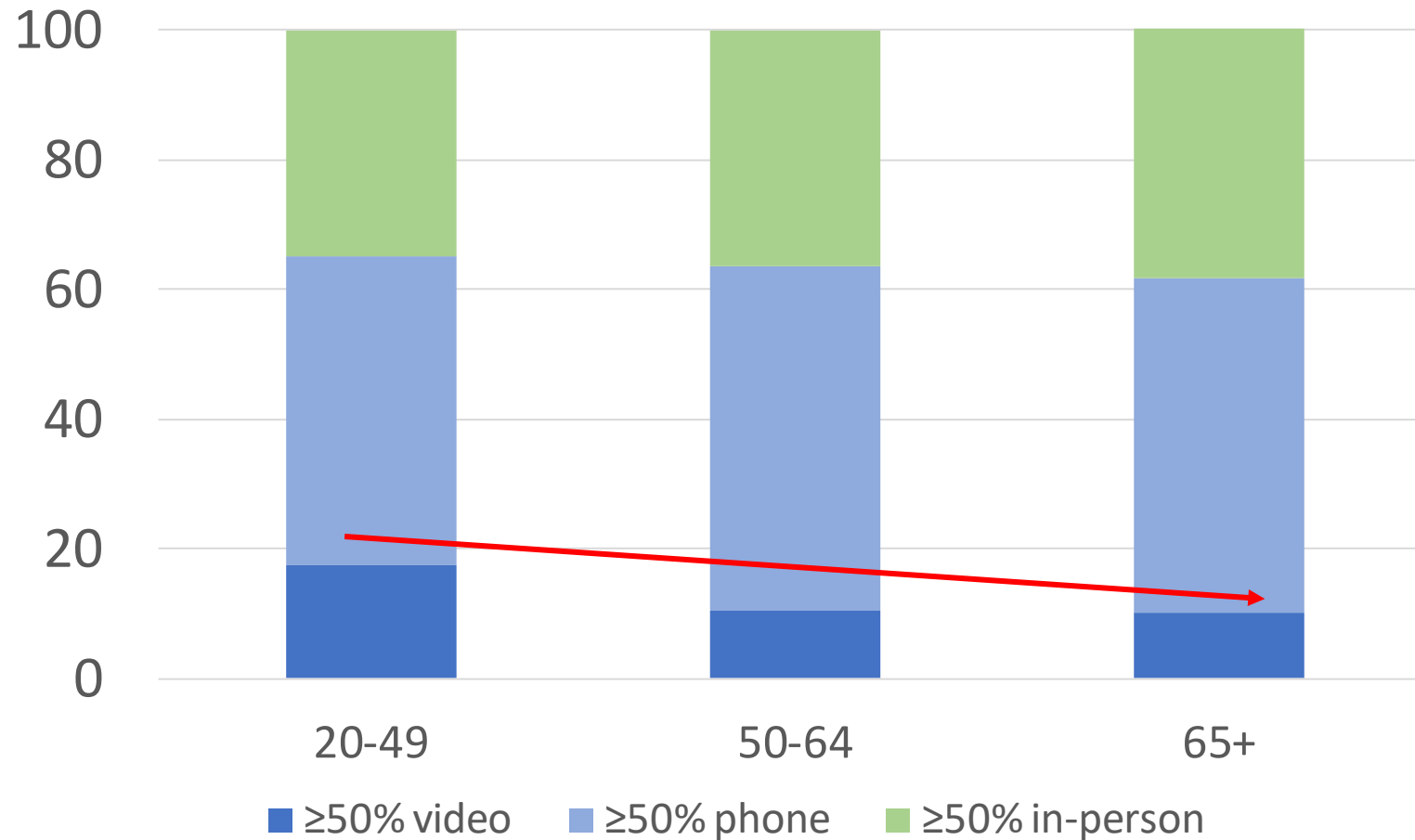
## Provider methods

- Sample: **23,712** providers with at least one outpatient MH appointment between March 11- July 10, 2020
- 25.21% psychiatrists, 23.41% psychologists, 30.81% other non-medical providers (eg social workers), and 20.56% other medical providers (eg NPs)
- Logistic regression examining likelihood of conducting **the majority** of MH appointments by video, phone, or in-person

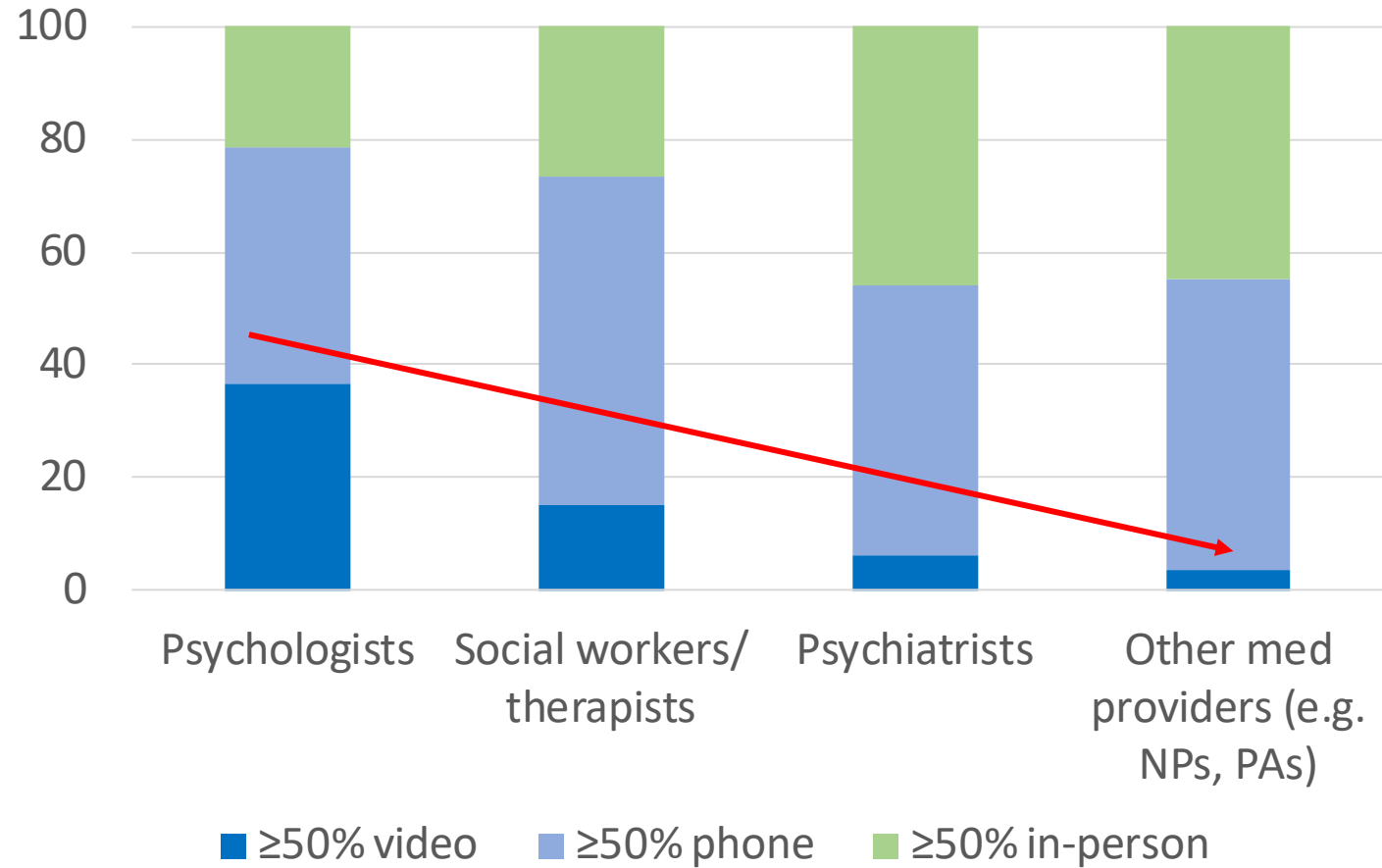
## Provider findings

- **Lower odds** of having majority **video** appts compared to phone or in-person:
  - Age 65+
  - Non-psychologists

# Percentage of providers delivering $\geq 50\%$ of MH care via video, phone, and in-person during COVID, by age



# Percentage of providers delivering $\geq 50\%$ of MH care via video, phone, and in-person during COVID, by discipline





What might explain discipline-level differences?

# VA New England Provider Telehealth Survey

- Surveyed 1607 providers across 8 VA New England hospitals in May-June 2020
  - Conducted secondary analyses of 497 mental health providers:
    - 45% psychologists
    - 27% social workers
    - 21% psychiatrists
    - 6% nurse practitioners
- Non-medical
- Medical

# Findings

- **Medical providers less likely to prefer video over phone**
  - Medical: 51% prefer video, 41% prefer phone
  - Non-medical: 75% prefer video, 16% prefer phone
- **Medical providers are less satisfied with VVC overall**
  - 23% are dissatisfied/very dissatisfied vs. 12% for non-medical

# Findings

- **Medical providers report more patient barriers to video use**
  - Patient difficulty using device is significant challenge
    - 38% medical vs. 20% non-medical
  - Lack of technical support/training for patients is significant challenge
    - 29% medical vs. 16% non-medical
- **Scheduling is a problem**
  - 35% are dissatisfied/very dissatisfied vs. 13% for non-medical

# Conclusions

- Findings support existence of a digital divide- additional resources/training needed
- We need more data to understand **differences in quality of care** provided via phone, video, or in-person and how this may vary by diagnosis/type of treatment
- Medical mental health providers need additional support to increase rates of video use
- Overall, barriers to use must be addressed given that virtual care will remain an important mode of treatment delivery for the long term

# Thank you!

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Christopher Miller

Stephanie Shimada

Kelly Stolzmann

Jennifer Sullivan

Kendra Weaver



[samantha.connolly@va.gov](mailto:samantha.connolly@va.gov)



[@Sam\\_L\\_Connolly](https://twitter.com/Sam_L_Connolly)

THANK YOU!

## Questions

To subscribe to the VC CORE listserv, please email  
[VHAVirtualCareCORE@va.gov](mailto:VHAVirtualCareCORE@va.gov)

 @VA\_VCCORE

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