

Research on Disrupted Care Due to COVID-19 in VA

Liam Rose, May 2022

Intro

- COVID-19 disrupted all healthcare operations in some way
- The degree to which it affected patients is an open question
- Effects might vary by:
 - Demographic characteristics
 - Type of service
 - Geographic location
 - Many more...
- Studying this in VA enrollees presents some unique challenges
- **Today:** What do we know so far, and what are we working to learn?*

Disrupted Care National Project (DCNP)

Coordination Aims

- 1 Accelerate progress through collaboration and engagement
- 2 Create a community of research to minimize overlap and promote comparability of work
- 3 Develop forums for the curation of data and methodologies

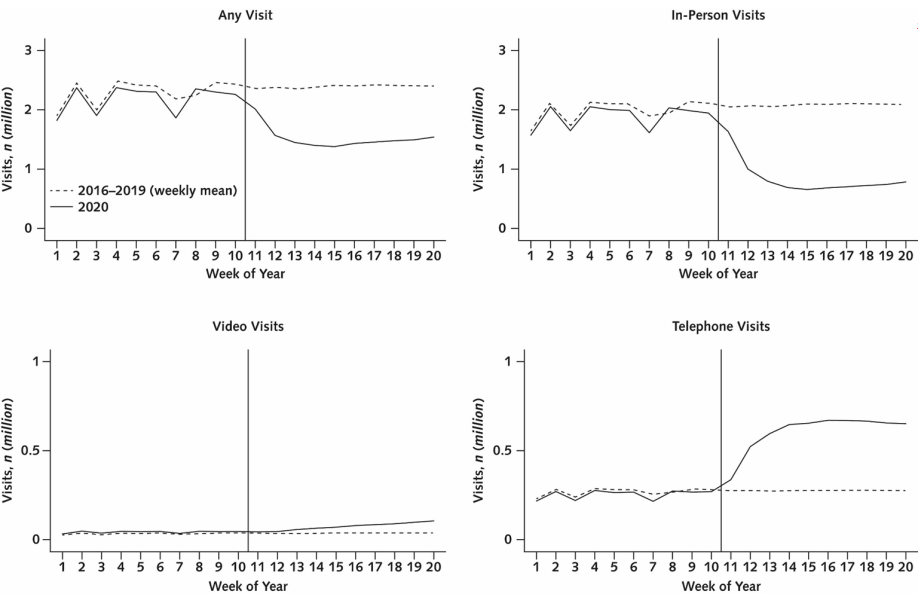
Research Aims

- 1 Pre vs pandemic mortality in VA, CDC, and Medicare (ecological)
- 2 Characterize disruption (VA and Medicare) and impact on mortality among non-COVID (ecological)
- 3 Pre vs pandemic mortality among non-COVID (patient-level)

PIs: Amy Justice, MD, PhD; Louise Davies MD, MS; Anita Vashi MD, MPH

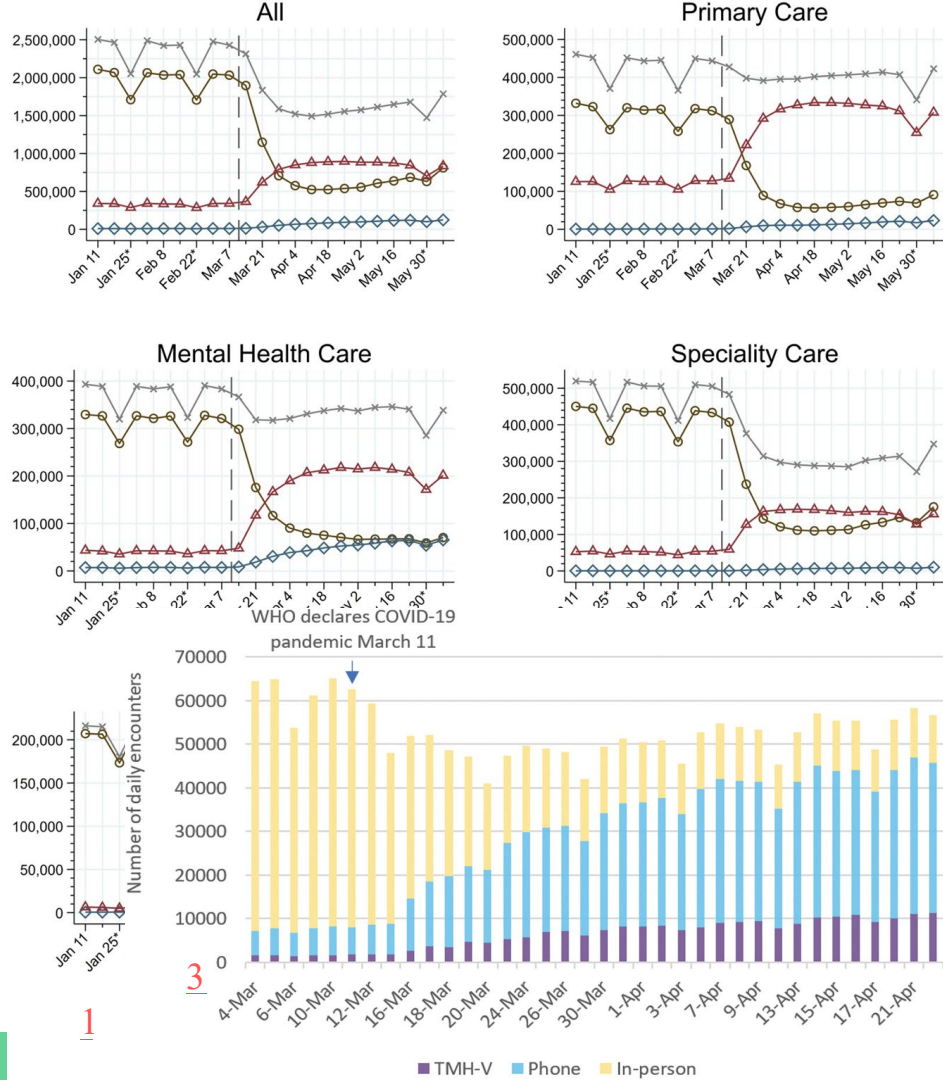
Current Literature - Shifts in Care Delivery

Shifts to Telehealth



⇒ More of these, but clear large increase in telehealth

2



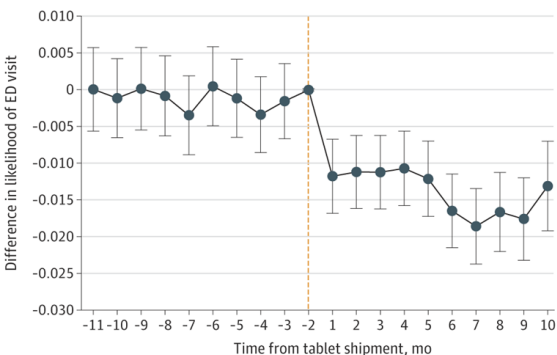
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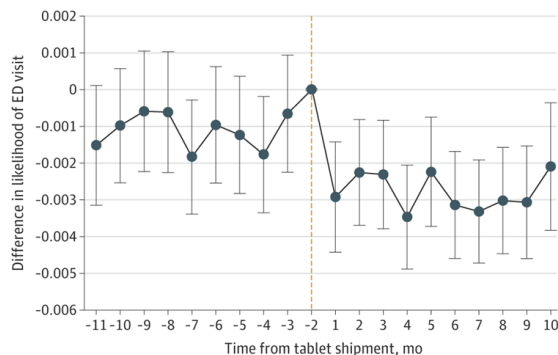
Shifts to Telehealth - Rural Veterans

- VA sent ~100k tablets during the pandemic
- Reduced VA ED visits, especially those related to suicide
- Less uptake in some VAMCs with greater coverage areas [5](#)

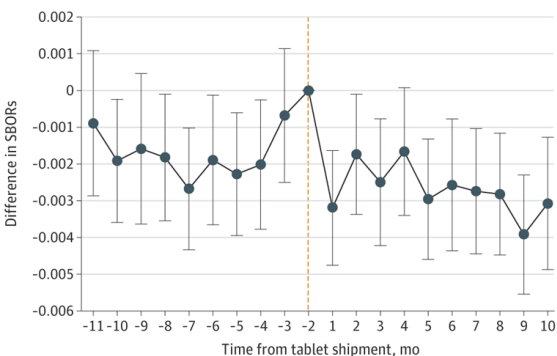
A Any ED visit compared with baseline



B Any suicide-related ED visit compared with baseline



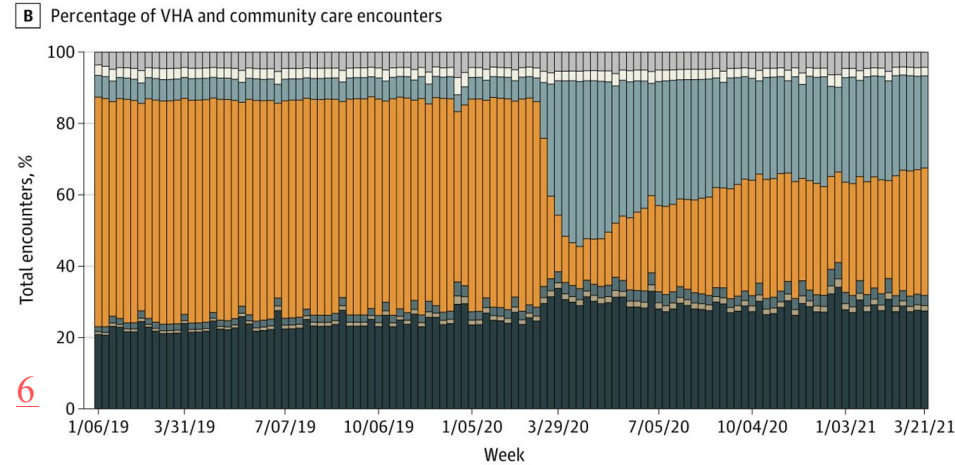
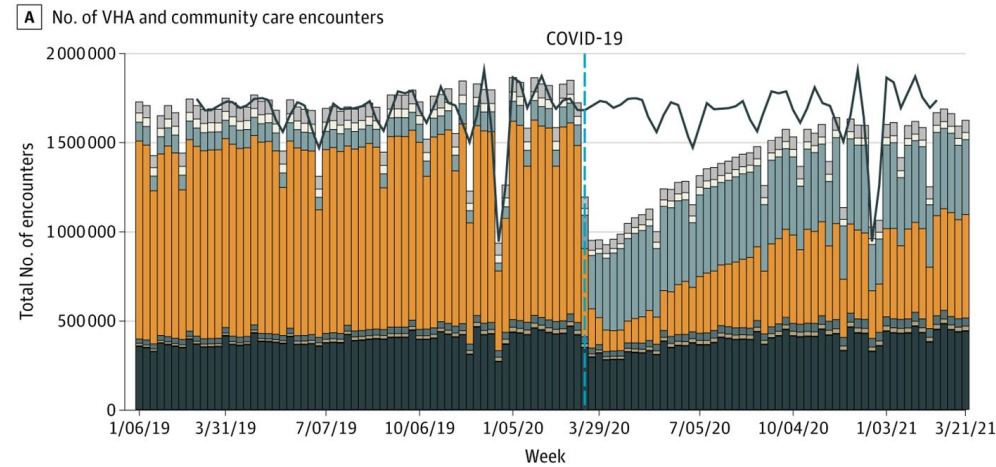
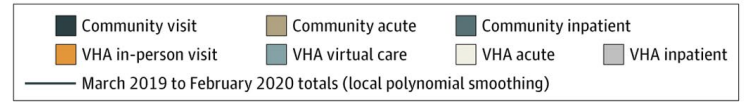
C VA SBORs compared with baseline



[4](#)

Shifts to Community Care

- VA greatly expanded community care access just before the pandemic (June 2019)
 - This makes it very difficult to separate the effects of the law and the effects of the pandemic
 - Along with increases in virtual care, the pandemic seems to have accelerated long-term trends toward community care



Ongoing Work - Shifts in Care Delivery

Telehealth

- Improving Dermatology Access by Direct-to-Patient Teledermatology and Computer-Assisted Diagnosis (PI: Oh)
 - Assessing the impact of direct-to-patient teledermatology on access and health system utilization
- Leveraging rapid COVID-driven telehealth expansion to optimize delivery of in-person and virtual services in VA primary care (PIs: Der-Martirosian & Leung)
 - Mixed methods study to examine site, provider, and patient differences in telehealth adoption (all different telehealth modalities) within primary care (PC) clinics nationwide
- Use of Virtual Care and Adherence to Chronic Medications During the COVID-19 Crisis (PI: Yoon)
 - Examine patient risk factors related to adherence were associated with virtual primary care use, and if virtual primary care was effective for medication adherence.

Telehealth

- Use of VA Telehealth Services at VAGLAHS during the COVID-19 Pandemic; July 1, 2020 – April 30, 2021 (PIs: Der-Martirosian and Wyte-Lake)
- A Mixed-Methods Pilot Study of the Impacts of Telemental Healthcare for High-Risk Veterans with Opioid Use Disorder during COVID-19 (PI: Myers)
 - Examining impacts of waiving of Requirements for in-person visits for opioids
- Effectiveness of telehealth to adequately manage ACSC such as admission for congestive heart failure (CHF) (PI: Winchester)
 - Looking to see how the pandemic impacted trends in CHF admissions

⇒ Can we tease out the situations where telehealth is and is not sufficient?

Current Literature - Cancellations

Cancellations

- Over 600k appointments were cancelled just in the first few weeks of the pandemic.
- Nearly everyone was seen in the next 180 days, many with telehealth
- But clearly some appointments were more important than others
 - No evidence that cancelled surgical procedures led to short-term mortality (among ~3000 operations cancelled in March 2020) [8](#)

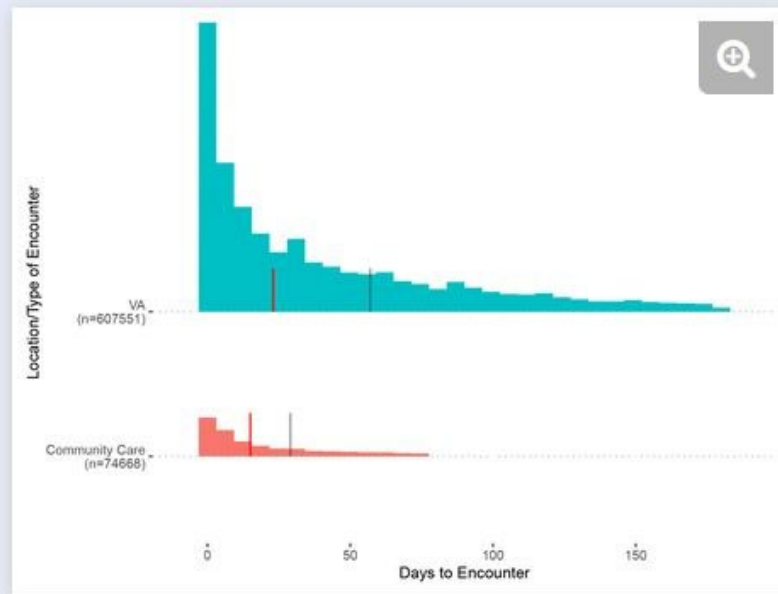


Figure 2.

[Download figure](#) | [Open in new tab](#)

Time to Next Encounter from Date of Cancelled Appointment

Notes: "Days to Encounter" signifies the number of days between the patient's originally scheduled appointment and their next encounter "VA" means the next encounter was with a VA provider, and "Community Care" means the encounter was with a community care provider. The red line signifies the median number of days to next encounter for each group. The gray line signifies the median number of days for the comparison group that did not have a scheduled appointment cancelled.

Ongoing Work - Cancellations

Cancellations

- Adapting Caring Contacts to Counteract Adverse Effects of Social Distancing Among High-Risk Veterans During the COVID-19 Pandemic (PI: Teo)
 - Qualitative study, examining patients that are most likely to miss appointments

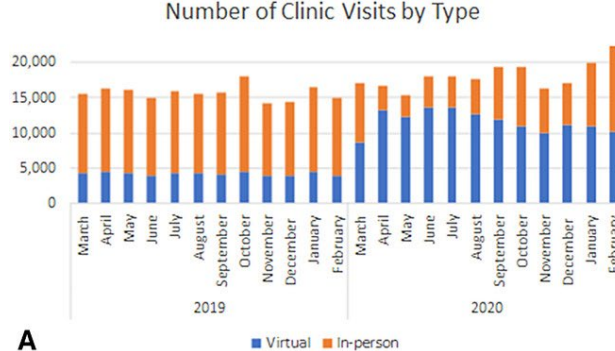
=> Have some patients had issues with cancellations as VA (and all systems) have struggled with both COVID and staffing issues?

If so, what can we do to improve this?

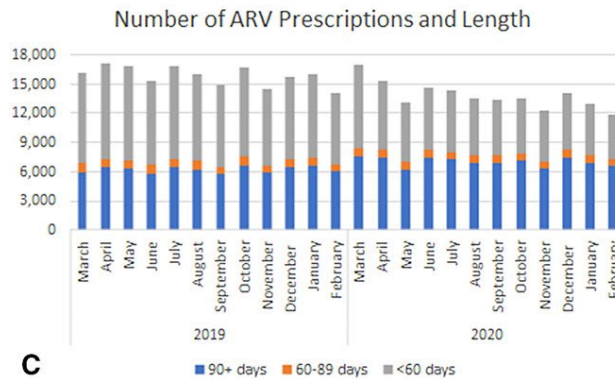
Current Literature - Missed Care

Missed Care

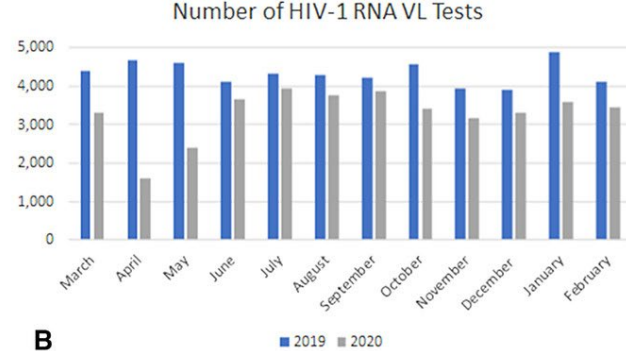
- A particularly tough topic in the VA population due to missing data
 - ~15 percent of enrollees use VA exclusively
- Access to anti-viral medication for HIV+ patients not disrupted with telehealth and longer prescription length (panel D)



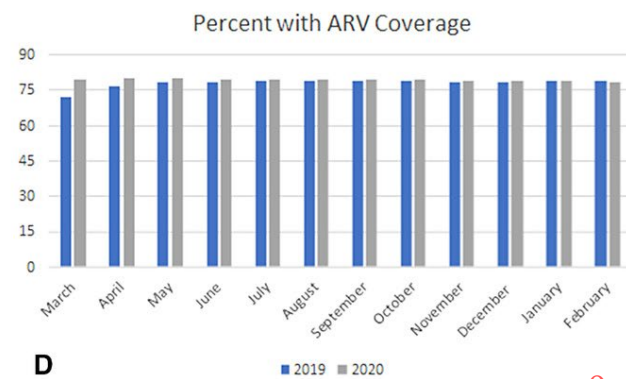
A



C



B

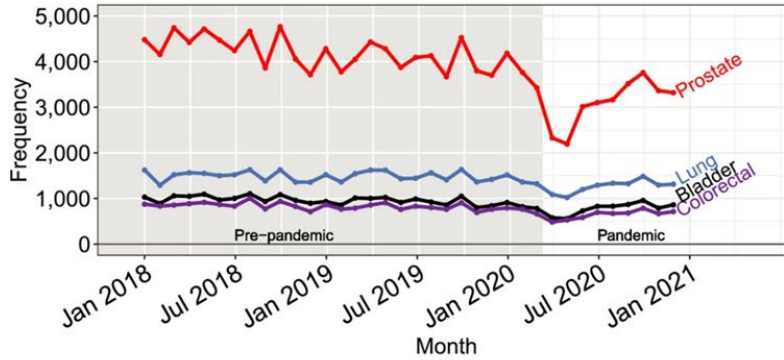


D

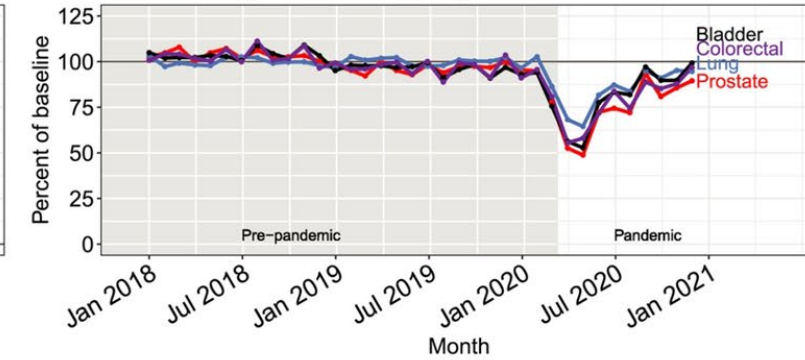
Missed Care

- Decrease in cancer diagnoses and diagnostic procedures
- Unknown if non-VA care was used as a substitute
- No change by race in VA for prostate cancer biopsies [11](#)

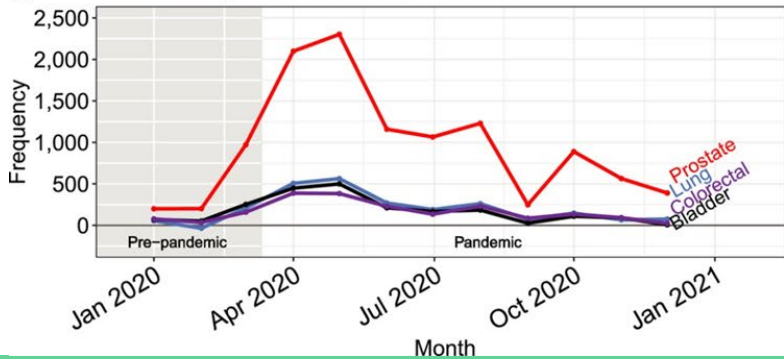
A New cancer diagnoses per month



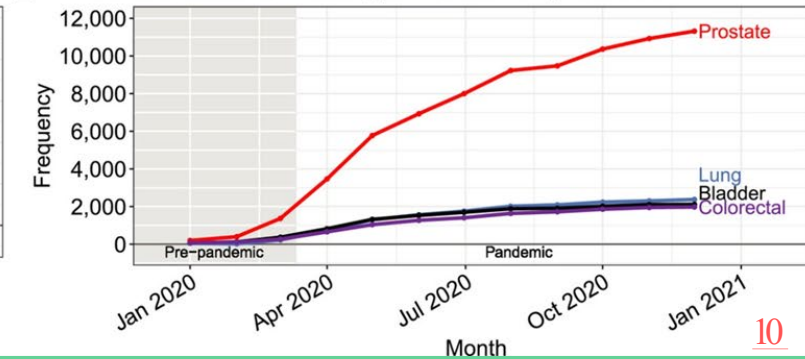
B New cancer diagnoses normalized per month



C Estimated undiagnosed cancers per month



D Estimated cumulative undiagnosed cancers per month



Ongoing Work - Missed Care

Missed Care

- Impact of COVID-era Disrupted Care on Disparities in Outcomes among Veterans with Kidney Failure (PI: Wang)
 - Examine how the pandemic delayed care for ESKD patients, and compare patient-level outcomes and racial and socioeconomic disparities in outcomes in VA and non-VA dialysis settings before and during the COVID pandemic time periods.
- Changes in the Delivery of Evidenced Based Psychotherapies for Depression and PTSD as the Result of COVID-19 Pandemic (PI: Mendez)
 - Examining dropout rate as a result of the pandemic, as well as different modalities of treatment

Missed Care

- Delaying Cardiovascular Procedures to Curb the Spread of COVID-19 among Veterans: Variation in VHA Practice Patterns and Outcomes (PI: Yong)
 - Describe cardiovascular procedural volumes, assess whether there were differences among vulnerable populations, and compare downstream outcomes in Veterans hospitalized with incident STEMI, NSTEMI, severe aortic stenosis, and AV block before and after the COVID-19 pandemic and to determine if inpatient procedures use mediates those outcomes.
- COVID-19 Impact on Pain management: Highlighting, Explaining, and Realigning services (PIs: McGuire and Matthias)
 - Mixed methods study examining how and where the pandemic disrupted the receipt of guideline concordant care for pain management

⇒ Lots of open questions but immensely difficult to study: was there no visit because it was not needed, or disrupted due to the pandemic?

Ongoing Work - Downstream Effects

Downstream Effects

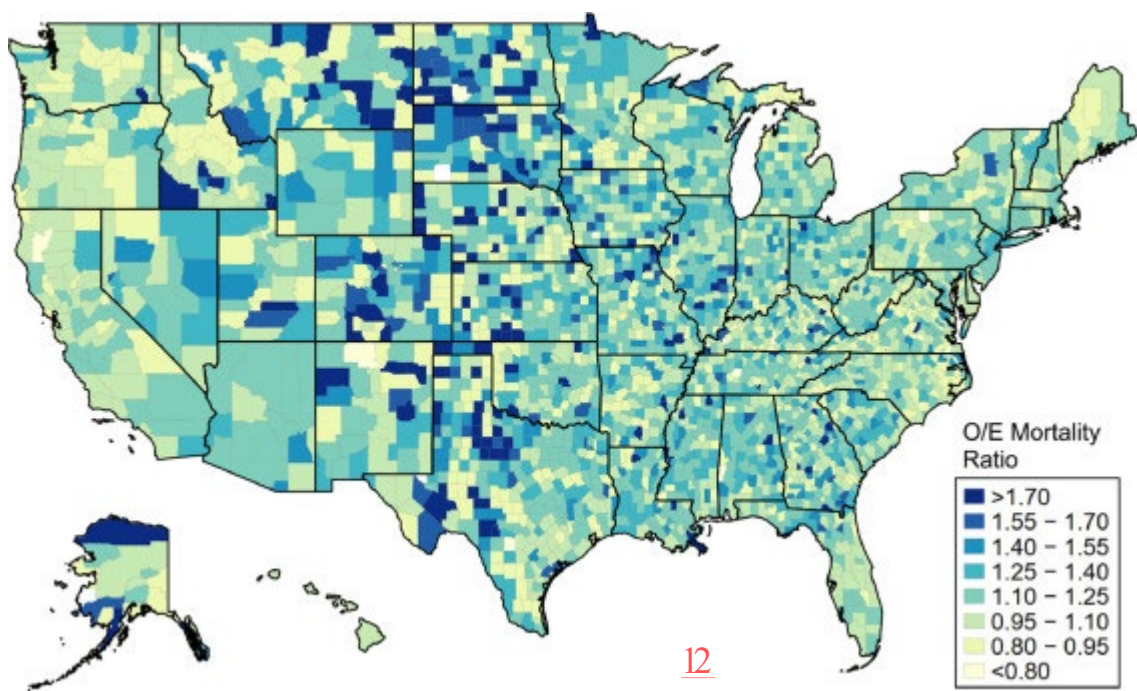
- Strategies to improve Utilization of Post-overdose Evidence-based Risk mitigation among Non-fatal Overdoses in VA (NOVA) (PI: Oliva)
 - Characterize non-fatal opioid and/or stimulant overdoses within VHA and patient-, prescriber-, and setting-related factors associated with post-overdose treatment utilization.
 - Describe utilization of clinical notes among providers identify barriers of use
- Applying Critical Race Theory to investigate the impact of COVID-19-related policy changes on racial/ethnic disparities in medication treatment for opioid use disorder (PIs: Williams and Chen)
 - Mixed methods, examine how changes in receipt of MOUD and retention following COVID-19 MOUD policies differ between Black and Hispanic/Latinx compared to non-Hispanic White patients with OUD; 2) examine how community-level sequelae of structural racism influence pre/post COVID-19 changes in MOUD receipt for Black and Hispanic/Latinx patients with OUD
- Impact of COVID-19 on Implementation and Outcomes of VA's Life-Sustaining Treatment Decisions Initiative (PIs: Wiener and Linsky)
 - See how the pandemic affect the frequency, timing, and quality of goals of care conversations

Downstream Effects

- Clearly, this will be an ongoing line of study for years to come.
 - Long-term effects on chronic diseases
 - Changes in prescribing patterns
 - Long-run mortality and morbidity from disrupted care
- Will always be difficult to tease apart temporal trends and direct effects of the pandemic

Current Literature - Excess Mortality

- Excess mortality rate of 13% in 2020, which corresponds to 50,299 excess deaths.
 - Regional variation correlated with COVID burden in county
 - Slightly lower than general population
- Hospitalized patients with diabetes who were positive for COVID-19 infection were 3.6 times more likely to die than those who were negative for COVID-19 infection [13](#)
 - Blacks and Hispanics were disproportionately affected [14](#)

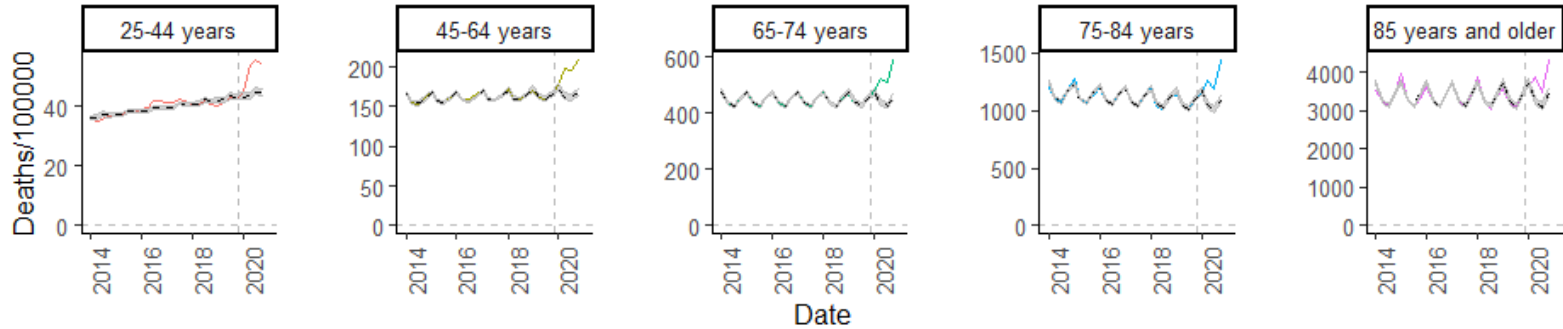


[12](#)

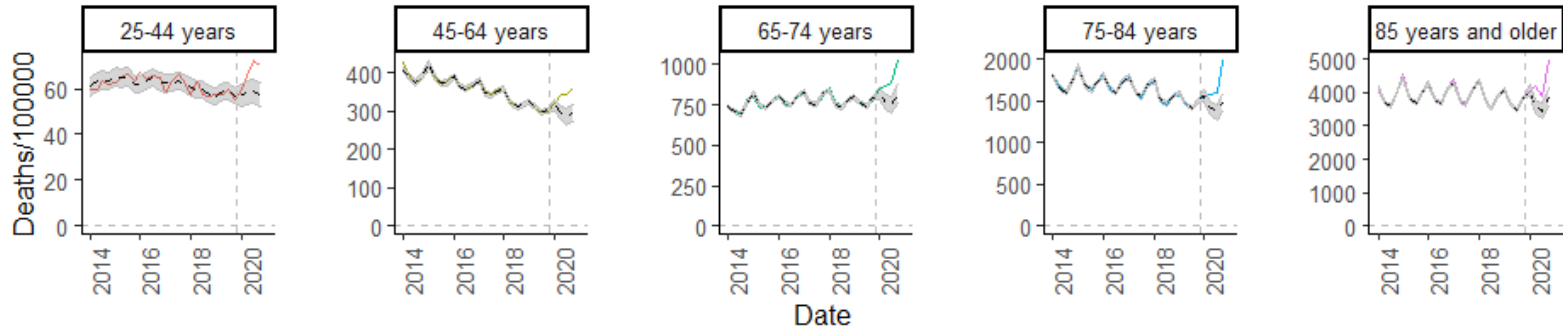
Ongoing Work - Excess Mortality

DCNP Work: Observed vs expected mortality US population compared to VA enrollees

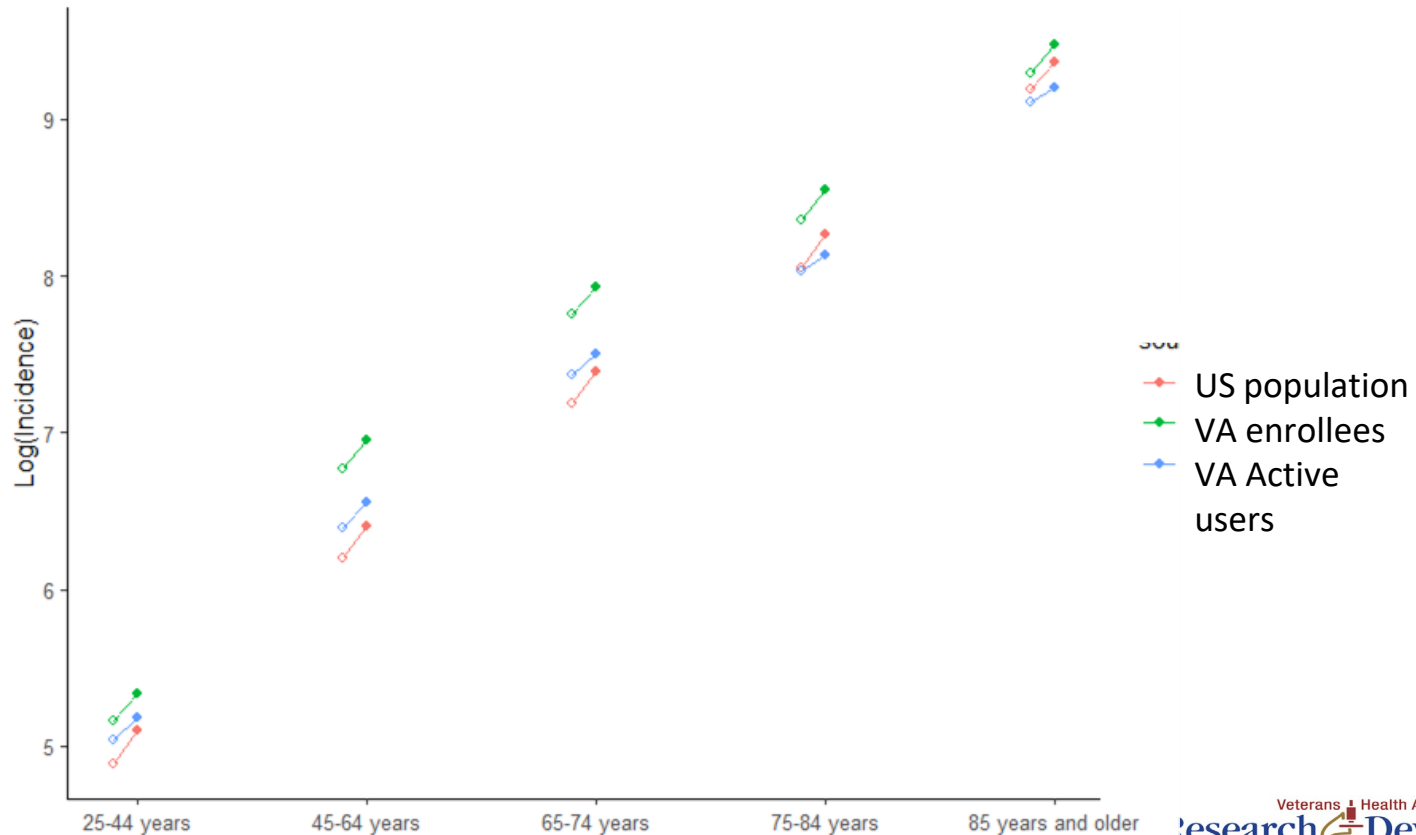
General US population



VA enrollees



Observed vs expected mortality by age in 2020 (open symbol=expected)



Population-standardized excess mortality and relative change

Excess

incidence

	US general population	VA enrollees	VA active users
2020 Q1	-1.7	77.2	-2.7
2020 Q2	63.7	126.8	40.1
2020 Q3	53.7	106.9	24.7
2020 Q4	89.5	155.4	37.4

Rate

ratio

	US general population	VA enrollees	VA active users
2020 Q1	1.02	1.02	1.00
2020 Q2	1.22	1.14	1.10
2020 Q3	1.21	1.19	1.13
2020 Q4	1.25	1.26	1.19

Ongoing Projects - DCNP

Aim 2: How was the management of specific conditions disrupted during the pandemic and what was the impact of the disruption?

Example: Hypertension

Evaluate association between disruption in blood pressure monitoring during the pandemic and control of hypertension

Aim 3: To compare patient-level pre-pandemic and pandemic risk for mortality among VA active users overall, and by key demographic and clinical subgroups

WP1: Compare pre-pandemic and pandemic risk for mortality using an in-depth, patient-level approach

- RQ1.1: Adjusting only for month and demographics, how do estimates compare to results from ecological analyses (Aim 1)?
- RQ1.2: How do estimates change by additionally adjusting for facility-level characteristics (e.g., site-specific COVID-19 case load, region linked with urban/rural status) and individual-level characteristics (e.g., pre-existing comorbidity, physiologic frailty)?

WP2: Explore differences in pre-pandemic and pandemic risk for mortality by key demographic and clinical subgroups

- RQ2.1: Do changes in pre-pandemic and pandemic risk for mortality differ by age, race/ethnicity, sex?
- RQ2.2: Do changes in pre-pandemic and pandemic risk for mortality differ by diagnostic and procedural code groupings?

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Thank you!

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1. Ferguson, J. M., Jacobs, J., Yefimova, M., Greene, L., Heyworth, L., & Zulman, D. M. (2021). Virtual care expansion in the Veterans Health Administration during the COVID-19 pandemic: clinical services and patient characteristics associated with utilization. *Journal of the American Medical Informatics Association*, 28(3), 453-462.
2. Baum, A., Kaboli, P. J., & Schwartz, M. D. (2021). Reduced in-person and increased telehealth outpatient visits during the COVID-19 pandemic. *Annals of internal medicine*, 174(1), 129-131.
3. Connolly, S. L., Stolzmann, K. L., Heyworth, L., Weaver, K. R., Bauer, M. S., & Miller, C. J. (2021). Rapid increase in telemental health within the Department of Veterans Affairs during the COVID-19 pandemic. *Telemedicine and e-Health*, 27(4), 454-458.
4. Gujral, K., Van Campen, J., Jacobs, J., Kimerling, R., Blonigen, D., & Zulman, D. M. (2022). Mental health service use, suicide behavior, and emergency department visits among rural US veterans who received video-enabled tablets during the COVID-19 pandemic. *JAMA network open*, 5(4), e226250-e226250.
5. Jacobs, J., Ferguson, J. M., Van Campen, J., Yefimova, M., Greene, L., Heyworth, L., & Zulman, D. M. (2021). Organizational and External Factors Associated with Video Telehealth Use in the Veterans Health Administration Before and During the COVID-19 Pandemic. *Telemedicine and e-Health*.
6. Rose, L., Tran, L. D., Asch, S. M., & Vashi, A. (2021). Assessment of changes in us veterans health administration care delivery methods during the covid-19 pandemic. *JAMA network open*, 4(10), e2129139-e2129139.
7. Tran LD, Rose L, Urech T, Vashi A. Encounters after Appointments Cancelled Due to COVID-19 in the Veterans Affairs Health Care System. Technical Report 38. Menlo Park, CA. VA Palo Alto Health Economics Resource Center; November 2021.

8. Tran, L. D., Rose, L., Urech, T., Dalton, A., Wu, S., & Vashi, A. A. (2021). Short-term effects of canceled elective procedures due to covid-19: Evidence from the veterans affairs healthcare system. *Annals of surgery*, 274(1), 45.
9. McGinnis, K. A., Skanderson, M., Justice, A. C., Akgün, K. M., Tate, J. P., King Jr, J. T., ... & Park, L. S. (2021). HIV care using differentiated service delivery during the COVID-19 pandemic: a nationwide cohort study in the US Department of Veterans Affairs. *Journal of the International AIDS Society*, 24, e25810.
10. Englum, B. R., Prasad, N. K., Lake, R. E., Mayorga-Carlin, M., Turner, D. J., Siddiqui, T., ... & Lal, B. K. (2022). Impact of the COVID-19 pandemic on diagnosis of new cancers: A national multicenter study of the Veterans Affairs Healthcare System. *Cancer*, 128(5), 1048-1056.
11. Klaassen, Z., Stock, S., Waller, J., De Hoedt, A., & Freedland, S. J. (2022). Association of the COVID-19 Pandemic With Rates of Prostate Cancer Biopsies and Diagnoses in Black vs White US Veterans. *JAMA oncology*.
12. Feyman, Y., Auty, S. G., Tenso, K., Strombotne, K. L., Legler, A., & Griffith, K. N. (2022). County-Level Impact of the COVID-19 Pandemic on Excess Mortality Among US Veterans: A Population-Based Study. *The Lancet Regional Health-Americas*, 5, 100093.
13. Spanakis, E. K., Yoo, A., Ajayi, O. N., Siddiqui, T., Khan, M. M., Seliger, S. L., ... & Sorkin, J. D. (2021). Excess mortality in COVID-19-positive versus COVID-19-negative inpatients with diabetes: a nationwide study. *Diabetes care*, 44(9), e169-e170.
14. Lukowsky, L. R., Der-Martirosian, C., & Dobalian, A. (2022). Disparities in Excess, All-Cause Mortality among Black, Hispanic, and White Veterans at the US Department of Veterans Affairs during the COVID-19 Pandemic. *International journal of environmental research and public health*, 19(4), 2368.