PQI Data Exploration

Data Import

```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------------------- tidyverse 1.3.0 --

## v ggplot2 3.3.2     v purrr   0.3.4
## v tibble  3.0.3     v dplyr   1.0.2
## v tidyr   1.1.2     v stringr 1.4.0
## v readr   1.3.1     v forcats 0.5.0

## -- Conflicts ------------------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(readxl)
library(stringr)

quality <- read_csv('data/2018_Adult_Health_Care_Quality_Measures_expansion_status.csv')
```

```
## Parsed with column specification:
## cols(
##   state = col_character(),
##   domain = col_character(),
##   reporting_program = col_character(),
##   measure_name = col_character(),
##   measure_abbreviation = col_character(),
##   rate_definition = col_character(),
##   ffy = col_double(),
##   population = col_character(),
##   methodology = col_character(),
##   state_rate = col_character(),
##   number_of_states_reporting = col_double(),
##   median = col_double(),
##   bottom_quartile = col_double(),
##   top_quartile = col_double(),
##   notes = col_character(),
##   state_specific_comments = col_character(),
##   source = col_character(),
##   rate_used_in_calculating_state_mean_and_median = col_character(),
##   expansion_status = col_double()
## )
```

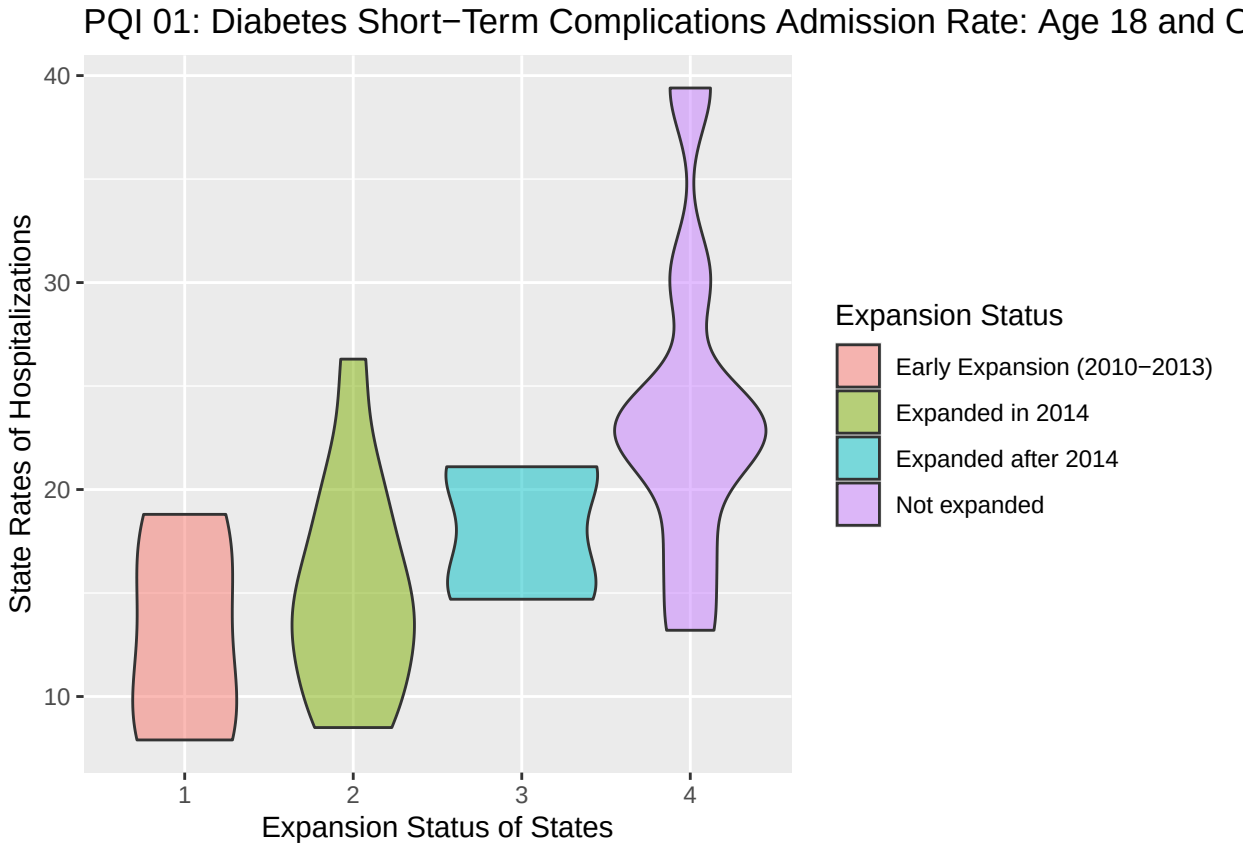
```
quality <- quality %>% mutate(state_rate = as.numeric(state_rate),
                              expansion_status = as.factor(expansion_status))
```

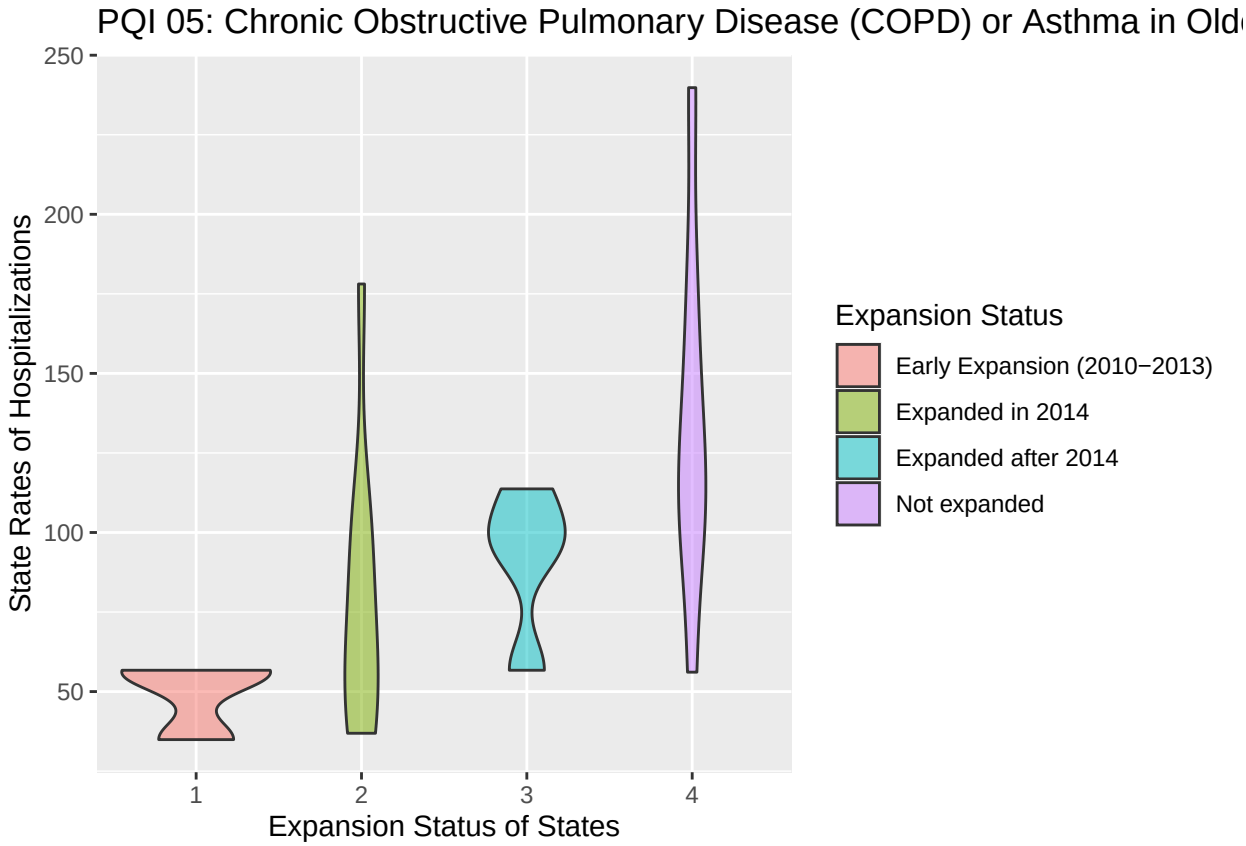
```
## Warning: Problem with `mutate()` input `state_rate`.
## i NAs introduced by coercion
## i Input `state_rate` is `as.numeric(state_rate)`.
```

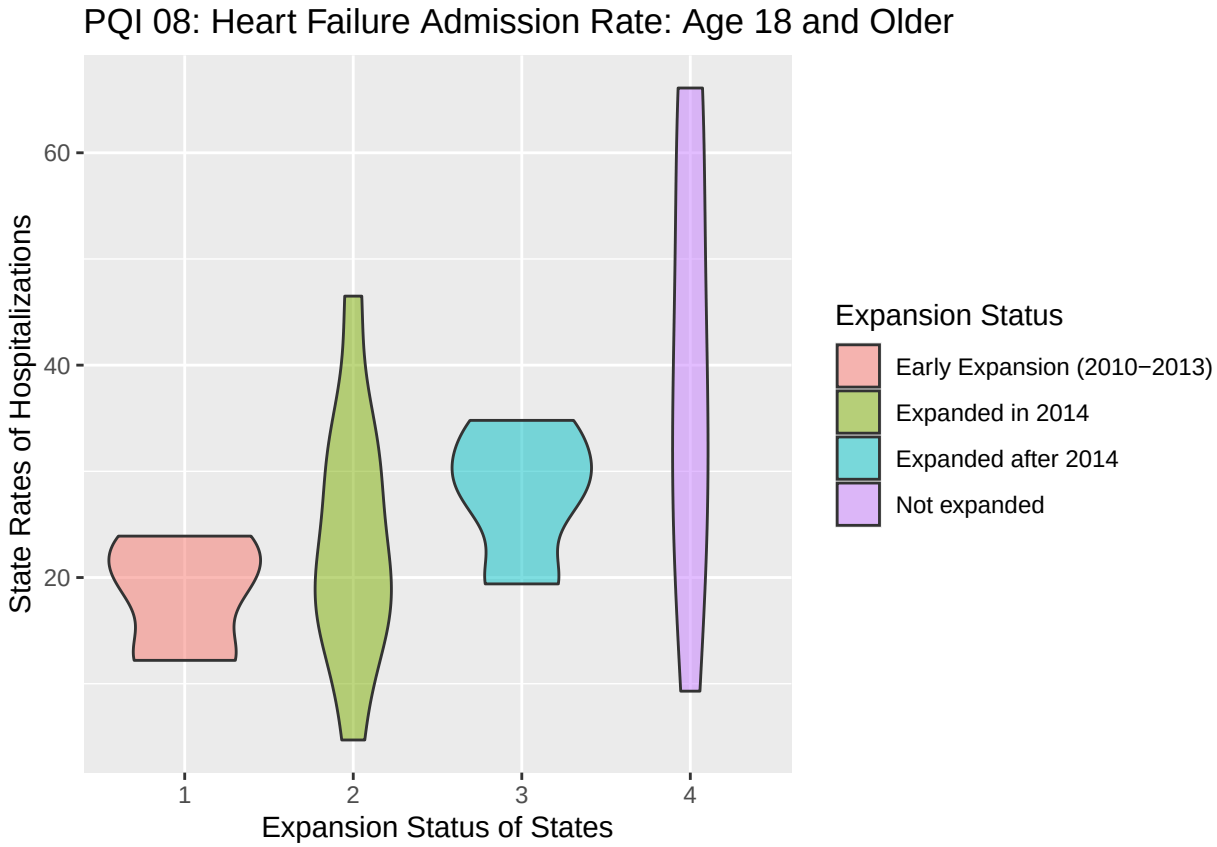
```
## Warning in mask$eval_all_mutate(dots[[i]]): NAs introduced by coercion
```

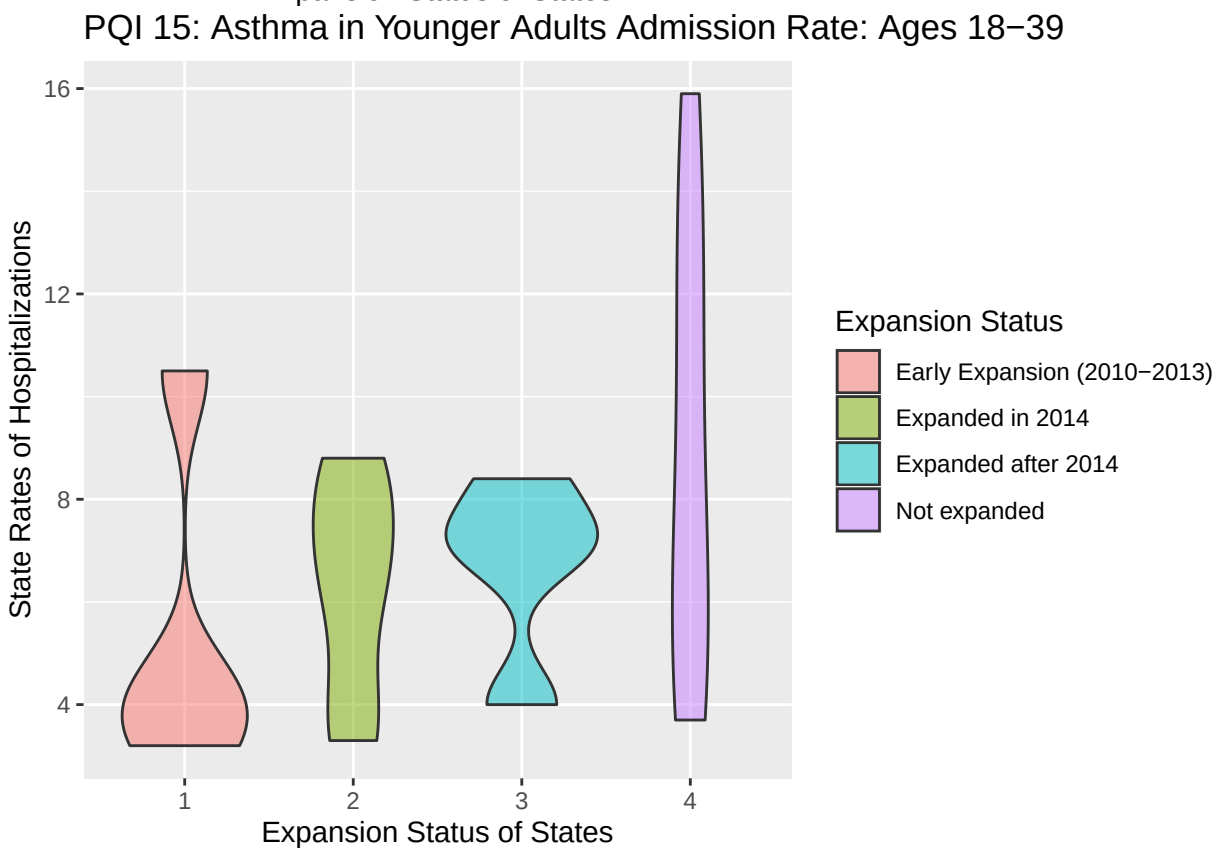
PQIs 2018 by Expansion Status

```
dat <- quality %>% select(c('expansion_status', 'state', 'measure_name', 'state_rate')) %>%
                   filter(str_detect(measure_name, 'PQI.*'))

pqis = unique(dat$measure_name)


for (pqi in pqis){

  p <- dat %>% filter(measure_name == pqi) %>%
            ggplot() +
            geom_violin(aes(x=expansion_status, y=state_rate,
                            fill = expansion_status), alpha = 0.5) +
            ggtitle(pqi) +
            xlab('Expansion Status of States') +
            ylab('State Rates of Hospitalizations') +
            scale_fill_discrete(name = 'Expansion Status',
                                labels = c('Early Expansion (2010-2013)',
                                           'Expanded in 2014',
                                           'Expanded after 2014',
                                           'Not expanded'))

  print(p)


}
```


PQI 01: Diabetes Short−Term Complications Admission Rate: Age 18 and C
State Rates of Hospitalizations
40
30
20
10
1
2
3
4
Expansion Status of States
Expansion Status
Early Expansion (2010−2013)
Expanded in 2014
Expanded after 2014
Not expanded


PQI 05: Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Old
State Rates of Hospitalizations
250
200
150
100
50
1
2
3
4
Expansion Status of States
Expansion Status
Early Expansion (2010−2013)
Expanded in 2014
Expanded after 2014
Not expanded


PQI 08: Heart Failure Admission Rate: Age 18 and Older
State Rates of Hospitalizations
60
40
20
1
2
3
4
Expansion Status of States
Expansion Status
Early Expansion (2010−2013)
Expanded in 2014
Expanded after 2014
Not expanded


PQI 15: Asthma in Younger Adults Admission Rate: Ages 18−39
State Rates of Hospitalizations
16
12
8
4
1
2
3
4
Expansion Status of States
Expansion Status
Early Expansion (2010−2013)
Expanded in 2014
Expanded after 2014
Not expanded