Final Project

CP

2022-12-06

```
## Warning: package 'data.table' was built under R version 4.2.2
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.2 --
## v ggplot2 3.3.6     v purrr   0.3.4
## v tibble  3.1.8     v dplyr   1.0.9
## v tidyr   1.2.0     v stringr 1.4.1
## v readr   2.1.2     v forcats 0.5.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::between()   masks data.table::between()
## x dplyr::filter()    masks stats::filter()
## x dplyr::first()     masks data.table::first()
## x dplyr::lag()       masks stats::lag()
## x dplyr::last()      masks data.table::last()
## x purrr::transpose() masks data.table::transpose()
```

```
## [1] 189510
```

```
##
##              Alabama               Alaska              Arizona
##                  478                  959                 1080
##             Arkansas           California             Colorado
##                  502                 2748                 1182
##          Connecticut             Delaware District of Columbia
##                  595                  432                  508
##              Florida              Georgia               Hawaii
##                 1326                  789                  431
##                Idaho             Illinois              Indiana
##                  801                  989                  776
##                 Iowa               Kansas             Kentucky
##                  670                  712                  537
##            Louisiana                Maine             Maryland
##                  448                  337                  954
##        Massachusetts             Michigan            Minnesota
##                 1076                  837                  935
##          Mississippi             Missouri              Montana
##                  290                  631                  475
##             Nebraska               Nevada        New Hampshire
##                  607                  613                  571
##           New Jersey           New Mexico             New York
##                  667                  796                  803
##       North Carolina         North Dakota                 Ohio
##                  614                  388                  593
```

```
##             Oklahoma               Oregon         Pennsylvania
##                  549                 1094                  951
##         Rhode Island       South Carolina         South Dakota
##                  402                  525                  448
##            Tennessee                Texas                 Utah
##                  642                 1922                 1532
##              Vermont             Virginia           Washington
##                  422                 1017                 1592
##         West Virgina            Wisconsin              Wyoming
##                  385                  686                  461
##                <NA>
##                   0
```

```
##
##                   Both           No Insurance Private insurance only
##                   9613                   2641                  21890
##  Public insurance only                   <NA>
##                   5634                      0
```

```
##
##                              Both No Insurance Private insurance only
##   Services Not Recieved  1.799990     1.390216               6.317562
##   Services Recieved     22.366635     5.249133              48.712856
##
##                          Public insurance only
##   Services Not Recieved              1.988536
##   Services Recieved                 12.175072
```

```
##
##                           Both No Insurance Private insurance only
##   Services Not Recieved   716          553                   2513
##   Services Recieved      8897         2088                  19377
##
##                          Public insurance only
##   Services Not Recieved                   791
##   Services Recieved                      4843
```

Table 1

Mental Health Services Needed but Not Recived by Region

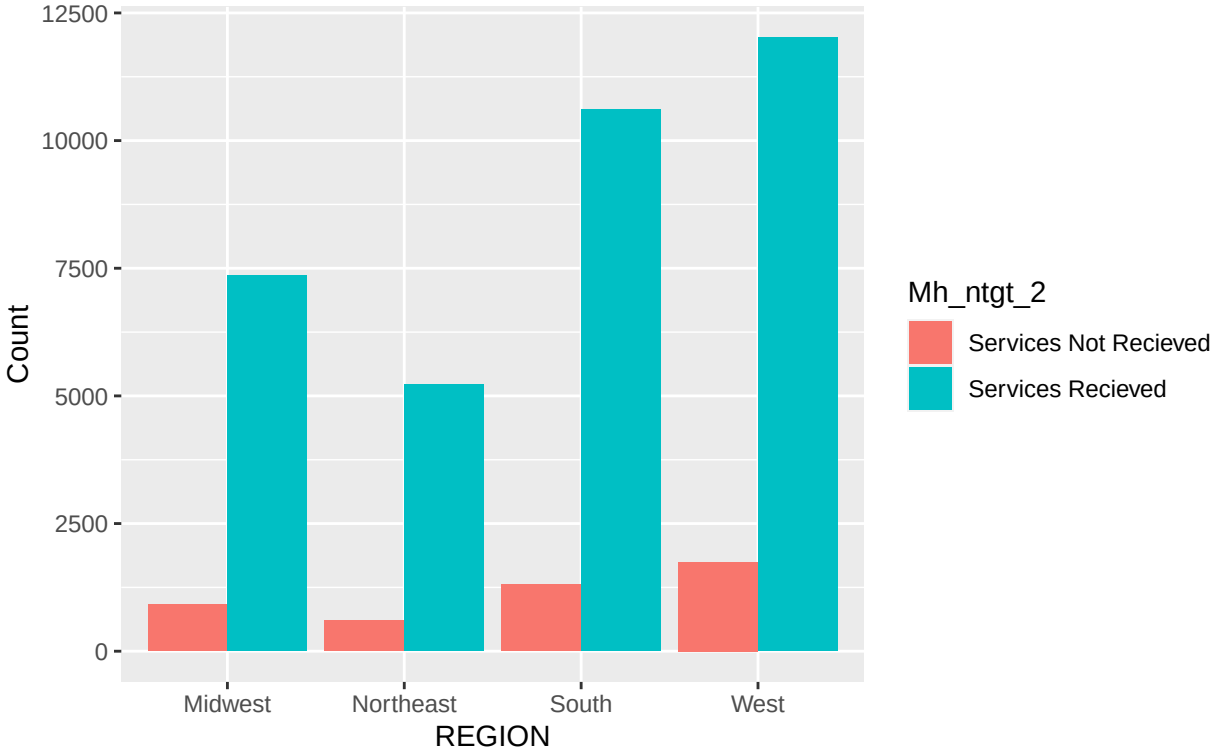

Table 2

Mental Health Services Needed but Not Recived by Insurance

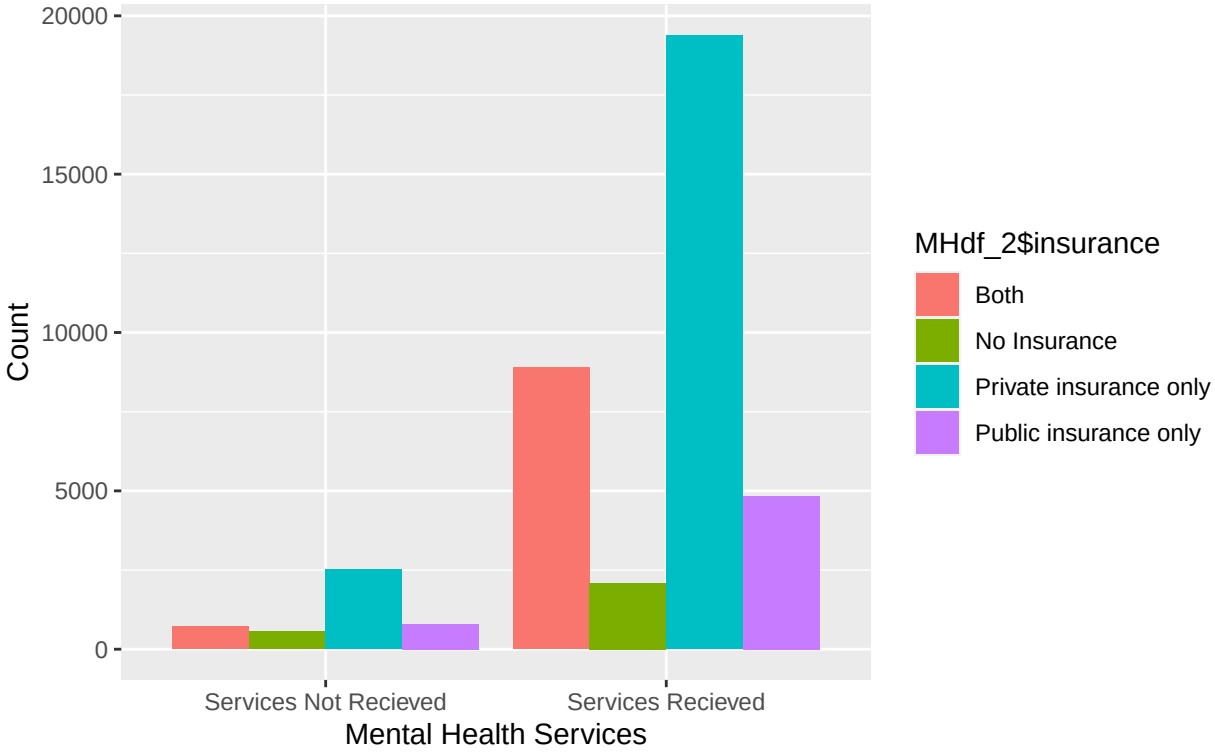

Table 3

Mental Health Services Needed but Not Recived by Region and Insurance

```
## Loading required package: plotly

## Warning: package 'plotly' was built under R version 4.2.2

##
## Attaching package: 'plotly'

## The following object is masked from 'package:ggplot2':
##
##     last_plot

## The following object is masked from 'package:stats':
##
##     filter

## The following object is masked from 'package:graphics':
##
##     layout

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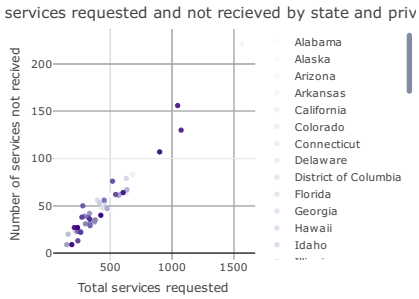


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## Warning in RColorBrewer::brewer.pal(n, pal): n too large, allowed maximum for palette Reds is 9
## Returning the palette you asked for with that many colors

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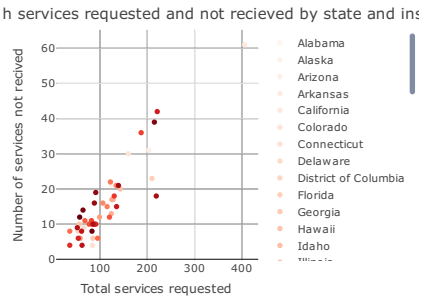


```
## Warning: 'bar' objects don't have these attributes: 'mode'
## Valid attributes include:
## '_deprecated', 'alignmentgroup', 'base', 'basesrc', 'cliponaxis', 'constraintext', 'customdata', 'cus

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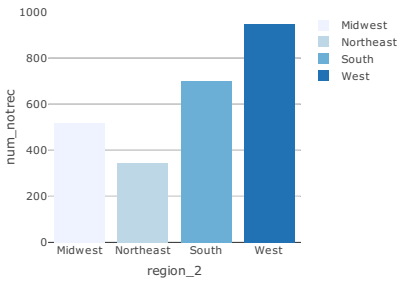
```




```
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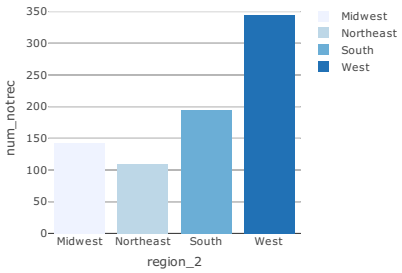
```




```
## Warning in RColorBrewer::brewer.pal(N, "Set2"): minimal value for n is 3, returning requested palette

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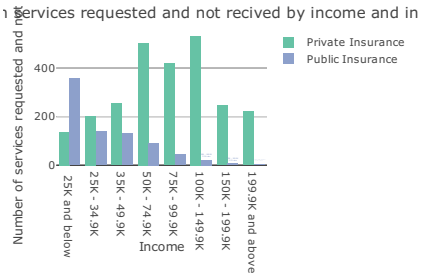
```




```
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## Warning: 'bar' objects don't have these attributes: 'mode'
## Valid attributes include:
```

```
## '_deprecated', 'alignmentgroup', 'base', 'basesrc', 'cliponaxis', 'constraintext', 'customdata', 'cus

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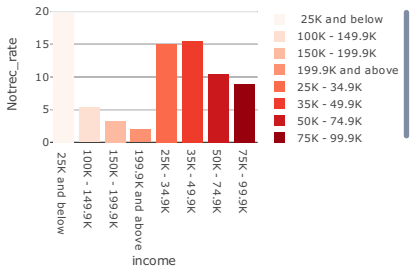
## Valid attributes include:
## '_deprecated', 'alignmentgroup', 'base', 'basesrc', 'cliponaxis', 'constraintext', 'customdata', 'cus
```

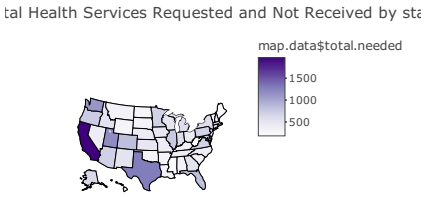



```
##                  state usa_state_latitude usa_state_longitude usa_state_code
##  1:              Kansas           39.01190           -98.48425             KS
##  2:             Florida           27.66483           -81.51575             FL
##  3:              Kansas           39.01190           -98.48425             KS
##  4:            Illinois           40.63312           -89.39853             IL
##  5:            Illinois           40.63312           -89.39853             IL
##  6:            Kentucky           37.83933           -84.27002             KY
##  7:             Arizona           34.04893          -111.09373             AZ
##  8:            Illinois           40.63312           -89.39853             IL
##  9:                Iowa           41.87800           -93.09770             IA
## 10:             Florida           27.66483           -81.51575             FL
## 11:         Connecticut           41.60322           -73.08775             CT
## 12:              Kansas           39.01190           -98.48425             KS
## 13:                Iowa           41.87800           -93.09770             IA
## 14:                Iowa           41.87800           -93.09770             IA
## 15:                Iowa           41.87800           -93.09770             IA
## 16:             Florida           27.66483           -81.51575             FL
## 17:              Hawaii           19.89868          -155.66586             HI
## 18:              Hawaii           19.89868          -155.66586             HI
```

```
## 19:              Georgia           32.15743           -82.90712             GA
## 20:             Illinois           40.63312           -89.39853             IL
## 21:             Illinois           40.63312           -89.39853             IL
## 22:              Florida           27.66483           -81.51575             FL
## 23:                 Iowa           41.87800           -93.09770             IA
## 24:             Kentucky           37.83933           -84.27002             KY
## 25:             Colorado           39.55005          -105.78207             CO
## 26:                Maine           45.25378           -69.44547             ME
## 27:              Georgia           32.15743           -82.90712             GA
## 28:              Georgia           32.15743           -82.90712             GA
## 29:              Georgia           32.15743           -82.90712             GA
## 30:              Indiana           40.55122           -85.60236             IN
## 31:               Hawaii           19.89868          -155.66586             HI
## 32:                 Iowa           41.87800           -93.09770             IA
## 33:            Louisiana           31.24482           -92.14502             LA
## 34:              Florida           27.66483           -81.51575             FL
## 35:                 Iowa           41.87800           -93.09770             IA
## 36:              Florida           27.66483           -81.51575             FL
## 37:              Georgia           32.15743           -82.90712             GA
## 38:            Louisiana           31.24482           -92.14502             LA
## 39:              Georgia           32.15743           -82.90712             GA
## 40:                 Iowa           41.87800           -93.09770             IA
## 41:             Colorado           39.55005          -105.78207             CO
## 42:               Kansas           39.01190           -98.48425             KS
## 43:              Georgia           32.15743           -82.90712             GA
## 44: District of Columbia           38.90599           -77.03342             DC
## 45:             Illinois           40.63312           -89.39853             IL
## 46:        Massachusetts           42.40721           -71.38244             MA
## 47:             Kentucky           37.83933           -84.27002             KY
## 48:             Kentucky           37.83933           -84.27002             KY
## 49:             Delaware           38.91083           -75.52767             DE
## 50:             Maryland           39.04575           -76.64127             MD
##                    state usa_state_latitude usa_state_longitude usa_state_code
##     Total_sv_needed num_notrec services_rec Notrec_rate  per.rate
##  1:              81         10           71  0.12345679 12.345679
##  2:             210         23          187  0.10952381 10.952381
##  3:              81         10           71  0.12345679 12.345679
##  4:             128         17          111  0.13281250 13.281250
##  5:             128         17          111  0.13281250 13.281250
##  6:              99         12           87  0.12121212 12.121212
##  7:             203         31          172  0.15270936 15.270936
##  8:             128         17          111  0.13281250 13.281250
##  9:             125         17          108  0.13600000 13.600000
## 10:             210         23          187  0.10952381 10.952381
## 11:              84          4           80  0.04761905  4.761905
## 12:              81         10           71  0.12345679 12.345679
## 13:             125         17          108  0.13600000 13.600000
## 14:             125         17          108  0.13600000 13.600000
## 15:             125         17          108  0.13600000 13.600000
## 16:             210         23          187  0.10952381 10.952381
## 17:              56         10           46  0.17857143 17.857143
## 18:              56         10           46  0.17857143 17.857143
## 19:              85          6           79  0.07058824  7.058824
## 20:             128         17          111  0.13281250 13.281250
```

```
## 21:              128          17          111  0.13281250 13.281250
## 22:              210          23          187  0.10952381 10.952381
## 23:              125          17          108  0.13600000 13.600000
## 24:               99          12           87  0.12121212 12.121212
## 25:              160          30          130  0.18750000 18.750000
## 26:               58           6           52  0.10344828 10.344828
## 27:               85           6           79  0.07058824  7.058824
## 28:               85           6           79  0.07058824  7.058824
## 29:               85           6           79  0.07058824  7.058824
## 30:              124          13          111  0.10483871 10.483871
## 31:               56          10           46  0.17857143 17.857143
## 32:              125          17          108  0.13600000 13.600000
## 33:               85          10           75  0.11764706 11.764706
## 34:              210          23          187  0.10952381 10.952381
## 35:              125          17          108  0.13600000 13.600000
## 36:              210          23          187  0.10952381 10.952381
## 37:               85           6           79  0.07058824  7.058824
## 38:               85          10           75  0.11764706 11.764706
## 39:               85           6           79  0.07058824  7.058824
## 40:              125          17          108  0.13600000 13.600000
## 41:              160          30          130  0.18750000 18.750000
## 42:               81          10           71  0.12345679 12.345679
## 43:               85           6           79  0.07058824  7.058824
## 44:               53           8           45  0.15094340 15.094340
## 45:              128          17          111  0.13281250 13.281250
## 46:              134          21          113  0.15671642 15.671642
## 47:               99          12           87  0.12121212 12.121212
## 48:               99          12           87  0.12121212 12.121212
## 49:               66           9           57  0.13636364 13.636364
## 50:              106          16           90  0.15094340 15.094340
##     Total_sv_needed num_notrec services_rec Notrec_rate  per.rate
```

```
g <- list(
     scope = 'usa',
     projection = list(type = 'albers usa'),
     showlakes = TRUE,
     lakecolor = toRGB('white')
)
```




```
## Warning: package 'gtsummary' was built under R version 4.2.2
```

```
MHdf_2 %>% select( Region = region_2, Income = income, Insurance_Type =  insurance) %>% tbl_summary()
```

```
## Table printed with `knitr::kable()`, not {gt}. Learn why at
## https://www.danieldsjoberg.com/gtsummary/articles/rmarkdown.html
## To suppress this message, include `message = FALSE` in code chunk header.
```

Characteristic	**N = 39,778**
Region	
Midwest	8,272 (21%)
Northeast	5,824 (15%)
South	11,918 (30%)
West	13,764 (35%)
Income	
25K and below	3,947 (9.9%)
100K - 149.9K	7,456 (19%)
150K - 199.9K	3,603 (9.1%)
199.9K and above	4,187 (11%)
25K - 34.9K	3,337 (8.4%)
35K - 49.9K	4,339 (11%)
50K - 74.9K	6,979 (18%)
75K - 99.9K	5,930 (15%)

Characteristic	**N = 39,778**
Insurance_Type	
Both	9,613 (24%)
No Insurance	2,641 (6.6%)
Private insurance only	21,890 (55%)
Public insurance only	5,634 (14%)