Crisis Mapping

Increasing mental health care with the power of data

Introduction

A post-pandemic opportunity

Hypothesis

Remote Rise

After 2020, telehealth utilization levels have risen from 13 to 17 percent across all specialties

Market Size

U.S national healthcare spending was $3.8 Trillion in 2019

Adoption

Even though levels are rising, people are still hesitant to use telemedicine

Facts and Issues

1. Suicide is currently the 10th leading cause of death in the United States
2. More than 47,500 people died by suicide in 2019
3. The number of people who think about or attempt suicide is even higher. In 2019, 12 million contemplated suicide, 3.5 million planned a suicide attempt, and 1.4 million attempted suicide.
4. Suicide Rates have been steadily increasing in the past 20 years

- I believe a more proactive approach to mental health can help lower these numbers. Because there is still a great amount of stigma surrounding mental health, people are afraid to seek help.
- Remote therapy provides a fantastic opportunity to this issue. It is an easier, faster, and more affordable approach. It also provides a greater opportunity to reach underserved areas in the US.

-CDC "Facts About Suicide" https://www.cdc.gov/suicide/facts/index.html

Opportunity

01

Outreach

Telemedicine provides greater access to care

02

Increase Subscriptions

Generates recurring revenue

03

Reduce Harm

Proactive approach will reduce self harm

Goal

Determine which areas of the US have the greatest need for remote counseling & care

- Map out which states have higher rates of suicide
- Compare rural and urban areas to see which rate is higher
- Check to see how many Psychiatric facilities each state has

Solution

Build a geospatial clustering model to Determine which zip codes to target with ads

Methodology

Data

- NVSS Mortality Data -CDC
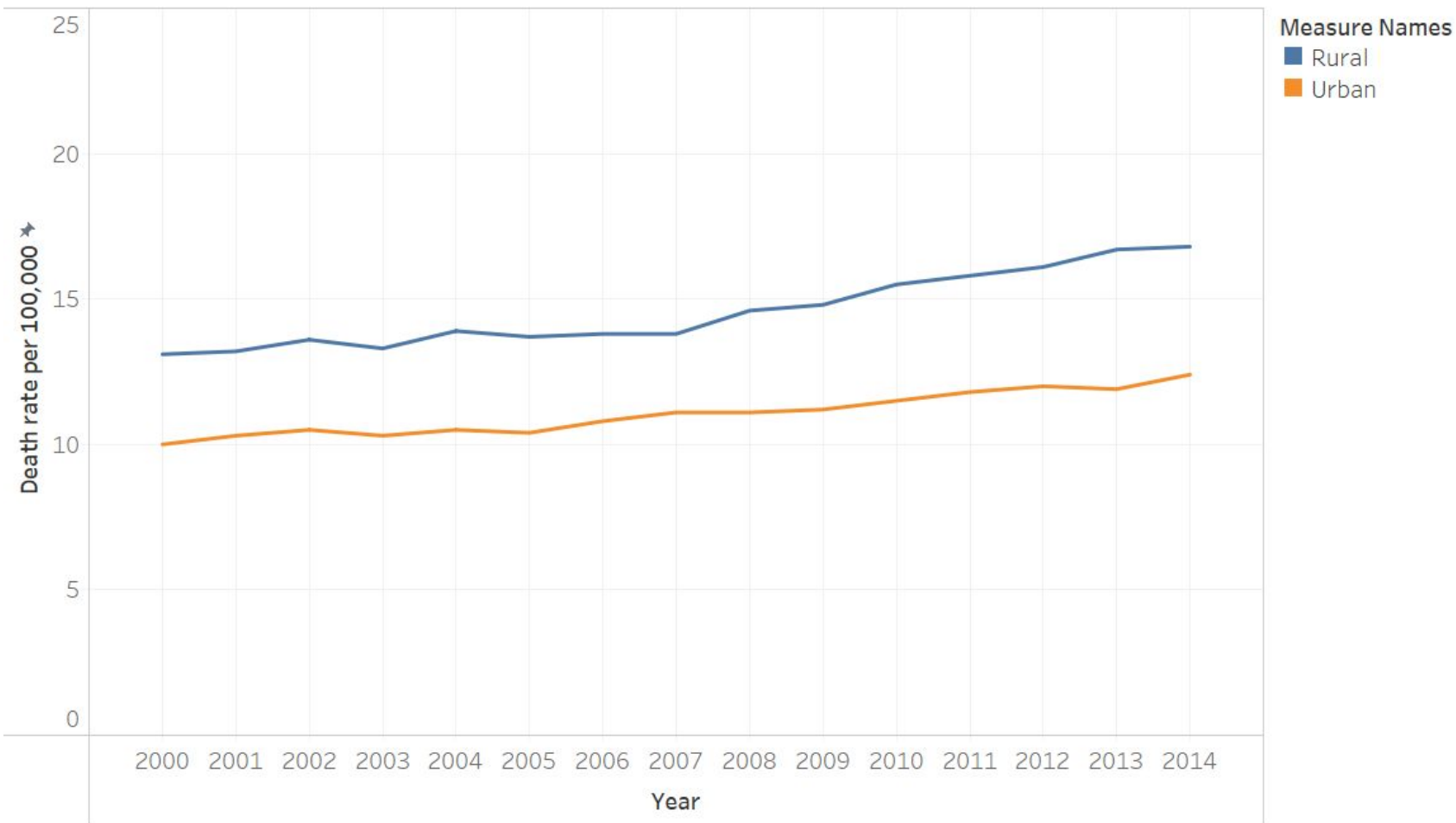- NCHS Urban-Rural Classification
- 2021 AHA Hospital Data

EDA

- Remove all missing values
- Concatenate FIPS #'s to allow for mapping
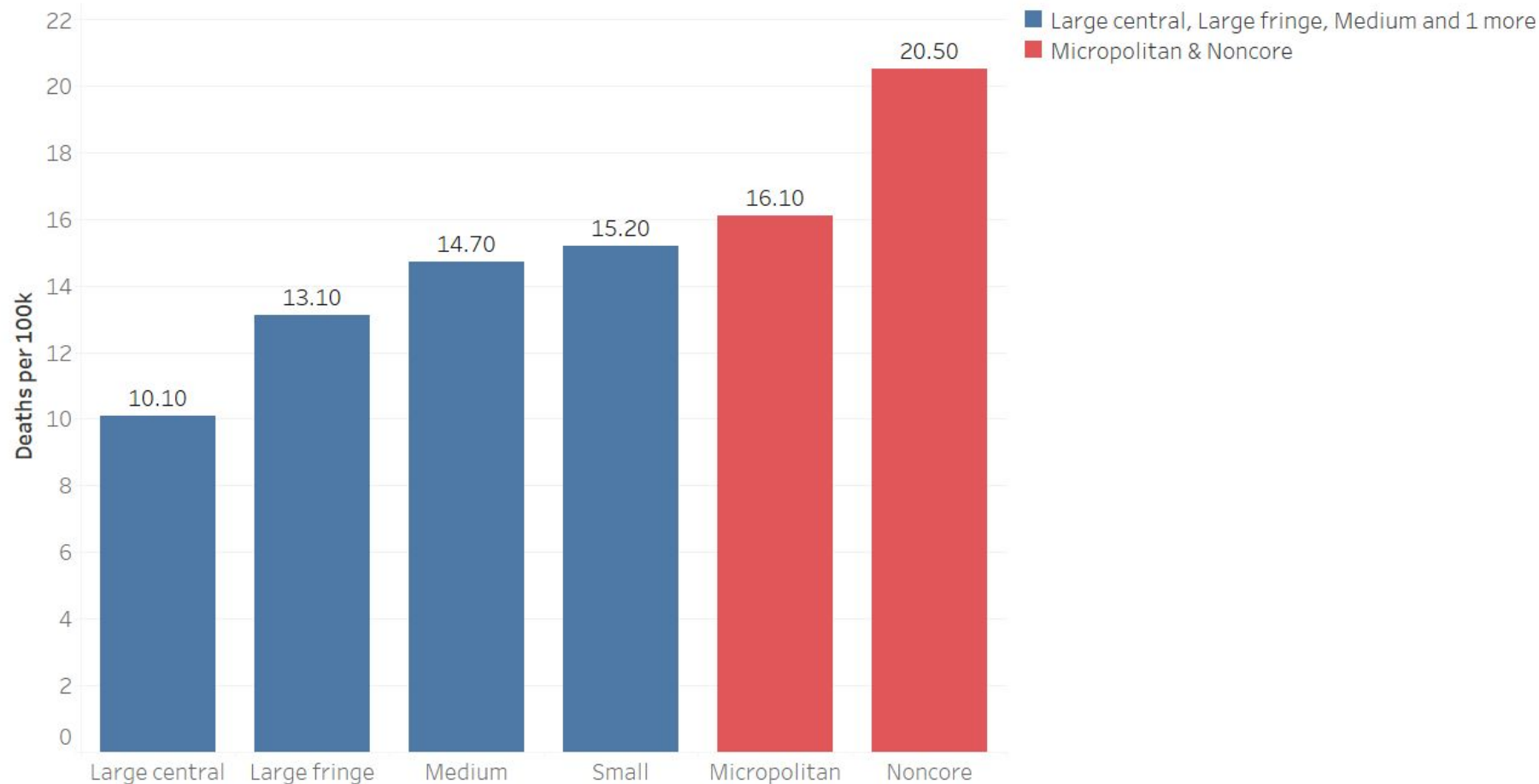- Create adjusted mortality rate per 100,000
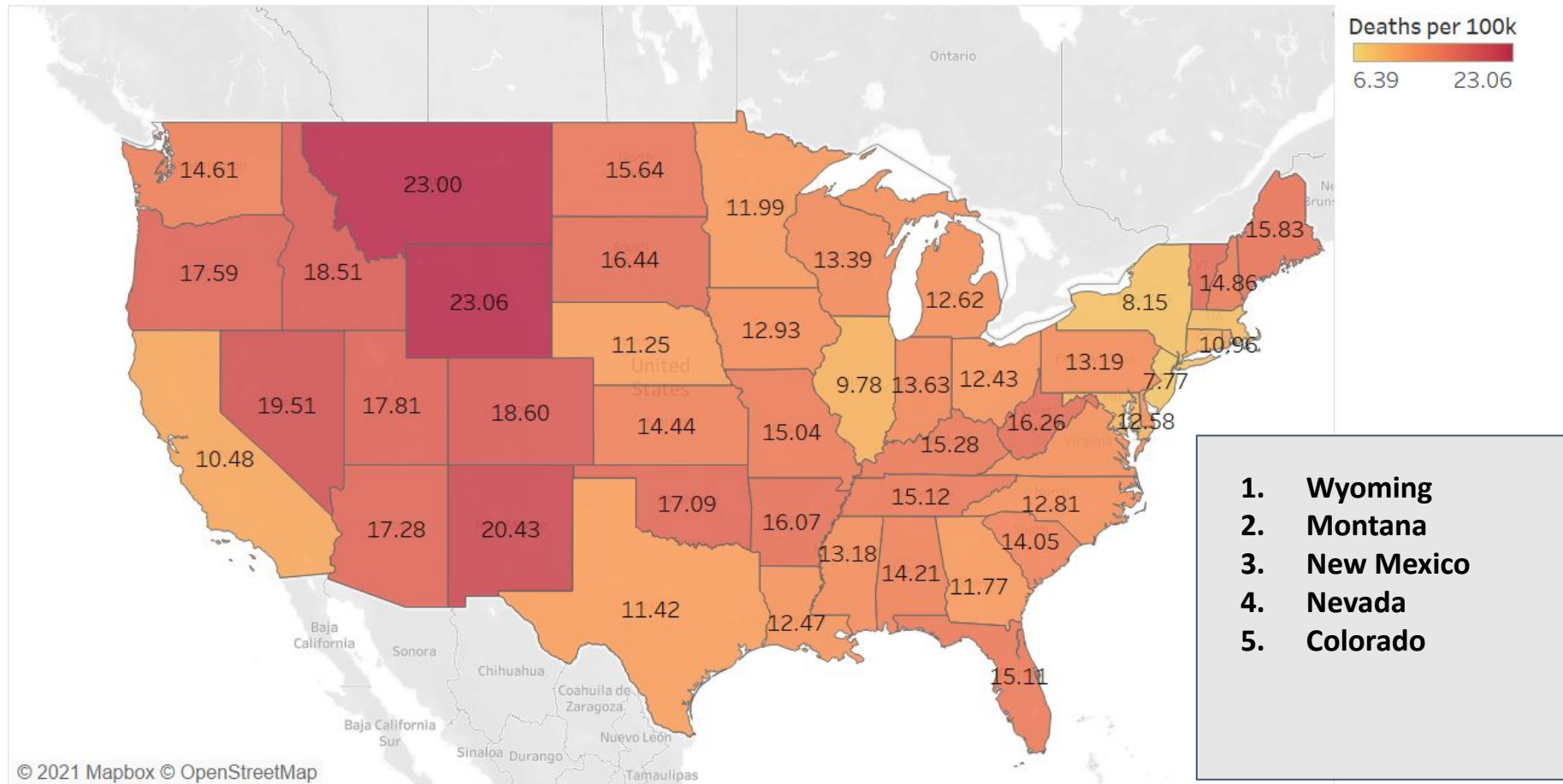
Visualization

Suicide rates, by urban-rural status

The trends of Rural and Urban for Year. Color shows details about Rural and Urban.

Suicide Rates, by Urbanicity 2000-2018

Legend:
- ■ Large central, Large fringe, Medium and 1 more
- ■ Micropolitan & Noncore

Deaths per 100k

Category	Deaths per 100k
Large central	10.10
Large fringe	13.10
Medium	14.70
Small	15.20
Micropolitan	16.10
Noncore	20.50

Deaths per 100k for each Nchs Code. Color shows details about Urban. The marks are labeled by Deaths per 100k.

Deaths per 100k by State

Deaths per 100k
6.39   23.06

14.61
23.00
15.64
11.99
15.83
17.59
18.51
16.44
13.39
12.62
8.15
14.86
23.06
11.25
12.93
9.78 13.63 12.43 13.19 10.96
7.77
19.51 17.81 18.60 14.44 15.04 16.26 12.58
15.28
17.09 15.12 12.81
17.28 20.43 16.07 14.05
13.18 14.21 11.77
11.42 12.47
15.11

1. **Wyoming**
2. **Montana**
3. **New Mexico**
4. **Nevada**
5. **Colorado**

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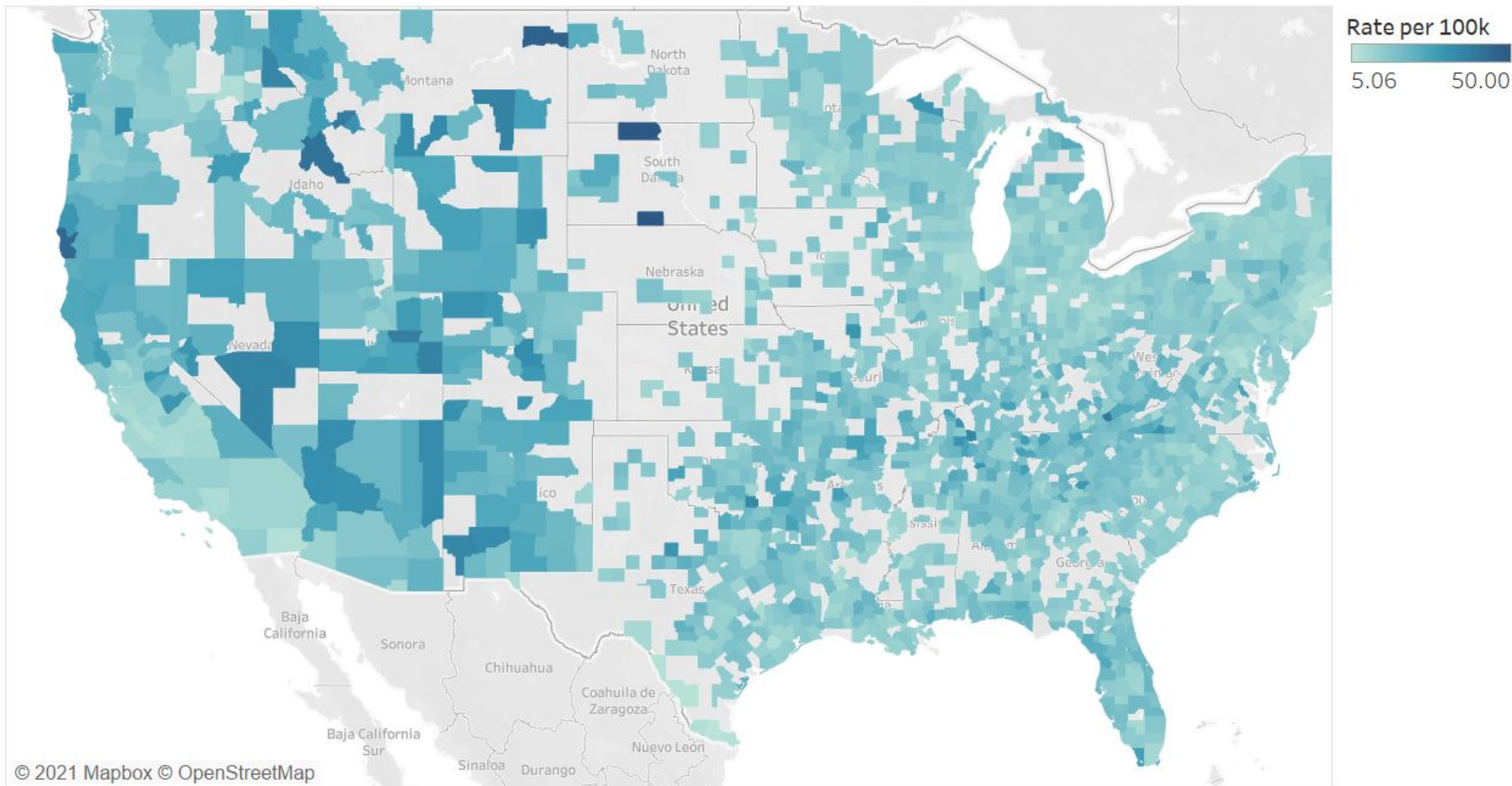
Map based on Longitude (generated) and Latitude (generated). Color shows sum of Deaths per 100k. The marks are labeled by sum of Deaths per 100k. Details are shown for State.
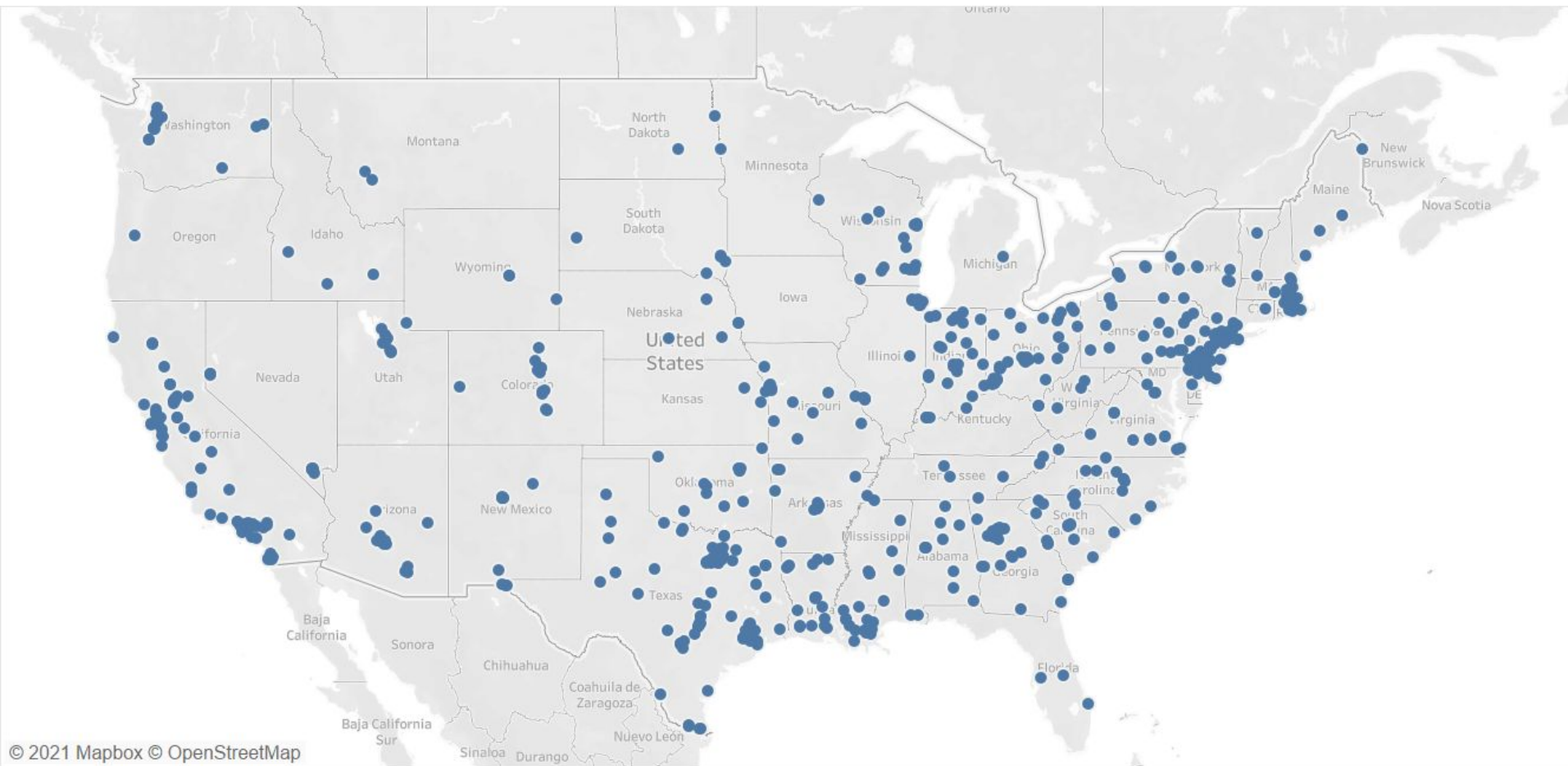
Sheet 5

Map based on Longitude and Latitude.

Suicide Rates by County

Rate per 100k

5.06   50.00

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Map based on Longitude (generated) and Latitude (generated). Color shows sum of Rate per 100k. Details are shown for FIPSCODE. The view is filtered on Latitude (generated) and Longitude (generated). The Latitude (generated) filter keeps non-Null values only. The Longitude (generated) filter keeps non-Null values only.

Insight

Small Towns

Rural suicide rates were greater than urban suicide rates, this difference has increased in the last 20 years

State by State

States with smaller populations had a greater adjusted rate

Region

The Mountain West region had some of the highest rates

Care

Despite having greater rates, there are far fewer Psychiatric facilities in these states

Factors to consider

Cost
Use a tiered subscription model

Hesitancy
People still don't trust telemedicine

Age
Older people might be unable

Future Work

Build an actual model

01 Continue to add more inputs (age, gender, income) to increase model accuracy

Risks

02 This provides a higher risk of Bias, which could exclude certain groups

Thanks

https://10ay.online.tableau.com/ #/site/jgauss/workbooks/919248 /views

National Suicide Prevention Lifeline: 1-800-273-8255