

```

1 ---
2 title: "state-change"
3 output: html_document
4 ---
5
6 ## Load libs
7 ```{r, echo=FALSE, warning=FALSE}
8 library(mapproj)
9 library(choroplethrMaps)
10 library(ggplot2)
11 library(dplyr)
12 library(choroplethr)
13 library(stringr)
14 library(tidyr)
15 library(purrr)
16 library(readr)
17 ```
18
19 ## Load data
20 ```{r}
21 source('H:/2014-working-files/parse-widows/combine.r')
22 ```
23
24 ## Clean data
25 ```{r}
26 # helper functions
27 clean <- function(x) { as.numeric(gsub(".*|\\(|\\|)", "", as.character(x))) }
28 makeDate <- function(x) { as.Date(as.character(x), format = "%Y%m%d") }
29
30 ### drop descriptions on state/county codes
31 admits$state_fips <- clean(admits$STATE_CODE)
32 admits$county_fips <- clean(admits$PRISON_COUNTY)
33 admits <- admits %>% mutate(stateFIPS = floor(county_fips/1000))
34
35
36 ### sub_dates
37 admits$addate <- makeDate(admits$PRISON_ADMISSION_DATE)
38 admits$adyear <- format(admits$addate, "%Y")
39
40 # groups offenses codes as drugs (or not)
41 admits$BJS_OFFENSE_1 <- clean(admits$BJS_OFFENSE_1)
42 admits$BJS_OFFENSE_2 <- clean(admits$BJS_OFFENSE_2)
43 admits$BJS_OFFENSE_3 <- clean(admits$BJS_OFFENSE_3)
44
45 admits <- admits %>% mutate(type1 = 340 <= BJS_OFFENSE_1 & BJS_OFFENSE_1 <= 450)
46 admits <- admits %>% mutate(type2 = 340 <= BJS_OFFENSE_2 & BJS_OFFENSE_2 <= 450)
47 admits <- admits %>% mutate(type3 = 340 <= BJS_OFFENSE_3 & BJS_OFFENSE_3 <= 450)
48
49 admits <- admits %>% mutate(drugs = type1 | type2 | type3)
50 admits <- admits %>% mutate(drugs = drugs & !is.na(drugs))
51 ```
52
53 ## add in state exceptions
54
55 ## NC and SC include people with six month sentences
56 ```{r}

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57 admits <- admits %>%
58   filter(stateFIPS != 37 | OFFENSE_1_SENTENCE > 11) %>%
59   filter(stateFIPS != 45 | OFFENSE_1_SENTENCE > 11)
60   ```
61
62 # Load correct population numbers for 06, 13 and 14
63 ```{r}
64 pop2010 = read_csv('H:/5-24-2016/pop2010.csv') %>%
65   filter(AGEGRP == 0) %>%
66   filter(YEAR == 6 | YEAR == 7) %>%
67   transmute(region = paste(STATE, COUNTY, sep=''), population = TOT_POP, year =
68     paste('population', YEAR + 2007, sep='')) %>%
69   spread(year, population)
70
71 pop2000 = read_csv('H:/5-24-2016/pop2000.csv') %>%
72   filter(SEX == 0 & ORIGIN == 0 & RACE == 0) %>%
73   transmute(region = paste(STATE, COUNTY, sep=''), population2006 = POPESTIMATE2006)
74
75 pop = full_join(pop2000, pop2010, by='region') %>% mutate(region = as.double(region))
76   ```
77
78 # Look at change since 2006
79 ```{r}
80 admit2014 <- subset(admits, adyear == '2014')
81 admit2013 <- subset(admits, adyear == '2013')
82 admit2006 <- subset(admits, adyear == '2006')
83
84 data(df_county_demographics)
85 df_county_demographics <- df_county_demographics %>%
86   full_join(pop, by='region') %>%
87   mutate(region = ifelse(region == 12086, 12025, region)) ## FIPS updated in 90s; not
88   changed in NCRP data
89
90 countPerCounty2014 <- admit2014 %>% group_by(county_fips) %>%
91   summarise(admissions2014 = length(drugs), percentDrugs2014 = mean(drugs), state2014 =
92   first(STATE_CODE), state_fips2014 = first(state_fips)) %>%
93   rename(region = county_fips)
94
95 counties <- left_join(df_county_demographics, countPerCounty2014, by='region')
96 counties$perCapitaAdmissions2014 <- counties$admissions2014/counties$population2014
97 counties$perCapitaDrugs2014 <- counties$percentDrugs*counties$perCapitaAdmissions
98
99 #2013
100 countPerCounty2013 <- admit2013 %>% group_by(county_fips) %>%
101   summarise(admissions2013 = length(drugs), percentDrugs2013 = mean(drugs), state2013 =
102   first(STATE_CODE), state_fips2013 = first(state_fips)) %>%
103   rename(region = county_fips)
104
105 counties <- left_join(counties, countPerCounty2013, by='region')
106 counties$perCapitaAdmissions2013 <- counties$admissions2013/counties$population2013
107 counties$perCapitaDrugs2013 <- counties$percentDrugs2013*counties$perCapitaAdmissions2013
108
109 #2006
110 countPerCounty2006 <- admit2006 %>% group_by(county_fips) %>%
111   summarise(admissions2006 = length(drugs), percentDrugs2006 = mean(drugs), state2006 =
112   first(STATE_CODE), state_fips2006 = first(state_fips)) %>%

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109   rename(region = county_fips)
110
111   counties <- left_join(counties, countPerCounty2006, by='region')
112   counties$perCapitaAdmissions2006 <- counties$admissions2006/counties$population2006
113   counties$perCapitaDrugs2006 <- counties$percentDrugs2006*counties$perCapitaAdmissions2006
114
115   counties = counties %>% mutate(stateFIPS = floor(region/1000))
116   ```
117
118   ## Overwrite ohio2006
119   ```{r}
120   ohio2006Counties = read_csv('H:/5-24-2016/ohio2006.csv') %>% transmute(region = region,
121   ohioAdmissions06 = ohioAdmissions06)
122
123   counties = counties %>%
124     #select(-ohioAdmissions06) %>%
125     left_join(ohio2006Counties, by='region') %>%
126     mutate(admissions2006 = ifelse(stateFIPS == 39, ohioAdmissions06, admissions2006),
127            perCapitaDrugs2006 = ifelse(stateFIPS == 39, NA, perCapitaDrugs2006),
128            perCapitaAdmissions2006 = admissions2006/total_population)
129   ```
130
131   ## Create data for export
132   ```{r}
133   exportCounties <- counties %>%
134     mutate(admissions2006 = ifelse(admissions2006 >= 5, admissions2006, NA),
135            admissions2013 = ifelse(admissions2013 >= 5, admissions2013, NA),
136            admissions2014 = ifelse(admissions2014 >= 5, admissions2014, NA),
137            perCapitaAdmissions2006 = ifelse(admissions2006 >= 5, perCapitaAdmissions2006,
138            NA),
139            perCapitaAdmissions2013 = ifelse(admissions2013 >= 5, perCapitaAdmissions2013,
140            NA),
141            perCapitaAdmissions2014 = ifelse(admissions2014 >= 5, perCapitaAdmissions2014,
142            NA),
143            percentDrugs2006 = ifelse(percentDrugs2006*admissions2006 >= 5,
144            percentDrugs2006, NA),
145            percentDrugs2013 = ifelse(percentDrugs2013*admissions2013 >= 5,
146            percentDrugs2013, NA),
147            percentDrugs2014 = ifelse(percentDrugs2014*admissions2014 >= 5,
148            percentDrugs2014, NA),
149            perCapitaDrugs2006 = ifelse(percentDrugs2006*admissions2006 >= 5,
150            perCapitaDrugs2006, NA),
151            perCapitaDrugs2013 = ifelse(percentDrugs2013*admissions2013 >= 5,
152            perCapitaDrugs2013, NA),
153            perCapitaDrugs2014 = ifelse(percentDrugs2014*admissions2014 >= 5,
154            perCapitaDrugs2014, NA))
155
156   write_csv(exportCounties, 'H:/export_5-24-2016/export-counties.csv')
157   ```
158
159   ## Join counties with last of valid states/years
160   ```{r}

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156 validStates = read_csv('H:/2014-working-files/state-change/valid-state.csv')
157 counties = counties %>%
158   #select(-validState2006) %>% select(-validState2013) %>% select(-validState2014) %>%
159   left_join(validStates, by='stateFIPS')
160 ```
161
162 ## Slope chart data
163 ```{r}
164 validCounties = filter(counties, validState2006 & validState2013)
165
166 tempFct = transform(validCounties,
167   fctpop=cut(total_population, c(0, 100000, 300000, 1000000)),
168   fctadmit=cut(perCapitaAdmissions2014, c(0, .00125, .0025, .1)),
169   state = ifelse(stateFIPS == 36 | stateFIPS == 48 | stateFIPS == 6,
170     state2014, 'other'),
171   fctdrug=cut(perCapitaDrugs2014, c(0, .0005, .0015, .1))) %>%
172   filter(!is.na(total_population))
173 ```
```