

## ABSTRACT

This research is a retrospective cohort study that explores how telehealth has affected access to treatment for Veterans diagnosed with PTSD within the geographic reach of Kentucky when comparing data from the pre-SARS-CoV2 and post-SARS-CoV2 eras. Data was obtained from the UK Healthcare System and extracted from electronic medical records (EMR). The primary outcome variable was access to care, defined as the distance patients were willing to travel to seek care. Patients were considered to have received telehealth treatment if the treatment was received via phone call or video conference. Demographic data including age, gender, race, ethnicity, level of insurance, county and zip code were extracted. Data were screened for quality control and checked for the presence of outlier(s) or influential observations. Continuous variables were summarized using descriptive statistics. Rates were reported for categorical variables. The results of this study shown a slight increase in the number of counties serve when comparing Pre-SARS-CoV2 and Post-SARS-CoV2 eras. Descriptive statistics were used to analyze patient demographics. There was no statistically significant association between cohort and gender, cohort and race, cohort and age.

## INTRODUCTION

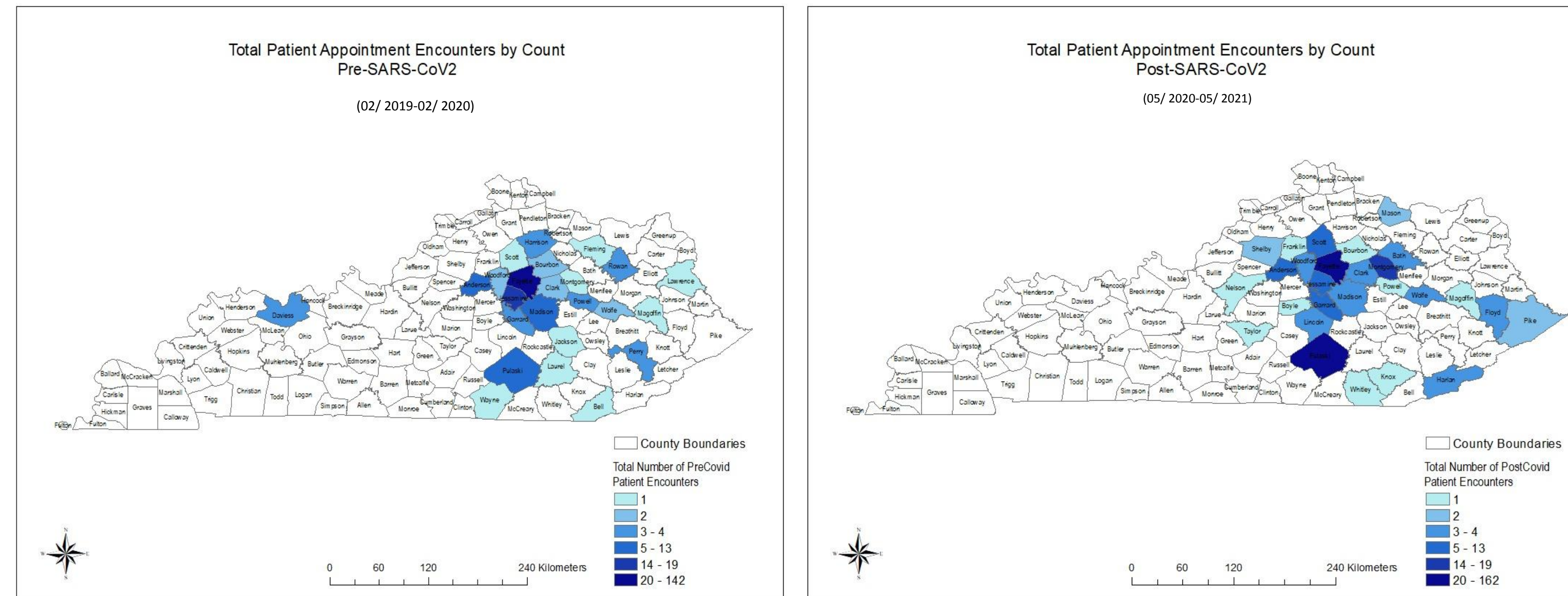
- Approximately 3.5% of US adults every year are affected by PTSD.<sup>10</sup> PTSD rates are particularly extraordinary among Veterans.
- Research has shown patients with PTSD have a higher mortality rate compared to those without.<sup>5</sup> Thus, effective and accessible treatment is paramount in ensuring the wellbeing of patients with PTSD.
- Roughly 69% of Kentucky counties are considered medically underserved or partially medically underserved.<sup>8</sup> Lack of healthcare accessibility due to physician shortages<sup>12</sup> and lack of public transportation impede the receiving of healthcare.
- The SARS-CoV-2 pandemic put the need to surpass these treatment barriers into hyperdrive. Telehealth use during the pandemic was facilitated by loosening of national restrictions regarding telehealth reimbursement and use of HIPAA compliant telehealth platforms.<sup>3</sup> As a result there was a drastic increase in telehealth usage as many healthcare facilities such as the University of Kentucky Healthcare System were required to utilize telehealth.
- The purpose of this study is to show a comparison of usage of telehealth in comparison to in person office visits during the SARS-CoV-2 epidemic through examining access to care amongst patients receiving PTSD treatment within the University of Kentucky (UK) healthcare system comparing Pre-SARS-CoV-2 and Post-SARS-CoV-2 data.
- Our hypothesis is that telehealth improved access to healthcare in Kentucky.

## METHODS

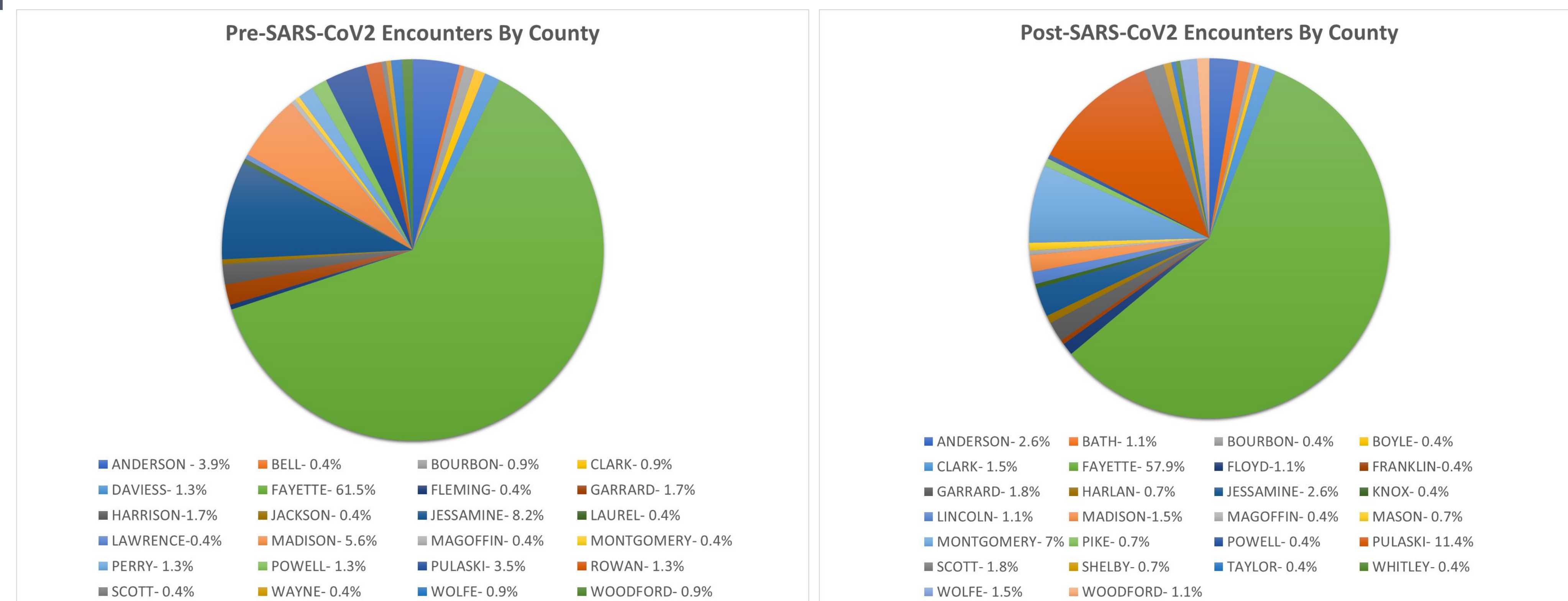
- This is a retrospective cohort study by CCTS protocol on adults receiving PTSD treatment pre-SARS-CoV-2, February 2019- February 2020, and post-SARS-CoV-2, May 2020 - May 2021.
- Data was obtained from the UK Healthcare System and extracted from electronic medical records (EMR). The primary outcome variable was access to care measured by the number of Kentucky counties represented in each cohort.

- Patients were considered to have received telehealth treatment if the treatment was via telephone call or videoconference according to UK Healthcare guidelines<sup>11</sup>.

## RESULTS



The Kentucky county density maps above show the geographical distribution of the participating patients and which counties they resided in during the Pre-SARS-CoV-2 and post-SARS-CoV-2 time periods. White counties had zero participants; as the number of patients residing in that county increased, the shade of blue became darker.



The counties from which the participating patients resided are organized into a pie chart to compare the number of patients from each county. The exact percentages for each county are listed below the chart. There is an increase in the number of counties served in the Post-SARS-CoV2 cohort, as well as an increased percentage of encounters outside of Fayette County.

Patient Demographics by Encounter		
Variable	Mean ± SD or % (n)	
	Pre-SARS-CoV2 (n=231)	Post-SARS-CoV2 (n= 273)
Age (mean ± SD)	45.2± 14.2	42.1± 13.6
Gender	Female	76.6% (177)
	Male	23.4% (54)
Race	Black	13.4% (31)
	White	84.8% (196)
	Unreported	1.7% (4)
Ethnicity	Hispanic/Latino	6.5% (15)
	Non Hispanic/Latino	92.2% (213)
	Reported/Refused	0.4% (1)
		3.3% (9)

The demographics for the patient populations for pre-SARS-CoV-2 are listed alongside post-SARS-CoV-2 for comparison. The demographics include the median age, gender, race, and ethnicity.

The association between Cohort and Age, Gender, Race, Ethnicity using Chi square and One-way Anova tests (n=488)

Variable	P-value
Age	0.0184
Gender	0.1493
Race	0.9437
Ethnicity	0.001103

Statistical analyses were conducted on the demographic data to determine the significance of the differences between pre-SARS-CoV-2 and post-SARS-CoV-2. The p-values are listed for age, gender, race and ethnicity using a population of 488.

## METHODS (CONT.)

- Patients were included if they were 18 years and older, received outpatient treatment, and met the *International Classification of Disease, Tenth Revision (ICD-10)* code F43.12. Demographic data including age, gender, race, ethnicity, level of insurance, county and zip code were extracted.
- Continuous variables were summarized using descriptive statistics. Chi-square and a one-way ANOVA was run to determine association between cohort and age, gender, race, and ethnicity. Access to care was reported for categorical variables.

## DISCUSSION

Limitations:

- Use of a single healthcare system
- Restricted data set due to lack of data availability
- Implementation of new electronic medical record system within UK Healthcare caused inconsistent data collection methods

Barriers Created By Telehealth:

- Requirement to have access to a device with a camera, internet connection and active email account
- The patient had to physically be in the state of Kentucky to receive telehealth from UK

- Lack of insurance coverage for telehealth services

Physical Barriers to Access to Care Removed By Telehealth:

- Need for transportation
- Elimination of long distance travel

Demographics Considerations:

- Statistical significance found between cohort and ethnicity
- Possible limitations of interpreter use with telehealth- potential for further studies

Implications:

- Identify tangible solutions to barriers to healthcare access
- Serve as a basis for further studies that help lead to better standards of practice
- Establish data surrounding telehealth implementation

## CONCLUSION

- The SARS-CoV2 pandemic streamlined telehealth and brought on advances in the system that would have otherwise taken years.
- There was a slight increase in the number of counties served from in the Pre-SARS-CoV2 and Post-SARS-CoV2 eras.
- There was no statistically significant association between cohort and gender, cohort and race, cohort and age, but cohort and ethnicity did reveal statistical significance.
- Grand assumptions cannot be made from this small sample set but it does show that this merits further exploration and study.
- The information gathered during this study may be able to help shape the decisions of companies when evaluating whether or not to continue telehealth services.

