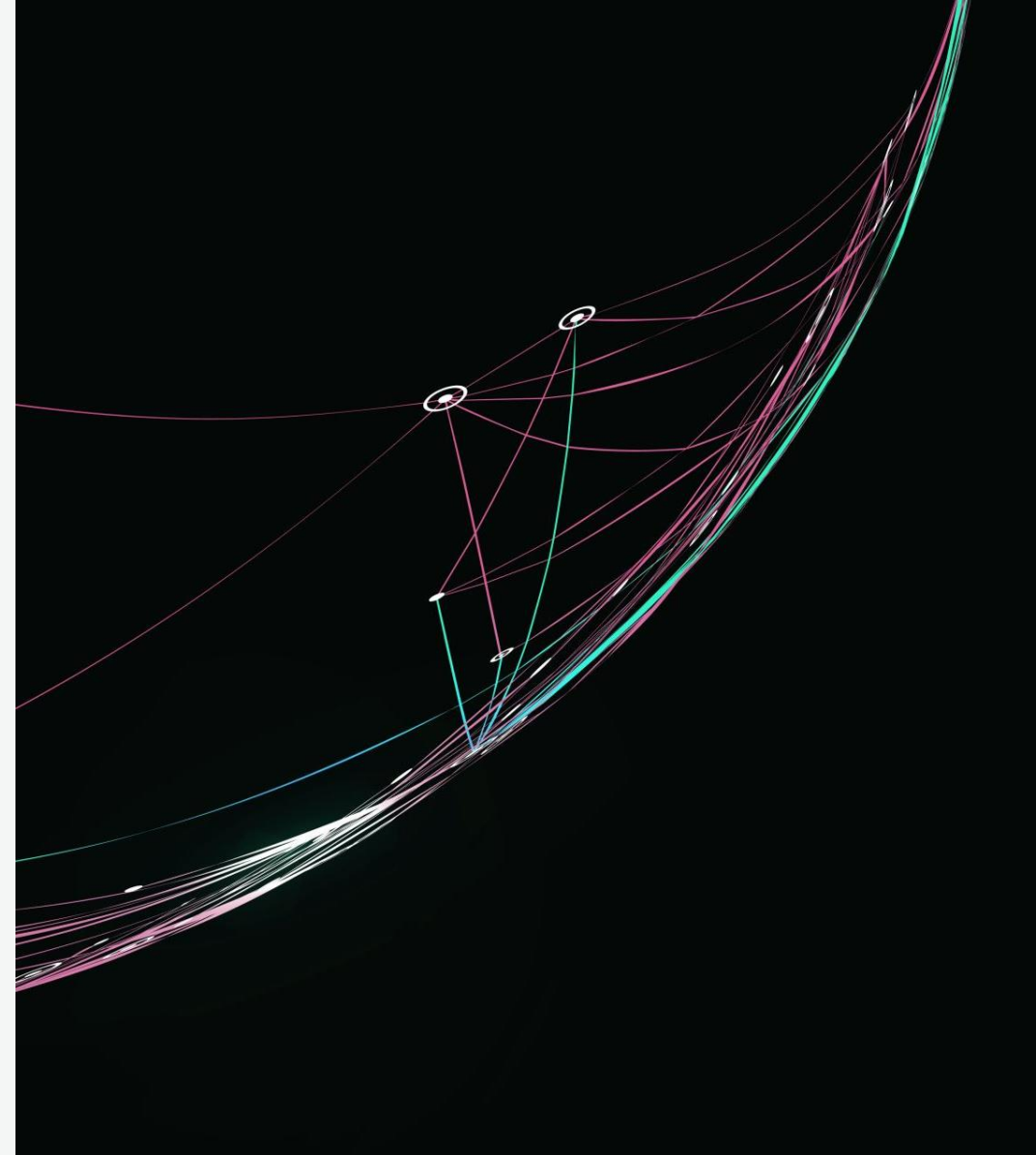


Life and Death: Contrasting Health Realities in Rural and Urban America

By: Adithya and Ahmad



Main Goals of our Research

- To compare different causes of death on a county level
- We looked at data for the years 2014 to 2018 for all the causes of death
- We got all our data from <https://www.ahrq.gov/sdoh/data-analytics/sdoh-data.html#download>
- We looked at different variables such as self-harm, drug overdose, etc.

Classification of Rural and Urban Counties



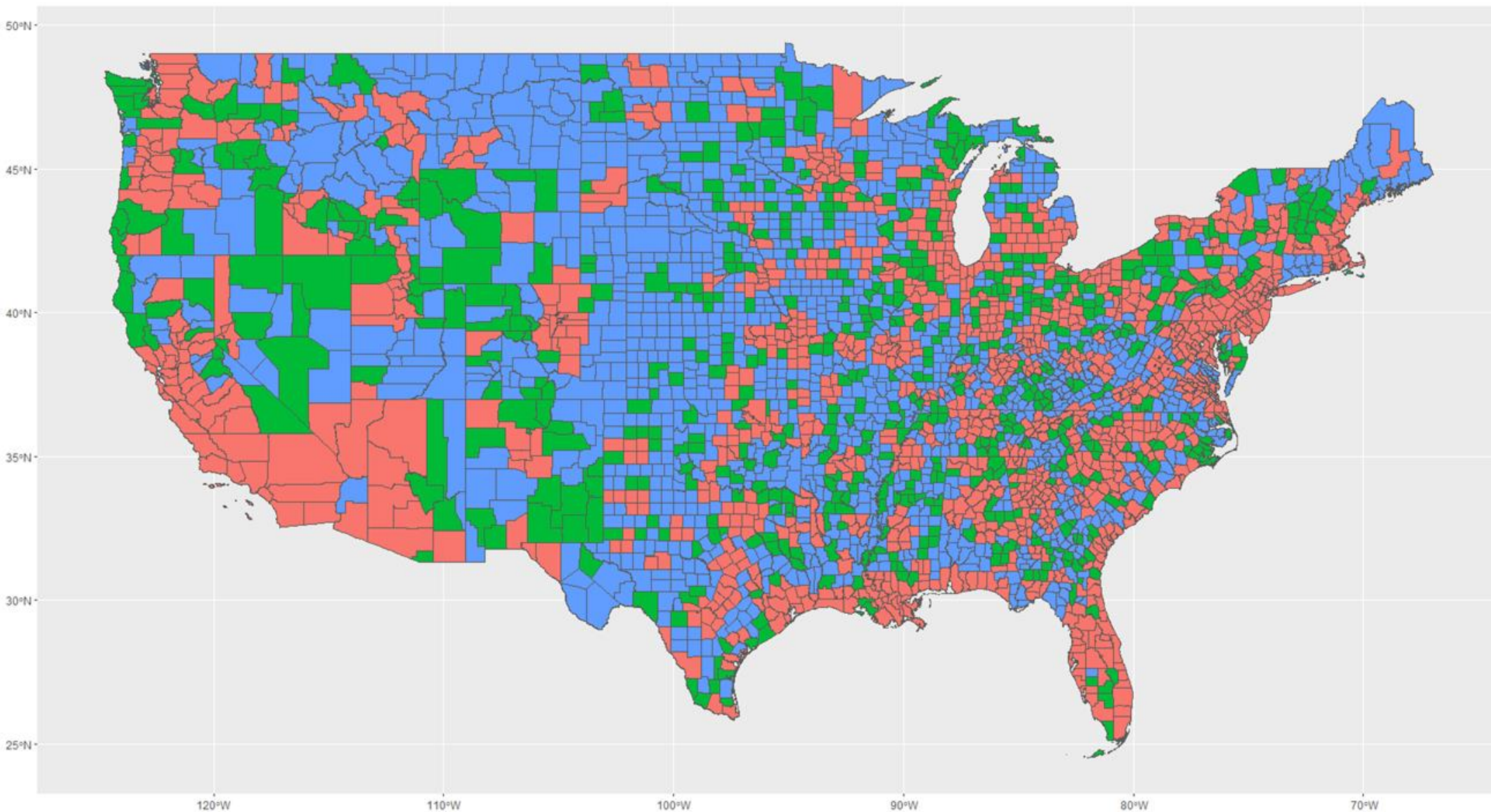
Metropolitan Statistical Areas (MSA): Metropolitan counties are those that include a city with a population of at least 50,000 people, along with adjacent counties that are socially and economically integrated with the urban core.



Micropolitan Statistical Areas: Micropolitan counties are similar to metropolitan counties but have an urban core with a population between 10,000 and 50,000 people.



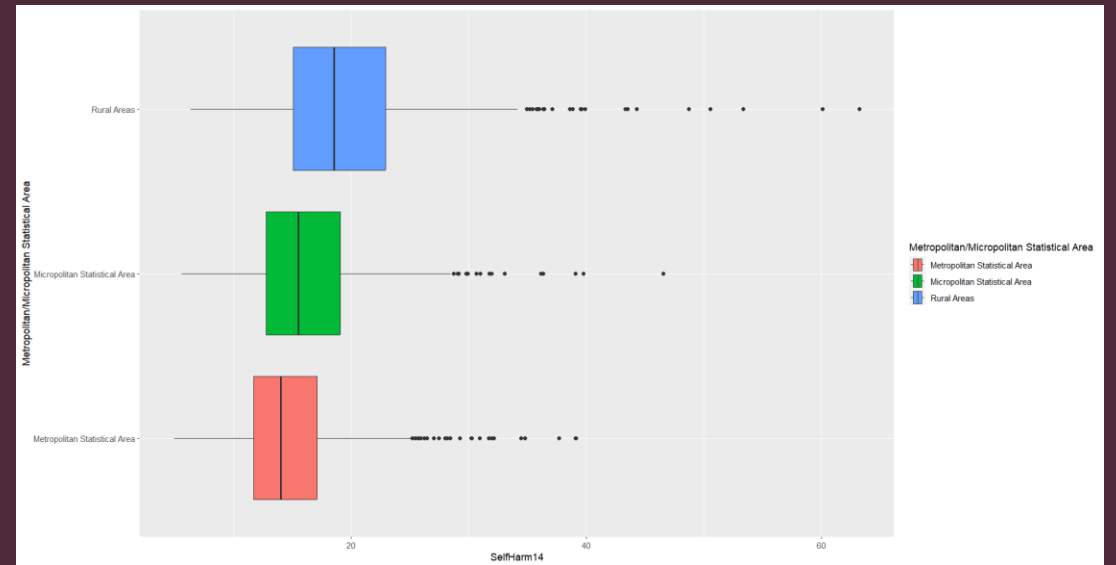
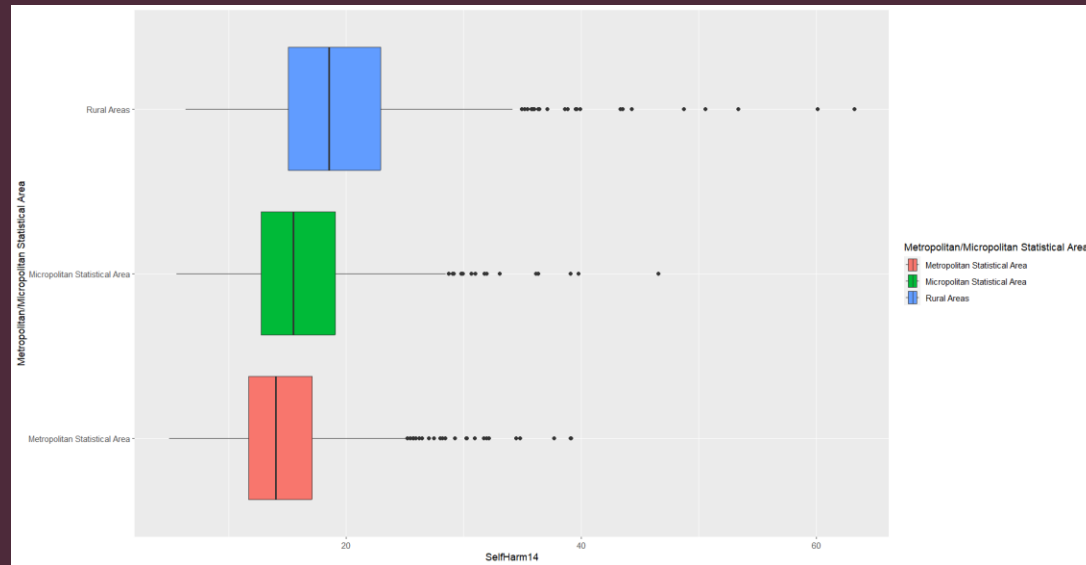
Non-Metropolitan or Rural Areas: Non-metropolitan counties are those that do not contain a city with a population greater than 50,000 or an urbanized area with a population greater than 50,000.



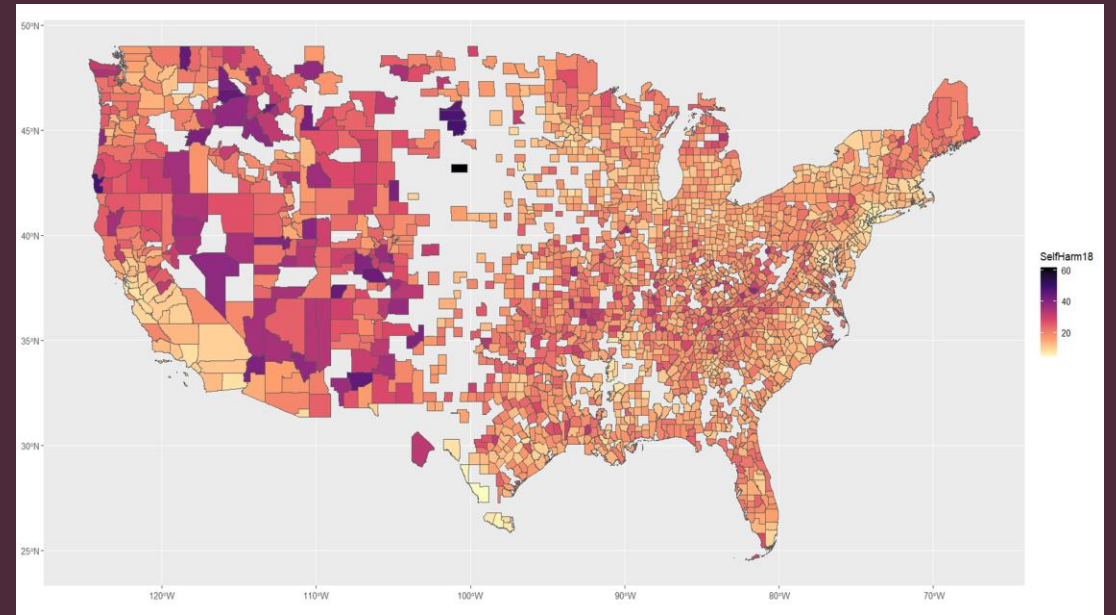
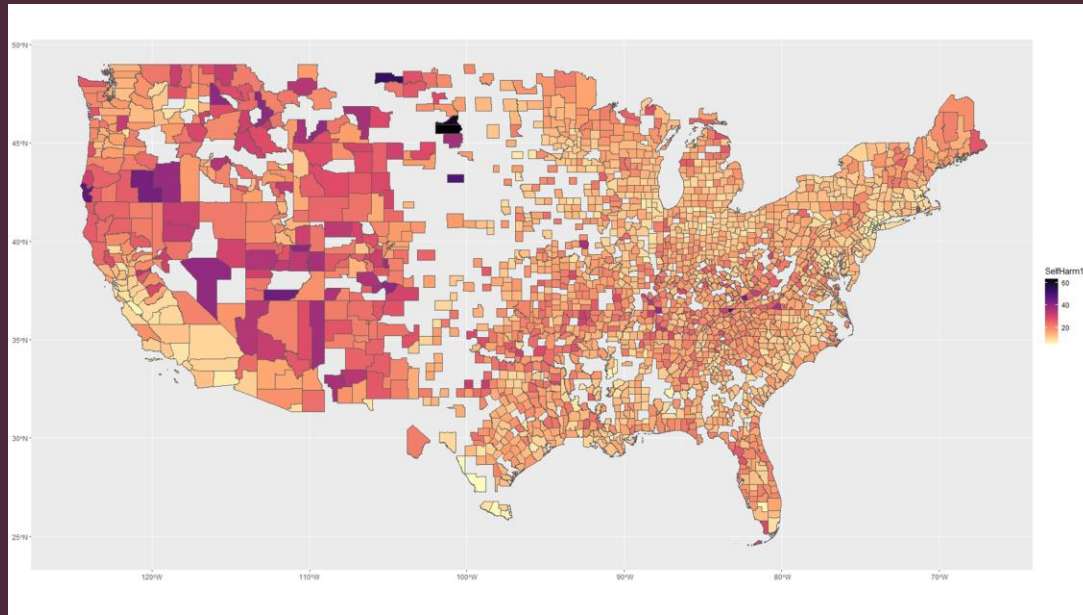
Metropolitan/Micropolitan Statistical Area

- Metropolitan Statistical Area
- Micropolitan Statistical Area
- Rural Areas

Boxplot for Self Harm for the year 2014 and 2018



Maps for Self Harm for the years 2014 and 2018



Anova Test for Self Harm Rate for the years 2014 and 2018

```
> summary.aov(modselfharm14)
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
'Metropolitan/Micropolitan Statistical Area'	2	9375	4688	146.6	<2e-16 ***
Residuals	2192	70076	32		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

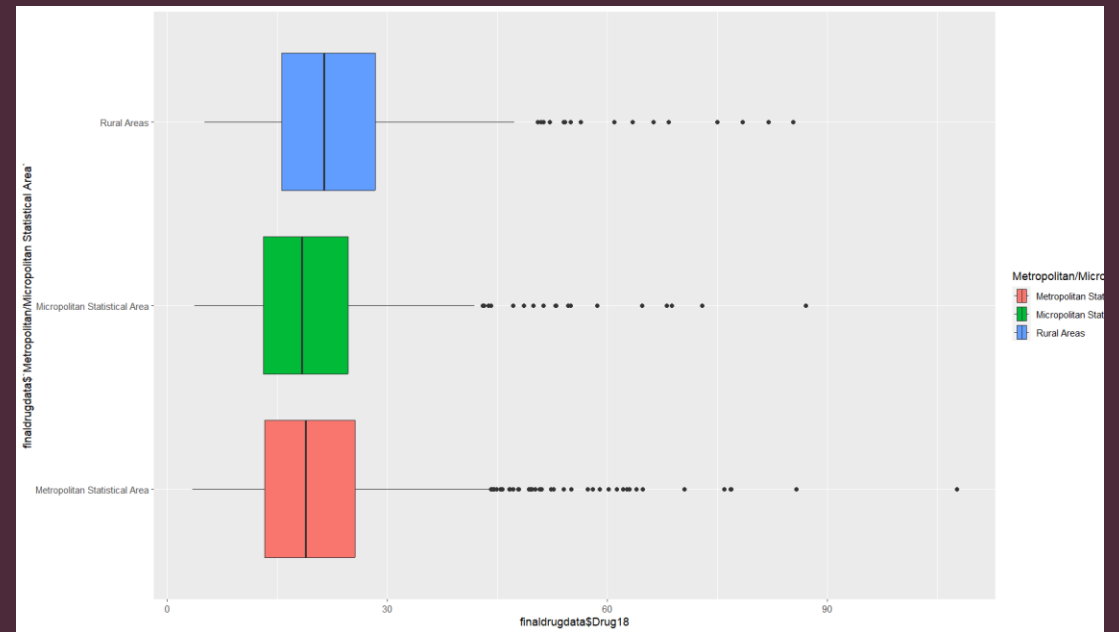
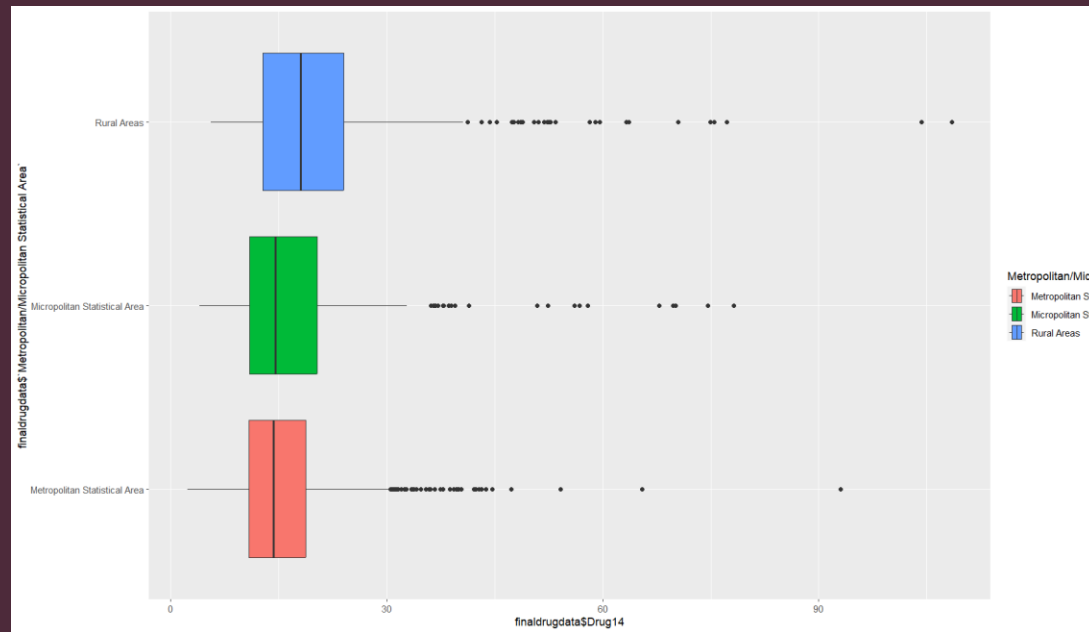
```
> summary.aov(modselfharm18)
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
'Metropolitan/Micropolitan Statistical Area'	2	10054	5027	140.9	<2e-16 ***
Residuals	2192	78210	36		

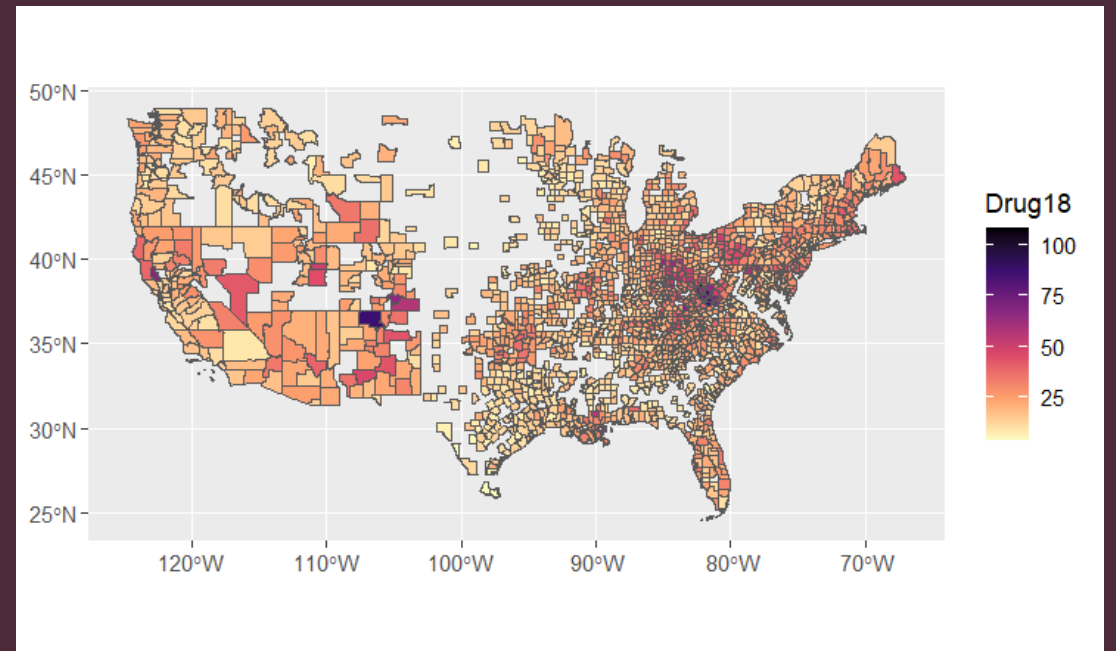
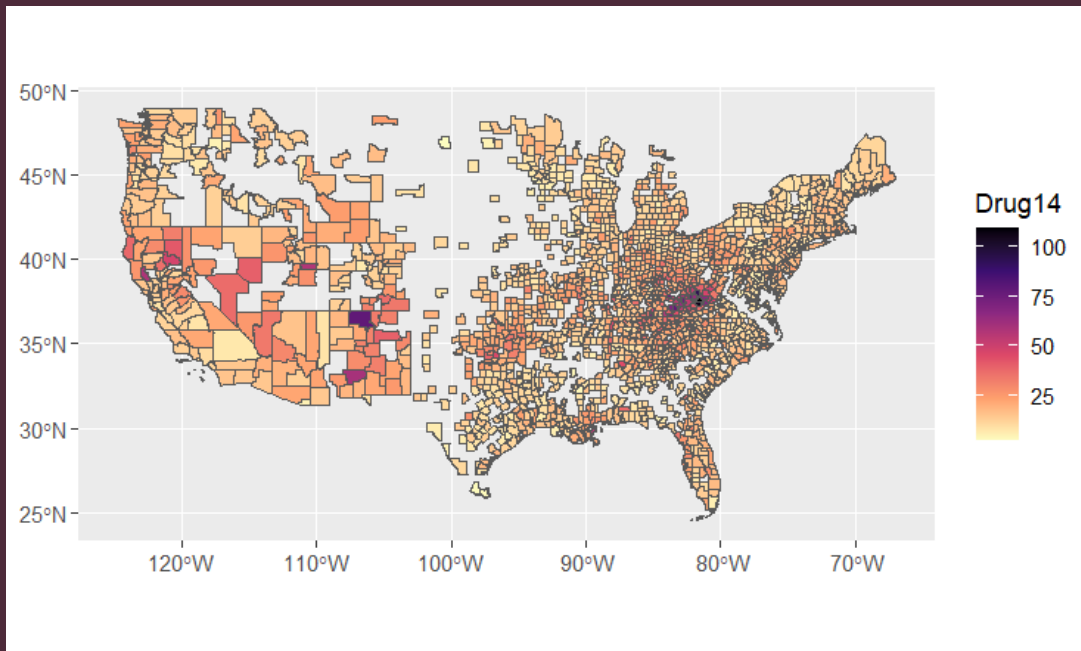
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```
>
```

Boxplot for Drug Death Rate for the year 2014 and 2018



Maps for Drug Death Rate for the years 2014 and 2018



Anova Test for Drug Death Rate for the years 2014 and 2018

```
> modselfdrug14 = lm(Drug14~`Metropolitan/Micropolitan Statistical Area`,data = finaldrugdata)
```

```
> summary.aov(modselfdrug14)
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
`Metropolitan/Micropolitan Statistical Area`	2	8415	4207	45.36	<2e-16 ***
Residuals	1905	176692	93		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```
> modselfdrug18 = lm(Drug18~`Metropolitan/Micropolitan Statistical Area`,data = finaldrugdata)
```

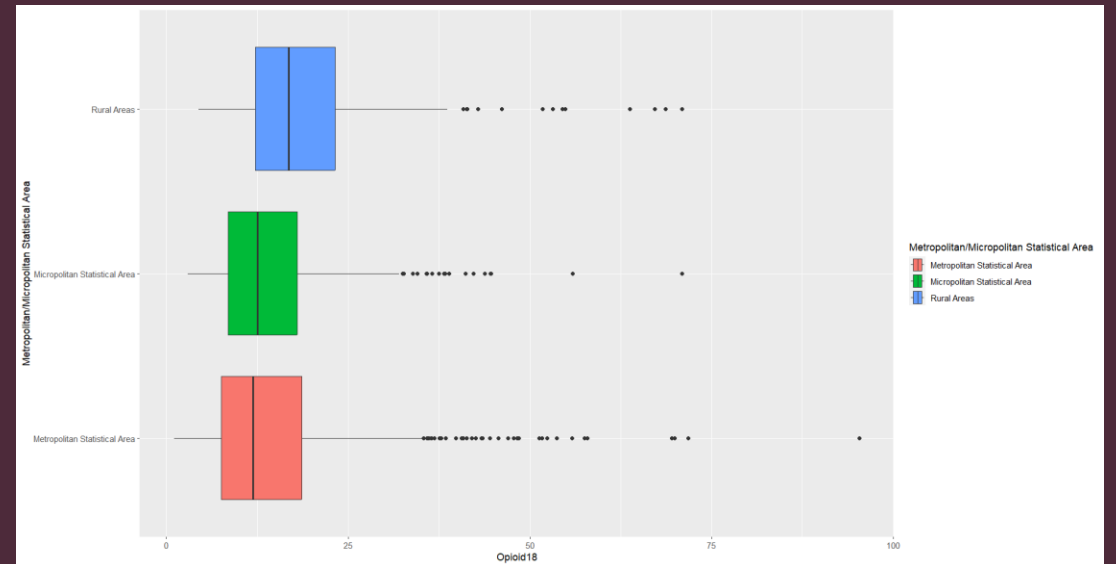
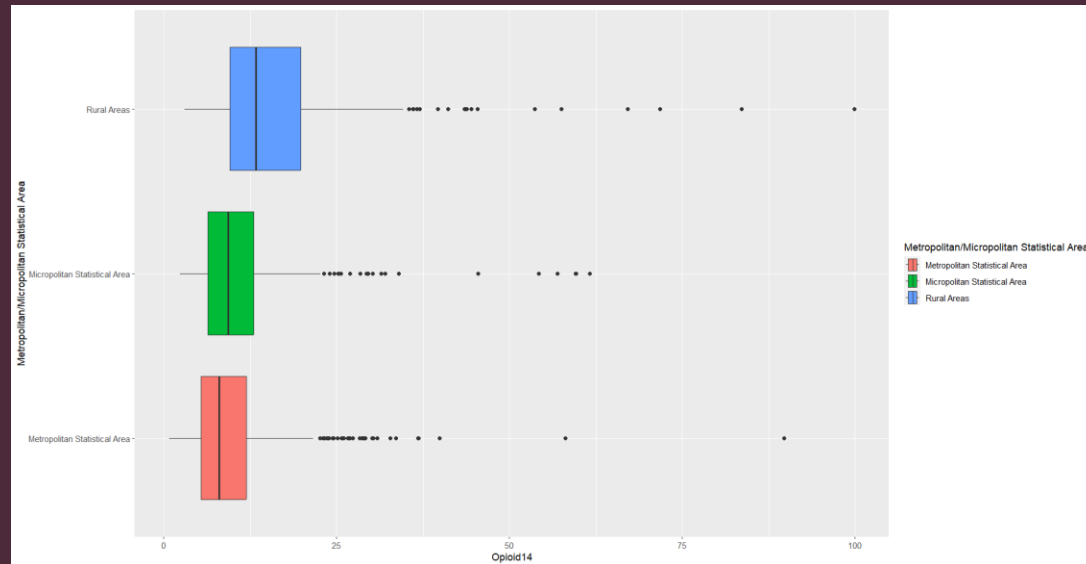
```
> summary.aov(modselfdrug18)
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
`Metropolitan/Micropolitan Statistical Area`	2	2688	1344.1	10.68	2.44e-05 ***
Residuals	1905	239753	125.9		

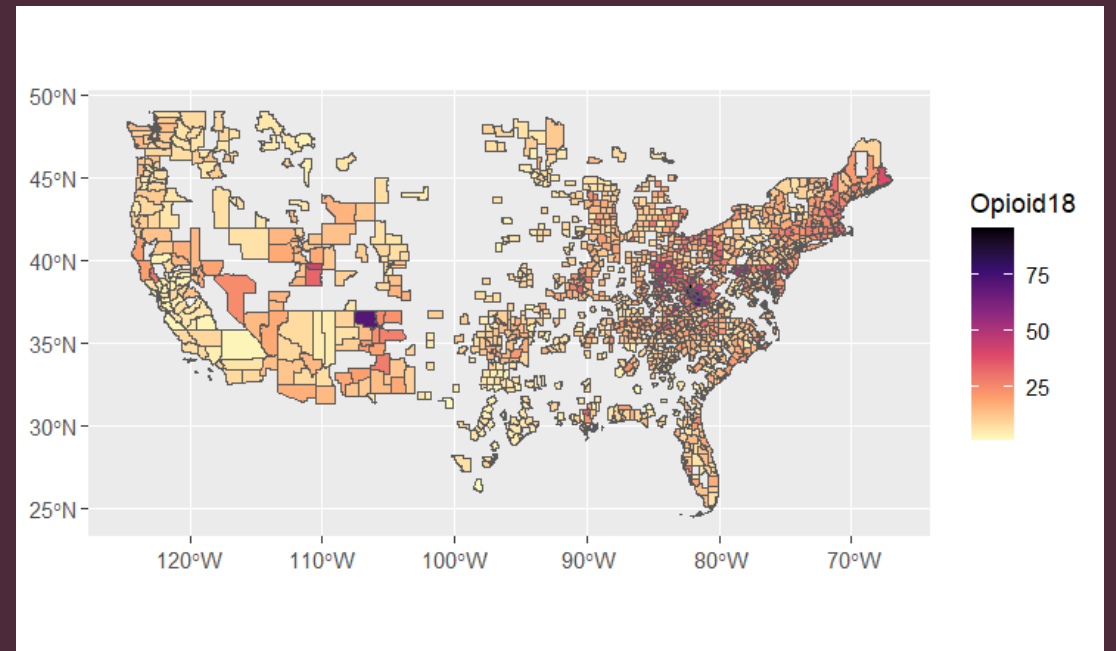
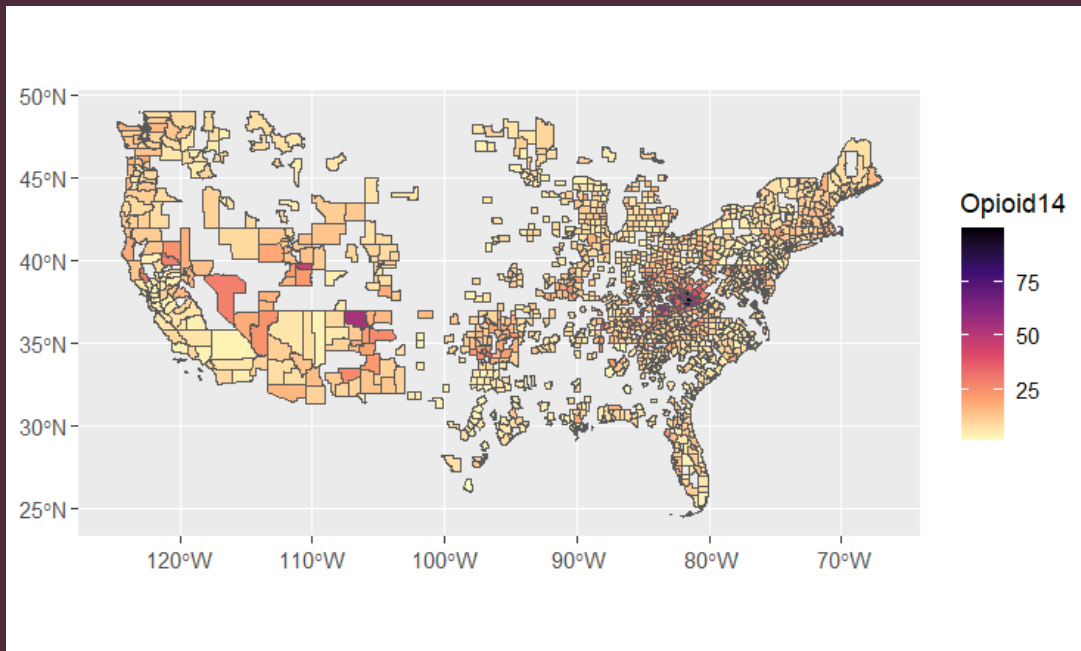
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```
>
```

Boxplot for Opioid Drug Death Rate for the years 2014 and 2018



Maps for Drug Opioid Death Rate for the years 2014 and 2018



Anova Test for Opioid Drug Death Rate for the Years 2014 and 2018

```
> summary.aov(modop14)
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
`Metropolitan/Micropolitan Statistical Area`	2	10024	5012	72.64	<2e-16 ***
Residuals	1377	95015	69		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

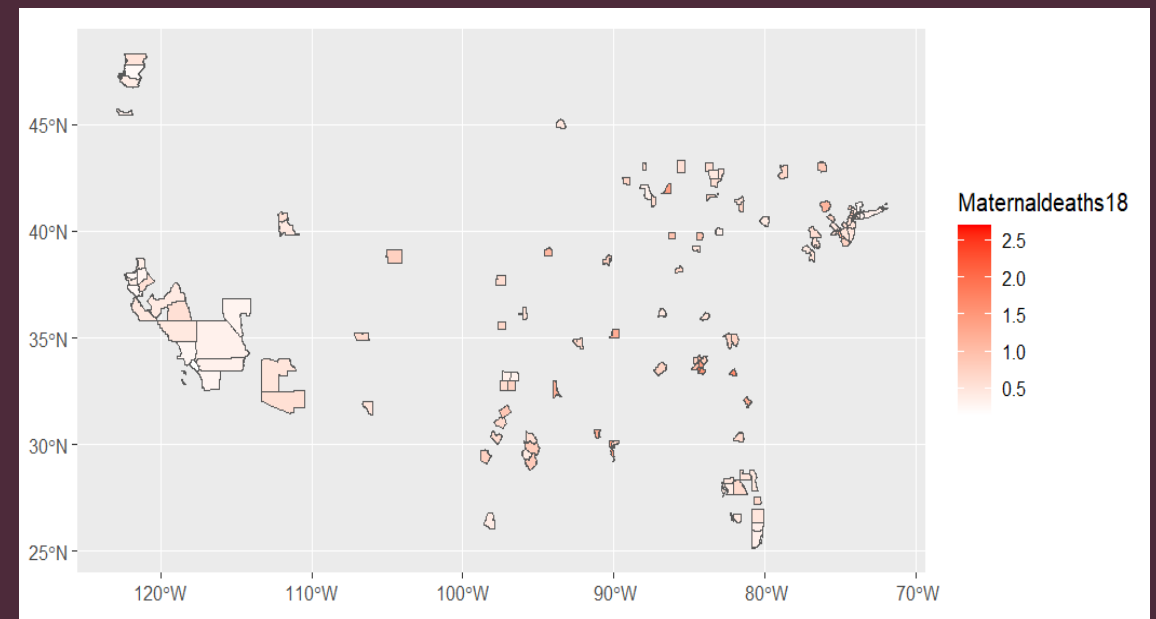
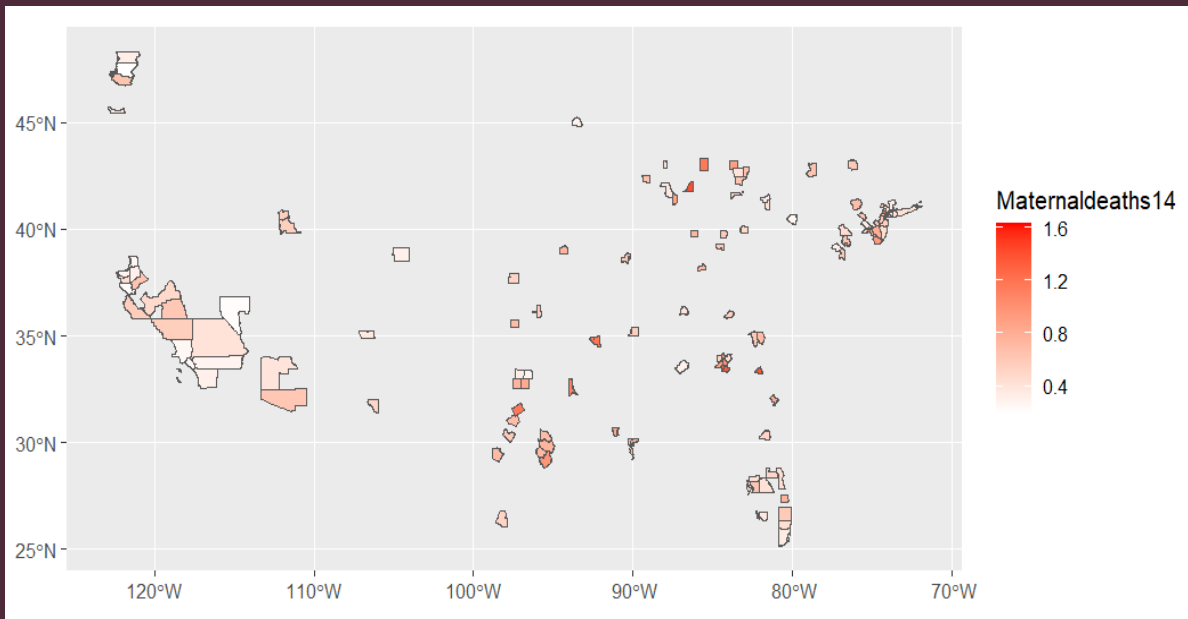
```
> summary.aov(modop18)
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
`Metropolitan/Micropolitan Statistical Area`	2	4358	2179	20.56	1.59e-09 ***
Residuals	1377	145969	106		

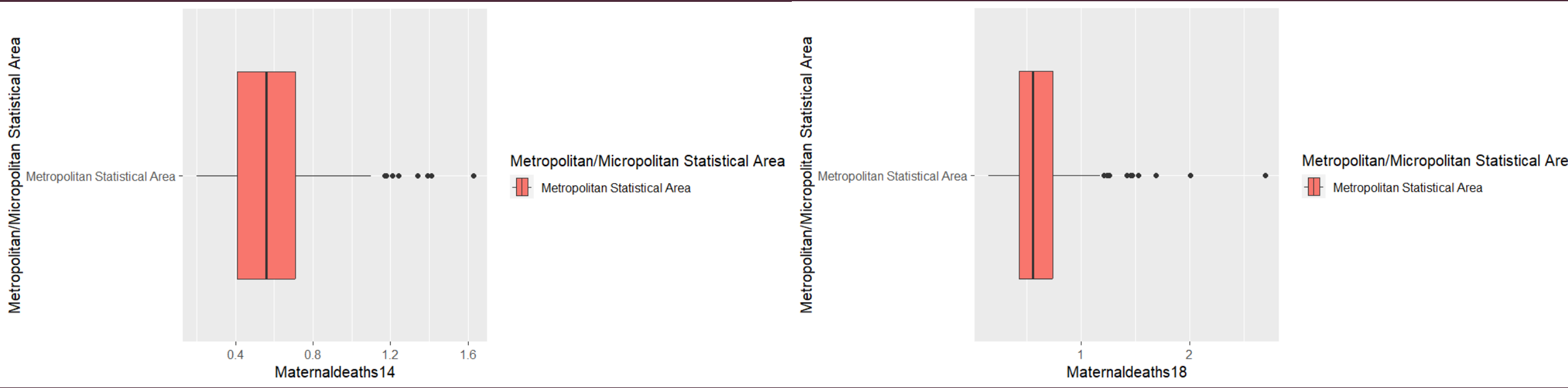
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```
>
```

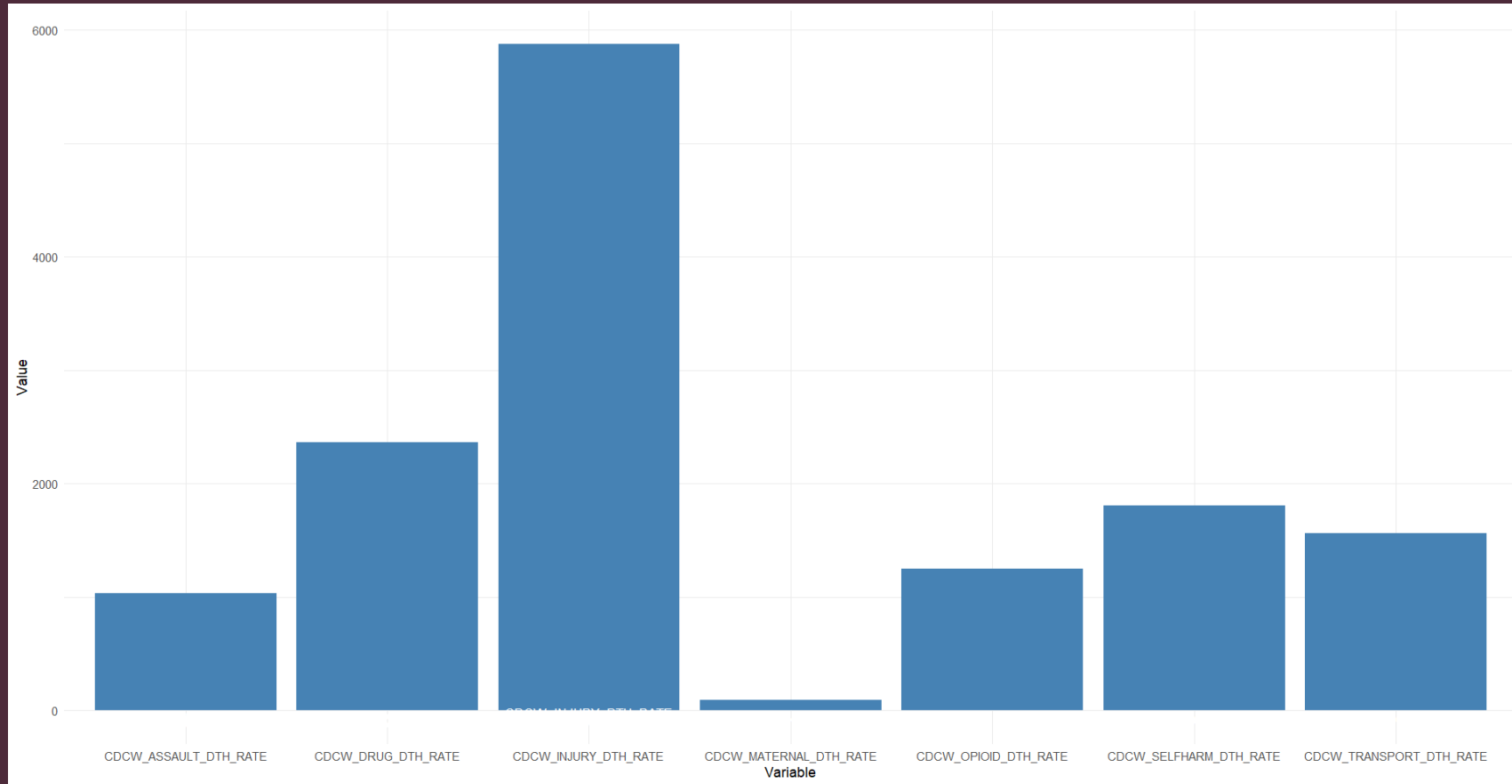
Maps for Maternal Death Rate for the years 2014 and 2018



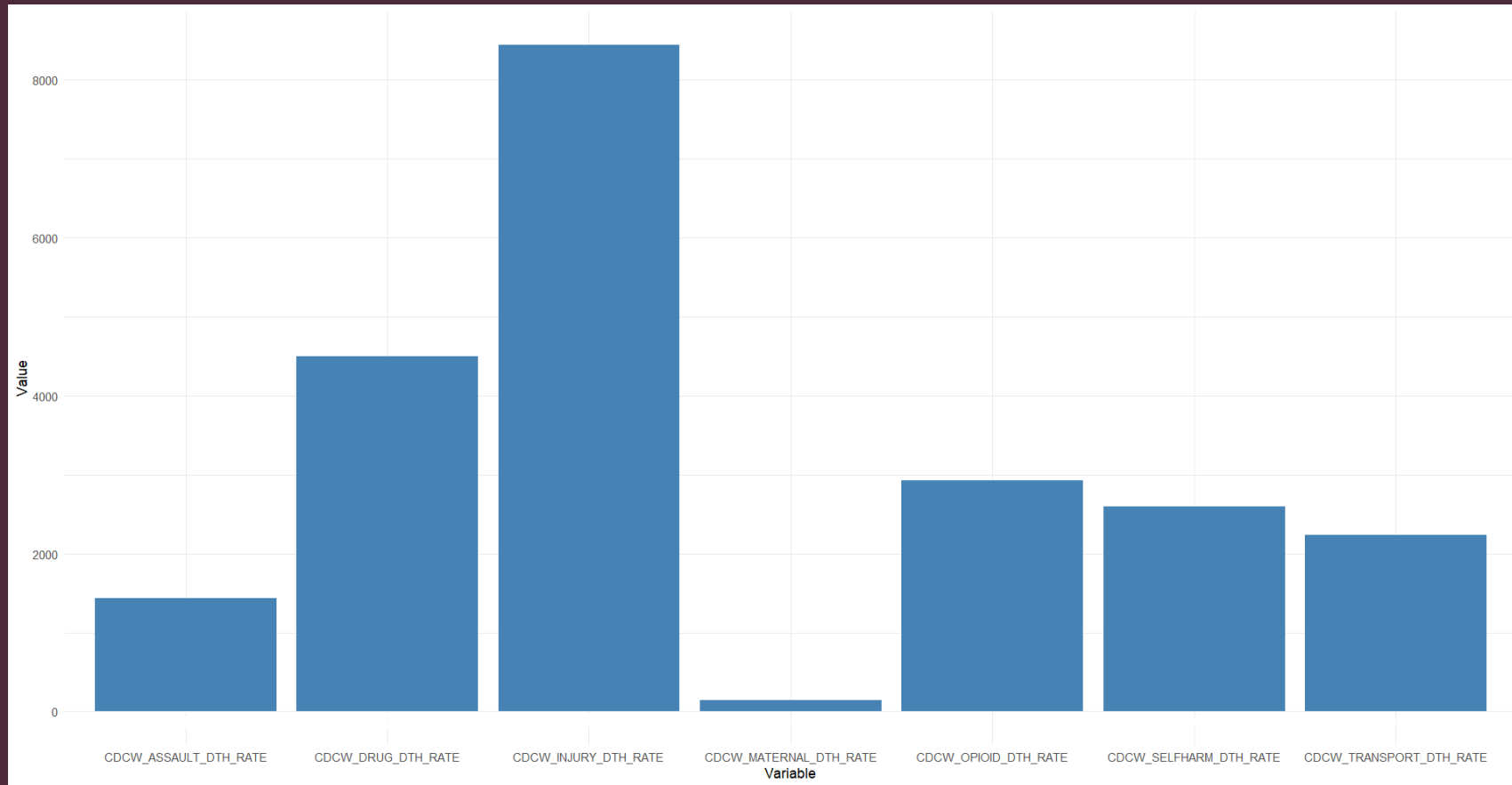
Boxplot for Maternal Death Rate for the years 2014 and 2018



Highest Death Indicators for the year 2014



Highest Death Indicators for the year 2018



Data Sources

- Social Determinants of Health Database (beta version). AHRQ. (n.d.). <https://www.ahrq.gov/sdoh/data-analytics/sdoh-data.html>
- Bureau, U. C. (2023, June 23). Glossary. Census.gov. <https://www.census.gov/programs-surveys/metro-micro/about/glossary.html>