Comparative Effectiveness and Outcomes of Telehealth Interventions: VA Studies in Neurology and Substance Use Disorder Treatment

CORE Cyberseminar Series

July 12, 2023

CONNECTED CARE

Virtual Care CORE

Announcements

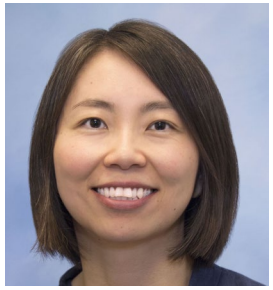
1. VC CORE Directory – live on SharePoint
2. RFA season is ~~approaching~~ here; reserve capacity!
3. Work on VC measures is accelerating – we are eagerly crowdsourcing:
   a) Virtual Care outcome measures on the Metrics Compendium
   b) Self-reported measures – survey coming this summer

To subscribe to the VC CORE listserv, please email VHAVirtualCareCORE@va.gov

@VA_VCCORE

Presenters

Lewei (Allison) Lin, MD, MS



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Comparative Effectiveness of Telehealth for Substance Use Disorders in VHA: COVID-19 and Beyond

Lewei (Allison) Lin MD, MS

Research Investigator

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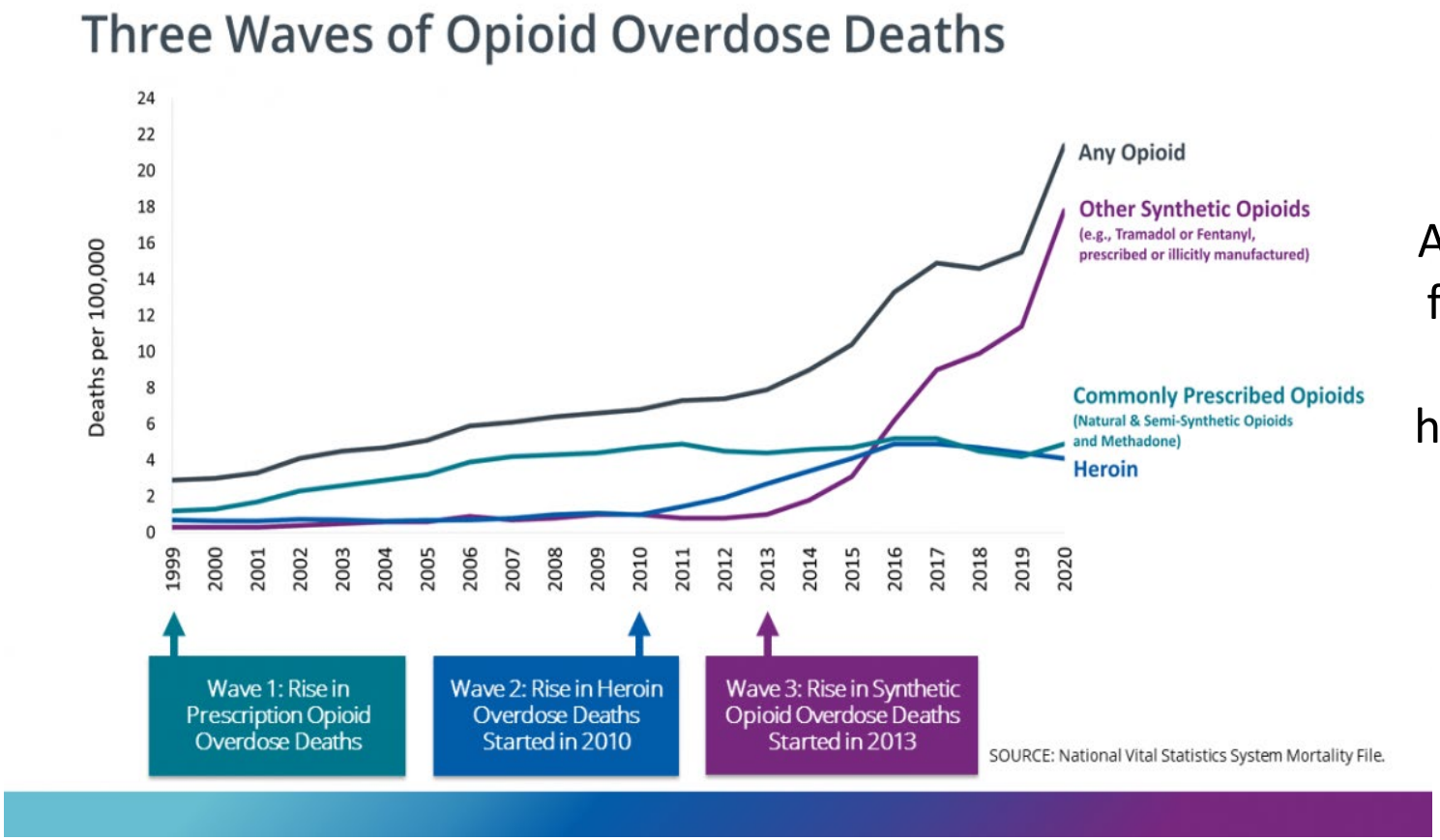
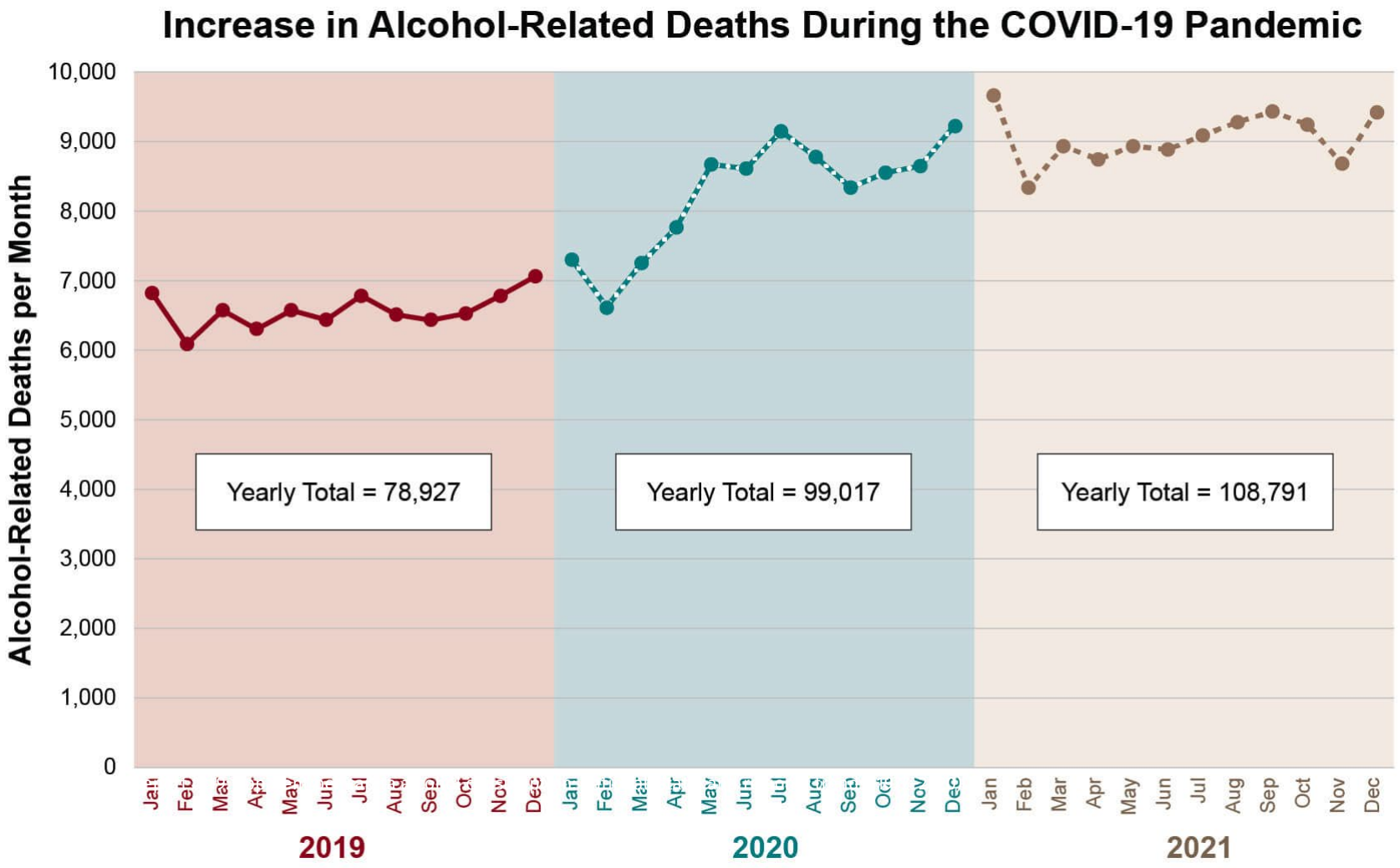
Worsening overdose and substance use disorder (SUD) epidemics



106,669
Americans died from overdose in 2021, the highest number ever


Increase in Alcohol-Related Deaths During the COVID-19 Pandemic
Alcohol-Related Deaths per Month
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Yearly Total = 78,927
Yearly Total = 99,017
Yearly Total = 108,791
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2019
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2020
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2021

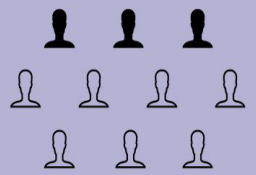
Effective treatments for opioid & other SUDs exist

Methadone And Buprenorphine Are Associated With Reduced Mortality After Nonfatal Opioid Overdose

RETROSPECTIVE COHORT, MASSACHUSETTS PUBLIC HEALTH DATASET, 2012-2014

17,568 opioid overdose survivors
with ambulance or hospital encounter

Only 3 in 10 receive MOUD*
over 12 months of follow-up



*Medication for Opioid Use Disorder

Mortality at 12 months:
4.7 deaths / 100 person-yrs

Association of MOUD* with mortality:

Methadone	↓ 53%
Buprenorphine	↓ 37%
Naltrexone**	↔

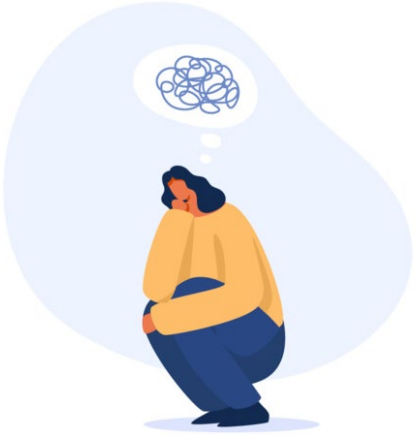
** *limited by small sample*

Larochelle et al. *Annals of Internal Medicine*. 2018.

Low SUD treatment rates

- Estimates of ONLY ~10% of patients with alcohol use disorder and ~33% of patients with opioid use disorder receive effective treatments.

- Even in those who access/start treatment, retention is low and there is high risk for overdose and other negative outcomes when patients stop treatment.



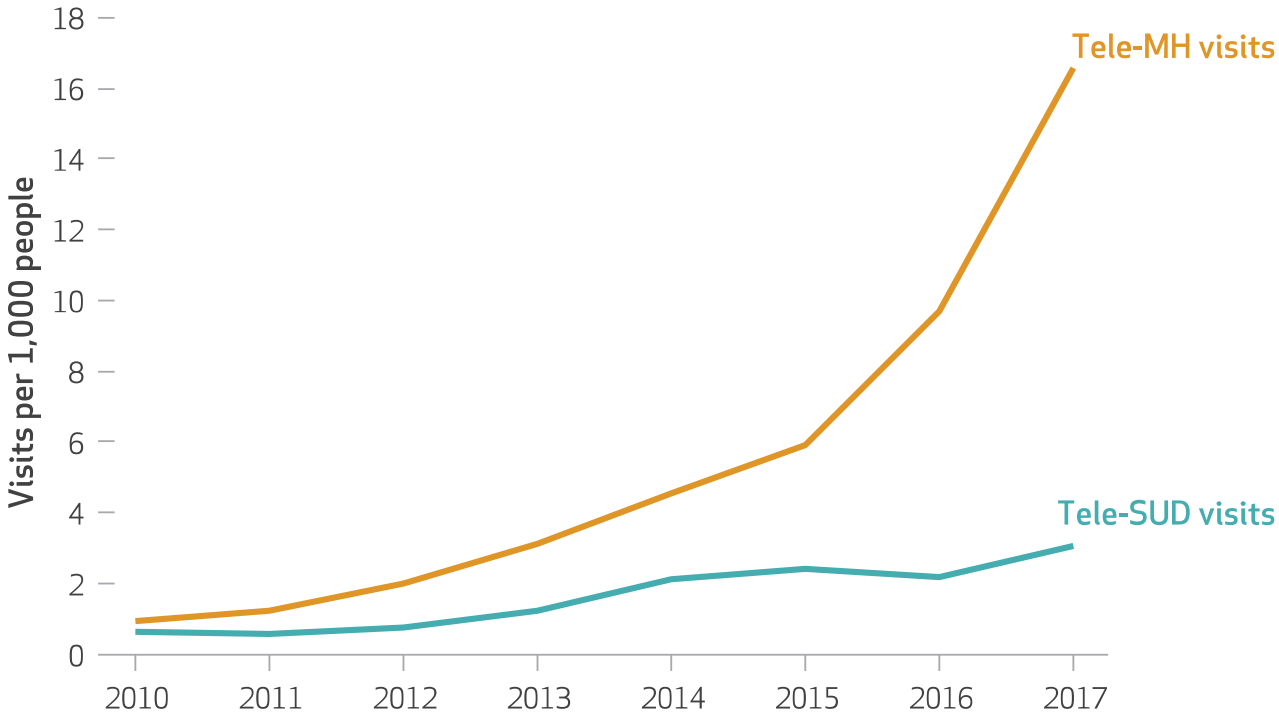
What we know about telehealth for SUDs

- Evidence for telehealth is robust for mental health and other conditions, but limited number and quality of studies for SUDs

- Some indicators of comparable therapeutic alliance and retention in care compared to in-person treatment though no fully powered studies

(Lin LA et al, Telemedicine-delivered treatment interventions for substance use disorders: A Systematic Review. *J Subst Abuse Treat.* 2019)

Telehealth for SUDs: Pre-COVID-19



SOURCE Authors' analysis of claims data for 2010–17 from the OptumLabs Data Warehouse. **NOTE** Tele-SUD visits had a primary diagnosis of SUD, and tele-MH visits had a primary diagnosis of mental illness.

(Huskamp HA et al, How Is Telemedicine Being Used In Opioid And Other Substance Use Disorder Treatment? | Health Affairs. *Health Affairs*, 2018)

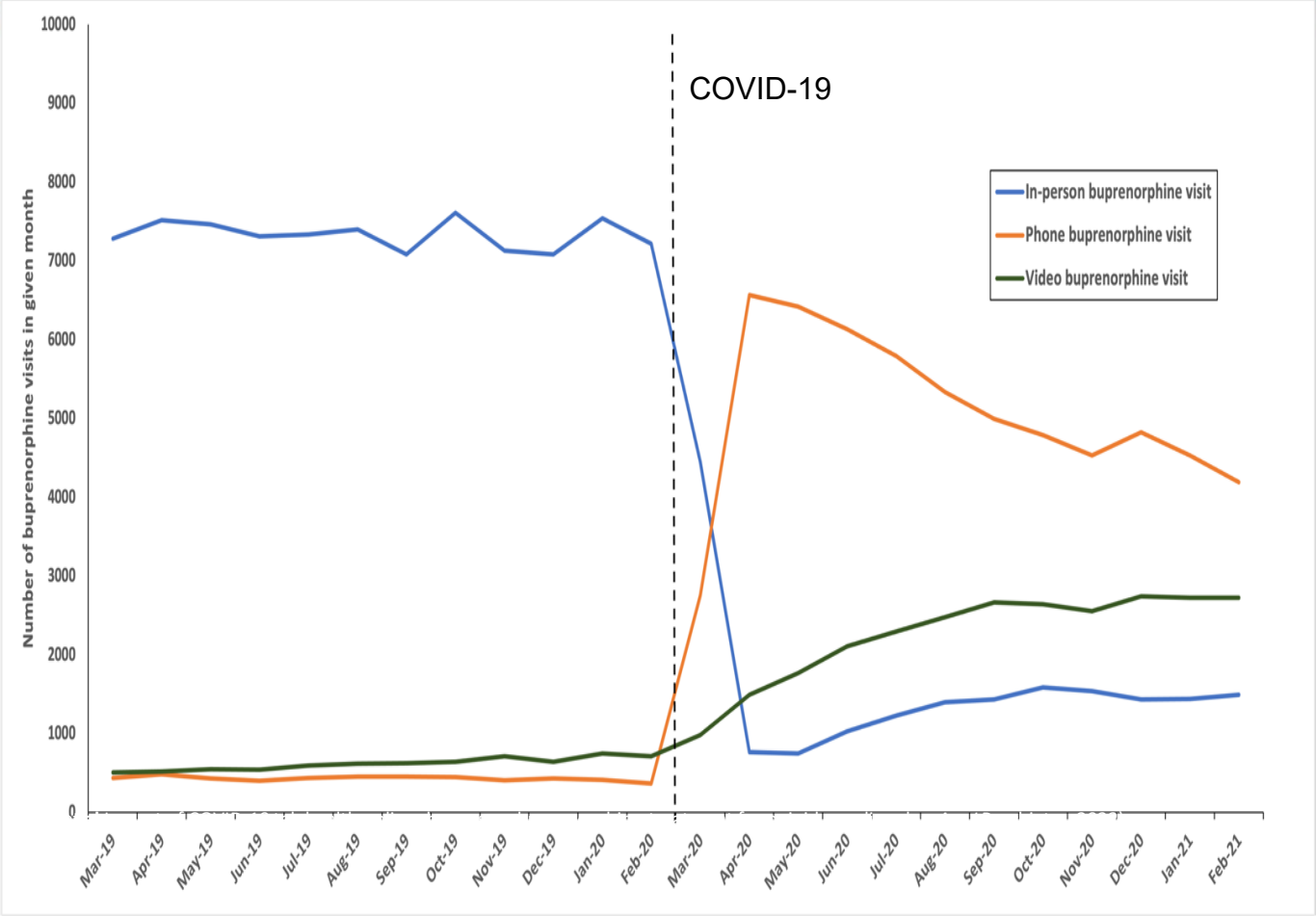
And then came COVID-19

- Ryan Haight Online Pharmacy Act Exemption during Public Health Emergency

- New guidance and changes from SAMHSA, DEA, payers and others increasing flexibility in:
  - Use of phone visits
  - Take home methadone
  - CFR42 part 2
  - HIPAA
  - Licensing
  - Reimbursement

(Lin LA et al. Telehealth for substance using populations in the age of COVID-19: Recommendations to enhance adoption. *JAMA Psychiatry*, 2020)

Study 1: Impacts of COVID-19 telehealth changes on opioid use disorder (OUD) care in VHA

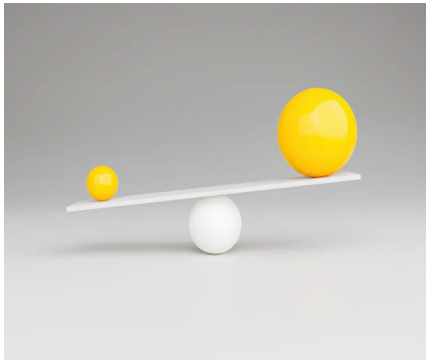


- Monthly number of Veterans receiving buprenorphine ↑14% due to more continuing on buprenorphine

(Lin LA et al Impact of COVID-19 telehealth policy changes on buprenorphine treatment for opioid use disorder. *Am J* Psychiatry, 2022)

Study 2: Comparative effectiveness of telehealth vs in-person buprenorphine care

- Methods:
  - Cohort of Veterans receiving buprenorphine for OUD 3/2020-3/2021
  - Compared patient characteristics across patients receiving: **Any video visits vs Phone visits vs In-person only**
  - Adjusting for differences in patient characteristics, examined association between use of **any telehealth with buprenorphine retention** (key quality metric for OUD care)



(Frost MC et al, Use of and retention in video, telephone and in-person buprenorphine treatment for opioid use disorder during the COVID-19 pandemic. *JAMA Net Open.* 2022)

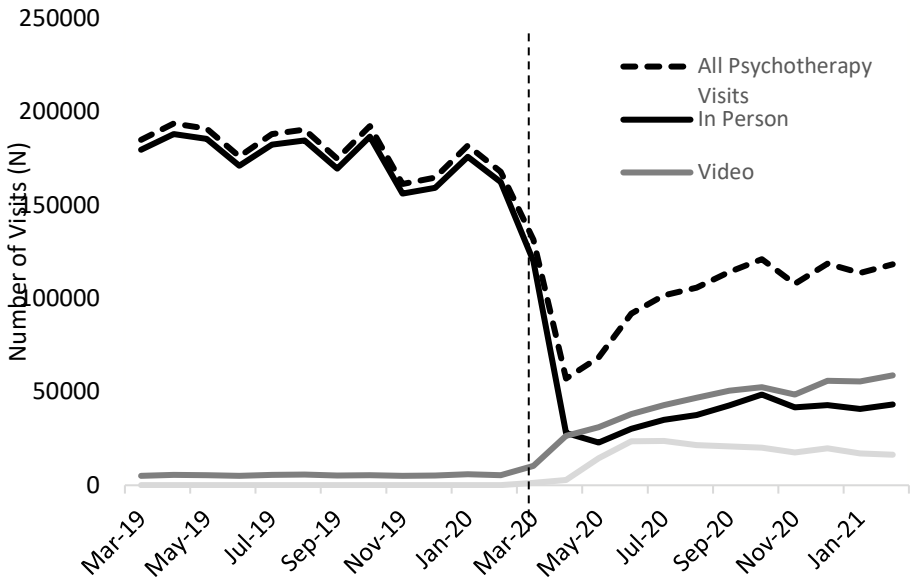
Study 2: Comparative effectiveness of telehealth and in-person buprenorphine care

- Results:
  - Among 17,182 Veterans receiving buprenorphine post COVID-19, 88% received telehealth (38% video and 50% phone)
  - Patients less likely to receive telehealth: Younger, Male, Black, Hispanic, Comorbid SUDs
  - Patients more likely to receive phone visits: Older, Black, Homeless
  - Adjusted for other characteristics, patients who received telehealth were more likely to be retained ≥90 days on buprenorphine.

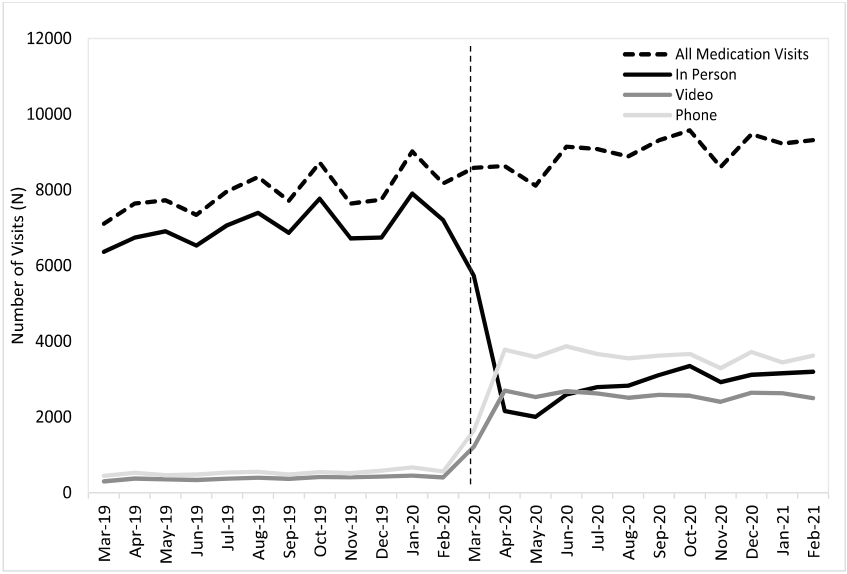
(Frost MC et al, Use of and retention in video, telephone and in-person buprenorphine treatment for opioid use disorder during the COVID-19 pandemic. *JAMA Net Open.* 2022)

Study 3: In Contrast, alcohol use disorder (AUD) care decreased during COVID

AUD psychotherapy



AUD medication



(Perumalswami PV et al, The impact of COVID-19 on trends in alcohol use disorder treatment in Veterans Health Administration, *Addiction* 2023)

Study 4: Comparative Effectiveness of Telehealth for AUD

- Among 138,473 patients who received AUD care 3/2020—2/2021
  - 52.8% had ≥1 video visit
  - 38.1% had ≥1 telephone but no video visits
  - 9.1% had only in-person visits.

- Patients who are Male, Black, or had opioid use disorder were less likely to receive any telehealth and were less likely to receive video compared to telephone visits.

- Any telehealth is associated with ↑ AUD psychotherapy visits and ↑ medication days compared to only in-person care

(Perumalswami et al, in progress)

Study 5: Views on telehealth compared to in-person care from Veterans with SUDs

Telehealth advantages	Telehealth disadvantages	Ongoing challenges to address
Decreased SUD stigma "I would say that it would be the phone, in some ways I feel better. The actual non-contact is easier because you can't see if they're judging you or not"	**Decreased connection** "When you remove that human element where you're in the same room with me…you remove the human aspect of it"	**Technology access & SUD logistics** "You know I don't have a lot of money, I do the monthly minute thing so there were times when I was worried"

Perspectives of patients with SUDs : Not just 'one-size fits all.' Emphasize need for telehealth options & hybrid models

(Girard et al, Telehealth-delivered psychotherapy for the treatment of alcohol use disorder: Patient perspectives in the age of COVID-19. *J Addict Med. In press)*

But barriers and many questions persist

- Clinician/staff discomfort due to uncertainty about effectiveness and quality of telehealth (contributing to decreasing telehealth use)

- Changing federal and state regulations
  - E.g. Controlled medications and differences across medications

- Which patients to prioritize for telehealth and When?
  - Telehealth compared to community care
  - Complex versus stable patients?
- Proliferation of non-evidence based practices
  - E.g., banning phone visits

DELAYED Rule Changes from DEA

- After COVID-19 PHE expired May 11 2023, all patients started on buprenorphine/naloxone via telehealth must:
  - Receive < 30 days supply initially followed by in-person visit OR
  - Have initial telehealth eval while pt is in presence of another prescriber who conducts in-person eval OR
  - Patient must have in-person eval and then referred for telehealth
- For patients who you started on bup/naloxone during the pandemic AND never saw in person, you must see them in-person within 6 months
- Phone visits still supported

Supporting clinicians to deliver high quality care

1. Summarize evidence on telehealth for OUD including gaps
2. Summarize federal and state policies
3. Summarize reimbursement
4. Discuss how to adapt clinical practices, enhancing patient rapport
5. Illustrate with patient cases on considerations in starting and continuing treatment

Telehealth for Opioid Use Disorder Toolkit: Guidance to Support High-Quality Care

Telehealth for opioid use disorder toolkit: Guidance to support high quality care,

Comparative Effectiveness Answers Needed to Guide High Quality Telehealth

- Effectiveness of hybrid models of telehealth?
- Which patients to prioritize for telehealth?
- Video vs audio-only?
- Telehealth reducing or exacerbating treatment disparities?
- Telehealth effects on other important outcomes?

Any Questions?

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THE VA NATIONAL TELENEUROLOGY PROGRAM (NTNP):

Implementing telehealth care to improve access to outpatient neurologists

LINDA S. WILLIAMS, MD

VA HSR&D EXTEND QUERI, CENTER FOR HEALTH INFORMATION AND COMMUNICATION, INDIANAPOLIS, IN

INDIANA UNIVERSITY SCHOOL OF MEDICINE

REGENSTRIEF INSTITUTE, INC.

EXTEND
Expanding Expertise Through E-health Network Development
VA QUALITY ENHANCEMENT RESEARCH INITIATIVE

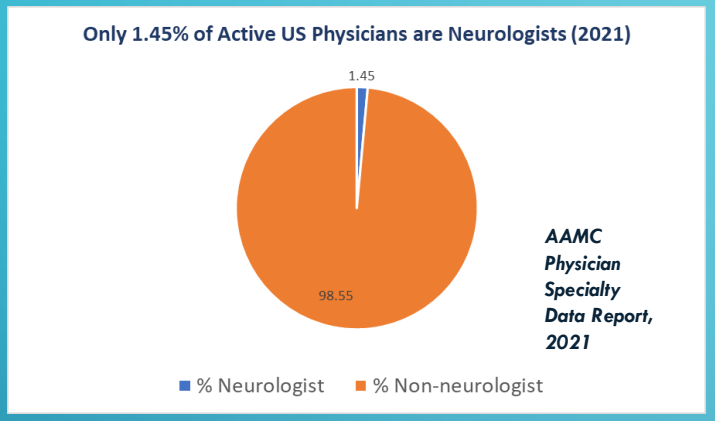
VA HSR&D QUERI program focused on implementing and evaluating telehealth-based programs to improve evidence-based practices

NTNP

FUNDING AND DISCLOSURES

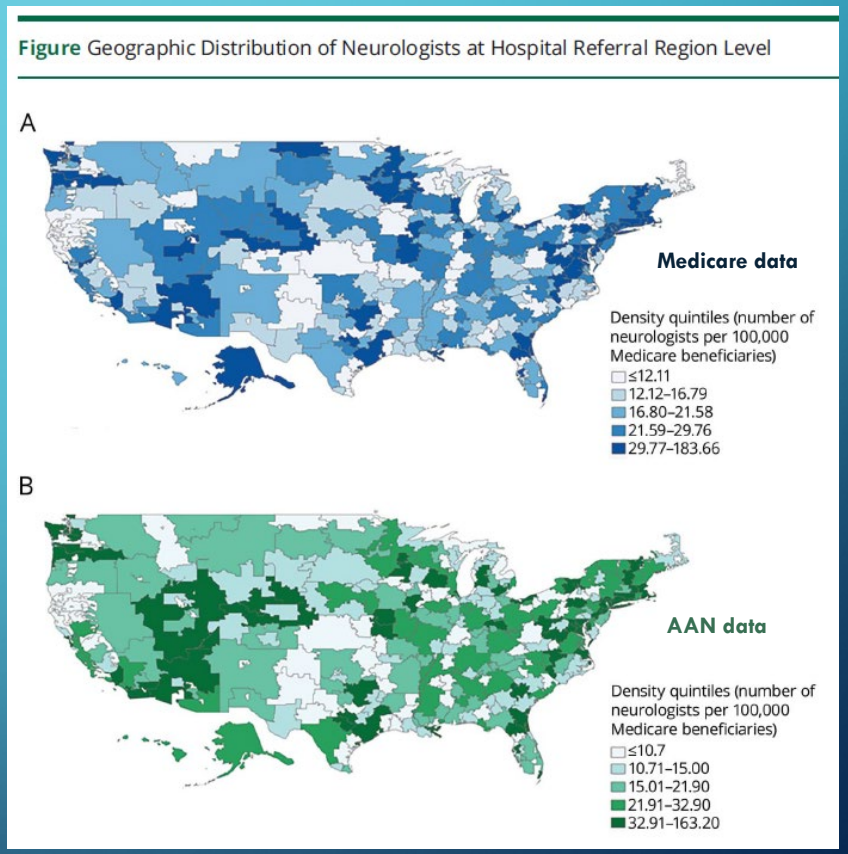
- NTNP and the Teleneurology Program Evaluation is funded by the VA Office of Rural Health
- Support also provided from VA HSR&D EXTEND QUERI funding
- The authors have no conflicts of interest to declare

THERE IS A NATIONAL SHORTAGE OF NEUROLOGISTS

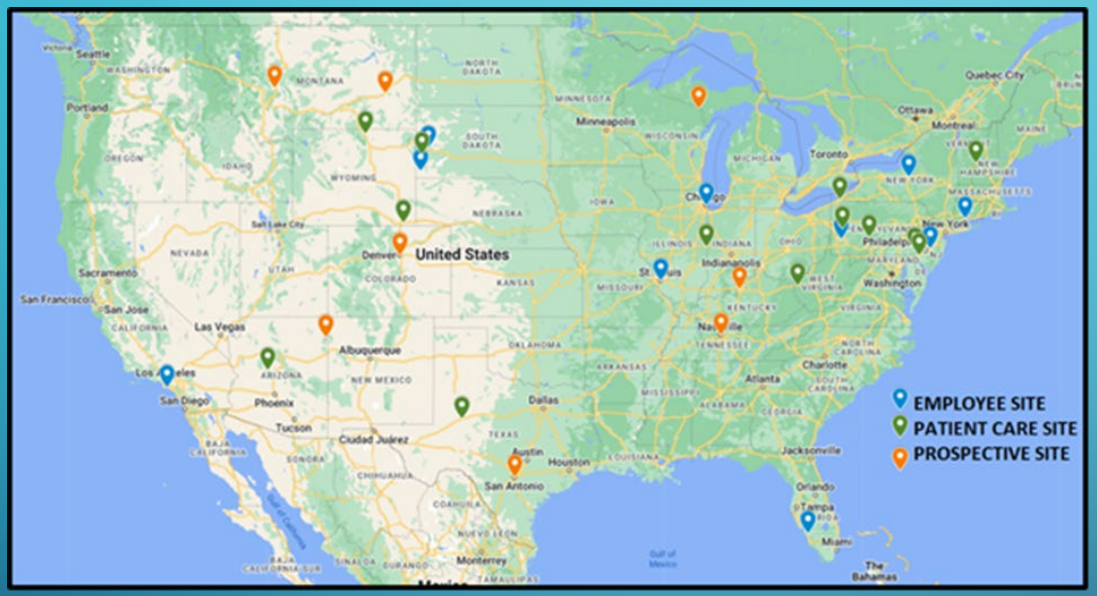


- Average density of 22-23 neurologists per 100,000 Medicare beneficiaries
- Geographic distribution of neurologists varies widely
- Prevalence of neurologic conditions does not differ across neurologist density quintiles

Lin CC et al, Neurology 2021;96:e309-321



DEVELOPMENT OF THE NTNP



Organizing center: Corp. Michael J Crescenz VAMC, Philadelphia
Medical director: Jayne Wilkinson, MD
Administrative officer: Robin Islam, MBA

- Funded by Office of Rural Health
- Initial development FY2020
- First patient seen October 2020
- FY2021 status:
  - 12 active sites
  - 3.75 FTE from 7 neurologists
  - 1,128 completed new patient consults
  - 55.2% rurally-residing Veterans

NTNP IMPLEMENTATION EVALUATION

- EXTEND QUERI conducting the formal Enterprise-wide Evaluation of NTNP

Reach	Site activations **NTNP consults placed and completed**
Effectiveness	**Time to schedule NTNP and community care neurology (CCN) consults** **Time to complete NTNP and CCN consults** **Veteran satisfaction** **Referring provider satisfaction**
Adoption	Site staff interviews Utilization of available clinic slots
Implementation	Site staff interviews Quarterly site check-ins
Maintenance	**Consult volume over time** Maintenance interviews

EXTEND
Expanding Expertise Through E-health Network Development
VA QUALITY ENHANCEMENT RESEARCH INITIATIVE

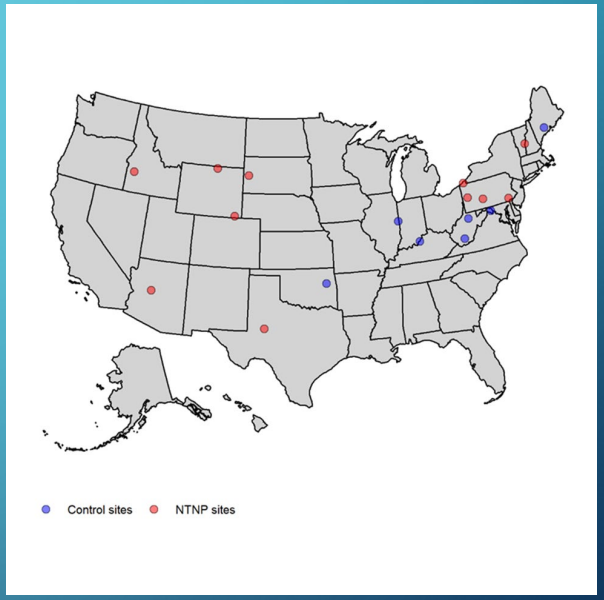
VA HSR&D QUERI program focused on implementing and evaluating telehealth-based programs to improve evidence-based practices

NTNP IMPLEMENTATION QUESTIONS:

- **Does implementation of NTNP impact Veteran access to Neurology care?**
  - Veteran and referring provider satisfaction
  - Timeliness of consultations
  - Volume and trajectory of community care neurology (CCN) consultations

METHODS

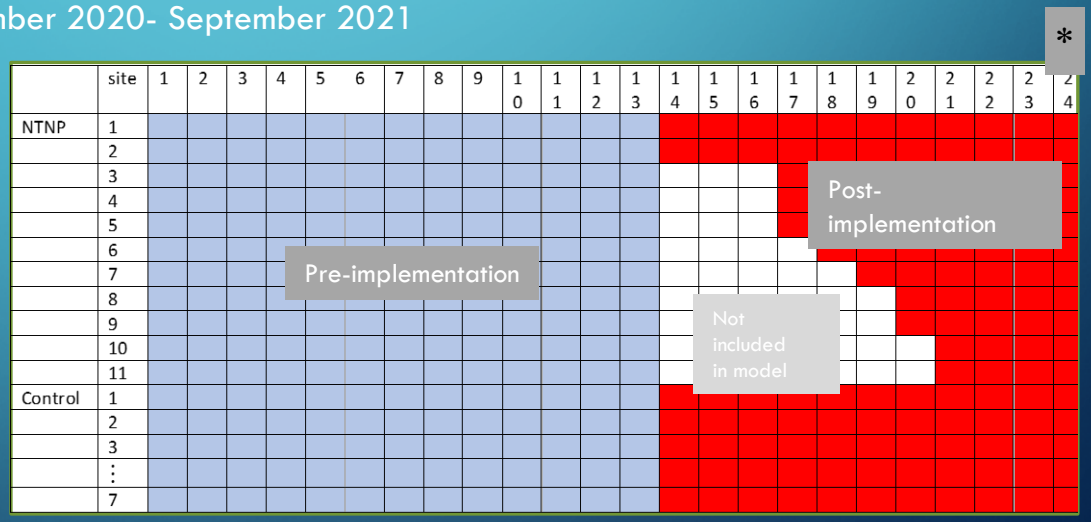
- Retrospective case-control time series
- Identification of sites:
  - **NTNP** sites: All NTNP sites active in FY2021
  - **Control** sites: VAMCs with similar neurology FTE (< 1.0 FTE) in FY2020 and some contact with NTNP expressing interest/need but no implementation as of September 2021
- Primary outcome of interest:
  - Monthly volume of CCN consults following NTNP implementation in **NTNP** vs **control** sites
- Secondary outcomes (**NTNP** only):
  - Time to schedule and complete NTNP and CCN consults
  - Veteran and referring provider satisfaction with NTNP



STUDY PERIODS

- Constructed monthly averages for CCN consults at intervention and control sites in two time periods:
  - **Pre-implementation:** October 1, 2019- October 2020 (Months 1-13)
  - **Post-implementation:** (Months 14-24)
    - NTNP sites: defined by site start date (first full month of implementation) – September 2021
    - Control sites: November 2020- September 2021

One NTNP site began in month 24 and was excluded from the analysis



ANALYSIS: SATISFACTION DATA

- Veterans: Three overall satisfaction/experience questions (1-7 scale)
  - Telephone interviews 1-2 weeks after a completed consult
  - Interview 100% in months 1-3 and random 50% months 4-6 of initial implementation
  - Three attempts
- Providers: Three overall satisfaction/experience questions (1-10 scale)
  - REDCap emailed surveys 2-7 days after a completed consult
  - Up to three email/Teams message reminders
  - No more than one survey sent per month

ANALYSIS: ACCESS DATA

- Time in days to schedule and complete a consult (NTNP sites only)
  - Wilcoxon rank-sum test, excluding patients with both NTNP and CCN consult in the study period
- Within-site change in monthly CCN consult volume post- vs. pre-implementation (NTNP and control)
  - Wilcoxon signed-rank test
- Generalized linear mixed model to fit number of monthly CCN consults per site including:
  - Month program went live (NTNP) or month 1st NTNP site went live (control)
  - Site (NTNP vs control)
  - Months of available data (continuous)
  - Site Neurology FTE
  - Random site intercept and slope terms
  - 2- and 3-way interactions

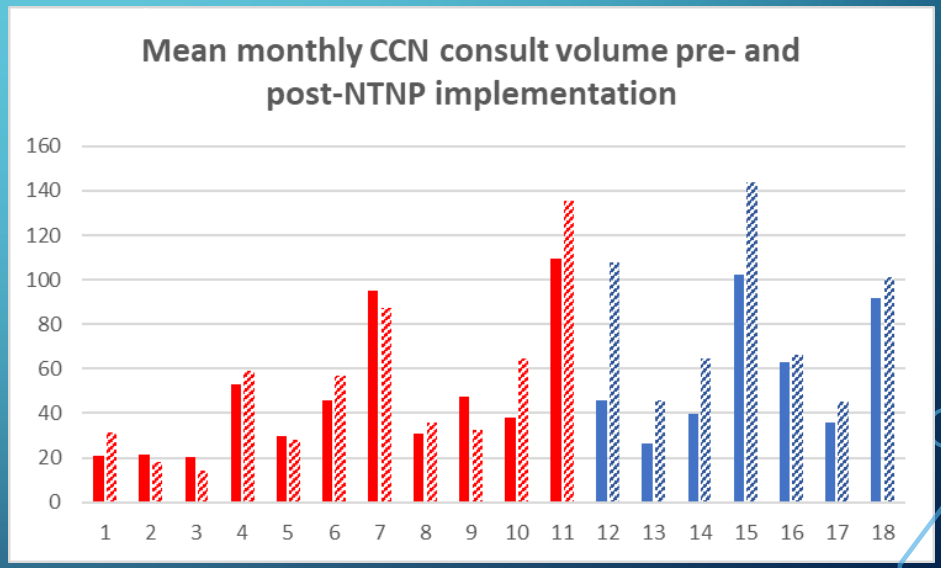
NTNP AND CONTROL SITE DATA

NTNP and Control site descriptives

Site	Neuro FTE	Rurality
1	0.66	47%
2	0.02	59%
3	0.0	16%
4	0.06	66%
5	0.38	67%
6	0.87	70%
7	0.02	45%
8	0.17	79%
9	0.99	875
10	0.77	36%
11	0.03	51%
12	0.75	76%
13	0.01	67%
14	0.01	79%
15	0.0	47%
16	0.52	38%
17	0.93	47%
18	0.63	61%

CCN mean monthly consult volumes:

- Monthly volume pre- and post-implementation
- Sites are different sizes; NTNP was not intended to meet all neurology needs at



RESULTS: SATISFACTION

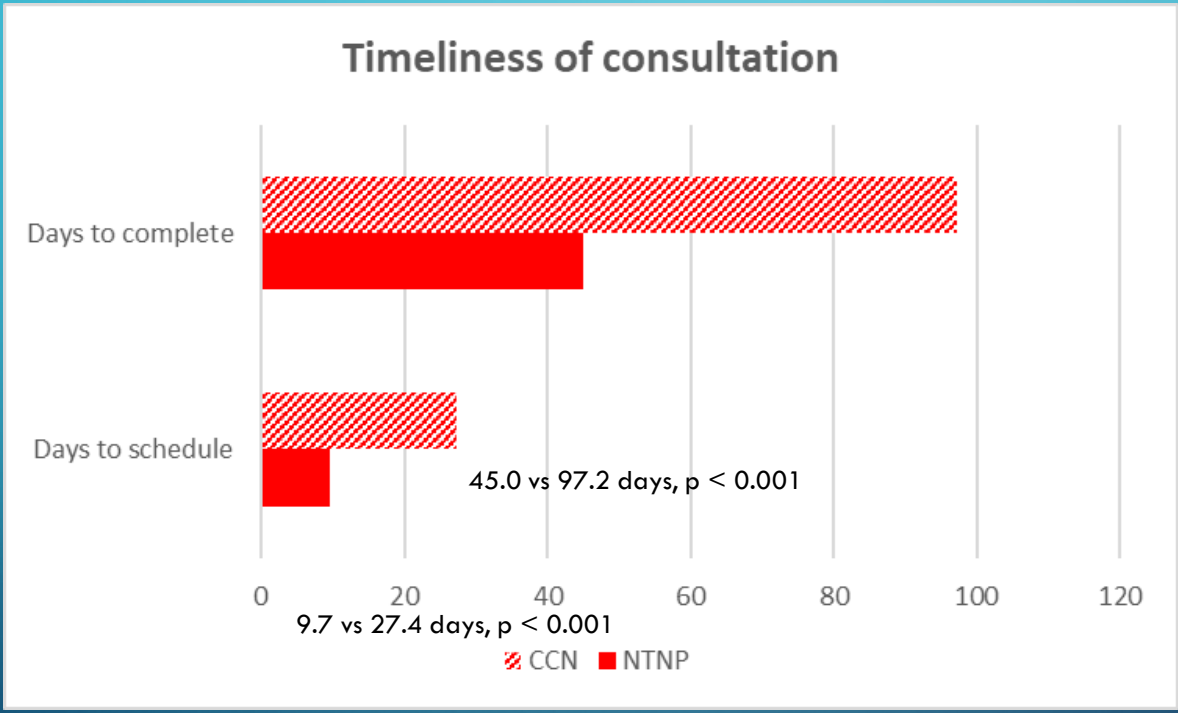
Patient questions:

- How much was the visit like a face-to-face doctor visit?
- Would you recommend NTNP to other Veterans like you?
- Overall, how satisfied were you with your NTNP televisit?

Provider questions:

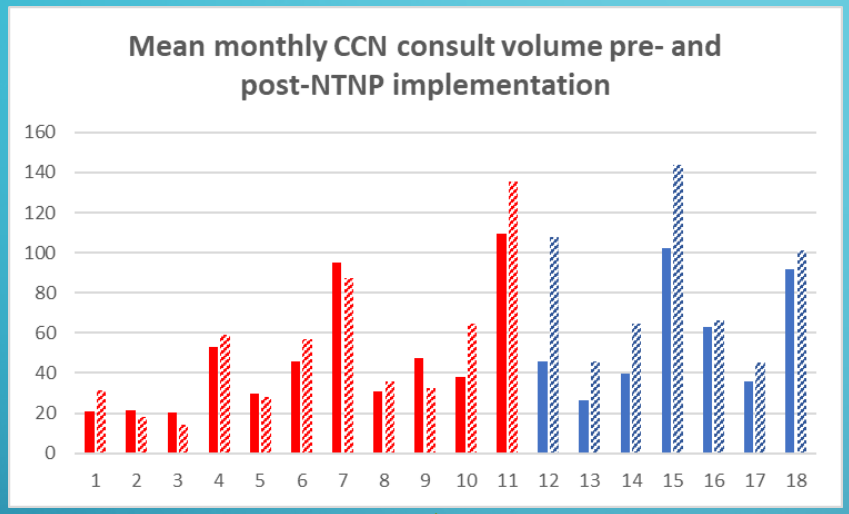
- How well did the consult address the question you had about this patient?
- How clear was the neurologic plan for your patient?
- Overall, how satisfied were you with the NTNP consult?

RESULTS: TIMELINESS COMPARED TO COMMUNITY CARE

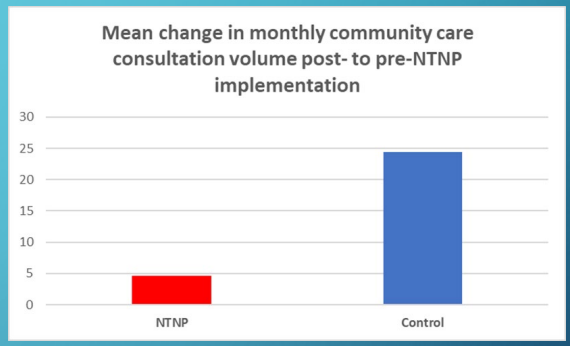


NTNP consults are scheduled and completed significantly faster than CCN consults at participating sites

RESULTS: CCN VOLUME NTNP VS. CONTROL SITES



We compared the site-level mean monthly community care neurology consult volume in the post-NTNP period to the pre-NTNP period



NTNP sites had no significant increase in monthly CCN consults in the post-period but control sites did significantly increase

NTNP: +4.6 consults [-4.3,13.6], p = 0.413

Control: +24.4 consults [5.2, 43.7], p = 0.016

Wilcoxson signed-rank test

RESULTS: MODEL

Negative binomial model of CCN consults:

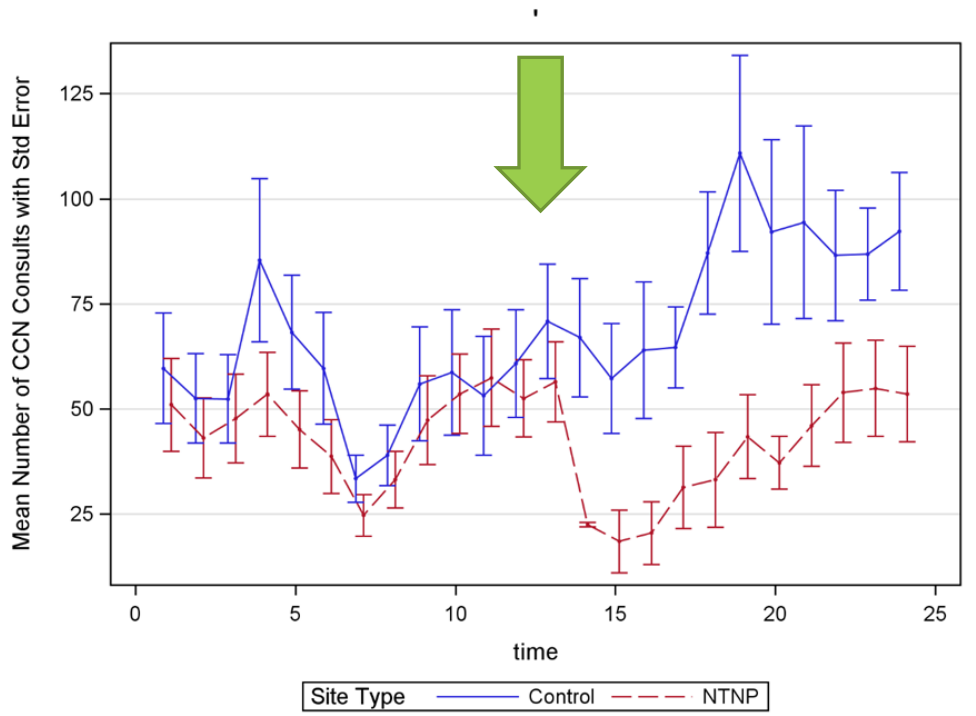
Effect	Est	SE	t Value	p-value|
Intercept	4.0412	0.2178	18.55	<.0001
Local Neurology (FTE)	-0.2523	0.2040	-1.24	0.217
Program (NTNP vs Control)	-0.3554	0.2572	-1.38	0.168
LIVE	-0.0406	0.2230	-0.18	0.856
Time (Months)	0.00425	0.00969	0.44	0.667
Program (NTNP) x LIVE	-0.8690	0.3908	-2.22	0.027
Time x Program (NTNP)	0.00905	0.01251	0.72	0.470
Time x LIVE	0.01958	0.01372	1.43	0.154
Time x Program (NTNP) x LIVE	0.01788	0.02145	0.83	0.405

Est = Estimate, SE = Standard Error

Model results: (controlling for local neurology FTE, NTNP status, program implementation, and time in program)

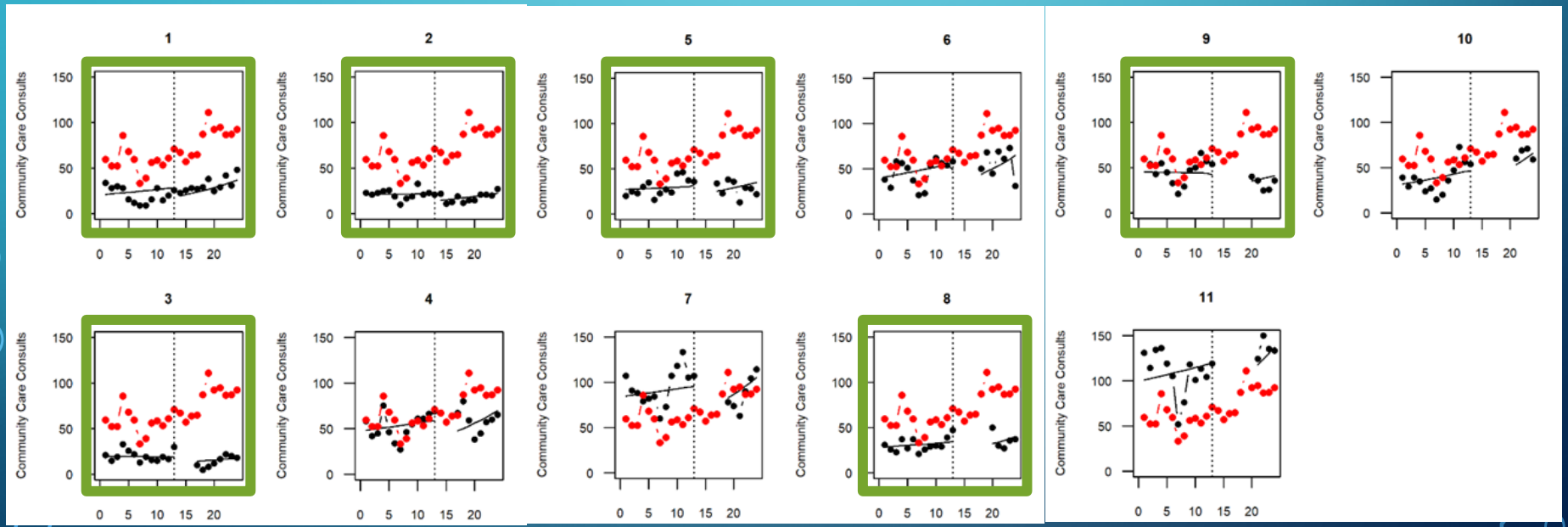
- **Significant change in the level of CCN consults at the time the program went live between NTNP and control sites (Program x Live p = 0.027)**
- CCN consults increased slowly and similarly over time in both NTNP and CCN sites
  - No significant change in slope of monthly CCN consults before and after NTNP (Time x Live p = 0.154)
  - No difference in the slope of monthly CCN consults between NTNP and control sites (Time x Program x Live p = 0.405)

Mean monthly CCN consults with standard



SUPPLEMENTARY ANALYSIS: DIFFERENT EFFECT AMONG NTNP SITES?

- The raw number of CCN consults per month at each NTNP site (black points) is plotted against the mean number of CCN consults per month across all control sites (red points)
- NTNP first implementation month is shown by the vertical dashed line
- In general, the sites with lower CCN volume have a larger difference in post-implementation CCN monthly consult volume



CONCLUSIONS

Limitations/questions:

- Did COVID differentially impact NTNP and control sites or CCN consults in the pre- or post-time periods in general?
- Is the impact of NTNP more pronounced in certain types of facilities (smaller)?
- Will this effect sustain over a longer time period?

Veterans and referring providers are highly satisfied with Teleneurology care

NTNP care is significantly more timely than care in the community for Veterans referred for a new neurology consultation

Implementation of NTNP is associated with a significant drop in the volume of CCN consultations compared to similarly resourced VA facilities that did not implement NTNP

THANKS TO THE PROJECT TEAM AND PARTNERS

- Evaluation and EXTEND Teams:
  - Holly Martin, MPH
  - Grace Bastin, BS
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  - Sean Baird, MA
- Data Science Team:
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  - Joanne Daggy, PhD
  - Qing Tang, MS
  - Stan Taylor, MS
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  - Aditi Narechania, MD
  - Steven Schrieber, MD

Original Research | Open Access | Published: 20 June 2023

The VA National Teleneurology Program (NTNP): Implementing Teleneurology to Improve Equitable Access to Outpatient Neurology Care

Jayne Wilkinson, Laura Myers, Joanne Daggy, Holly Martin, Grace Bastin, Ziyi Yang, Teresa Damush, Aditi Narechania, Steve Schriber & Linda S. Williams

Journal of General Internal Medicine (2023) | Cite this article

For more info:

- JGIM article in the recent VA Access issue
- Linda.Williams6@va.gov

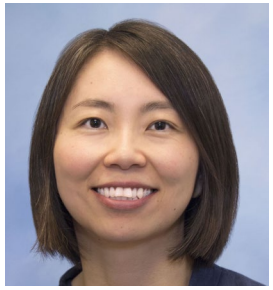
Abstract

Background

Telehealth is increasingly utilized in many healthcare systems to improve access to specialty care and better allocate limited resources, especially for rurally residing persons who face unique barriers to care.

Presenters

Lewei (Allison) Lin, MD, MS



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