Covid19_data_Statistics_visualization.R

corn

2022-01-21

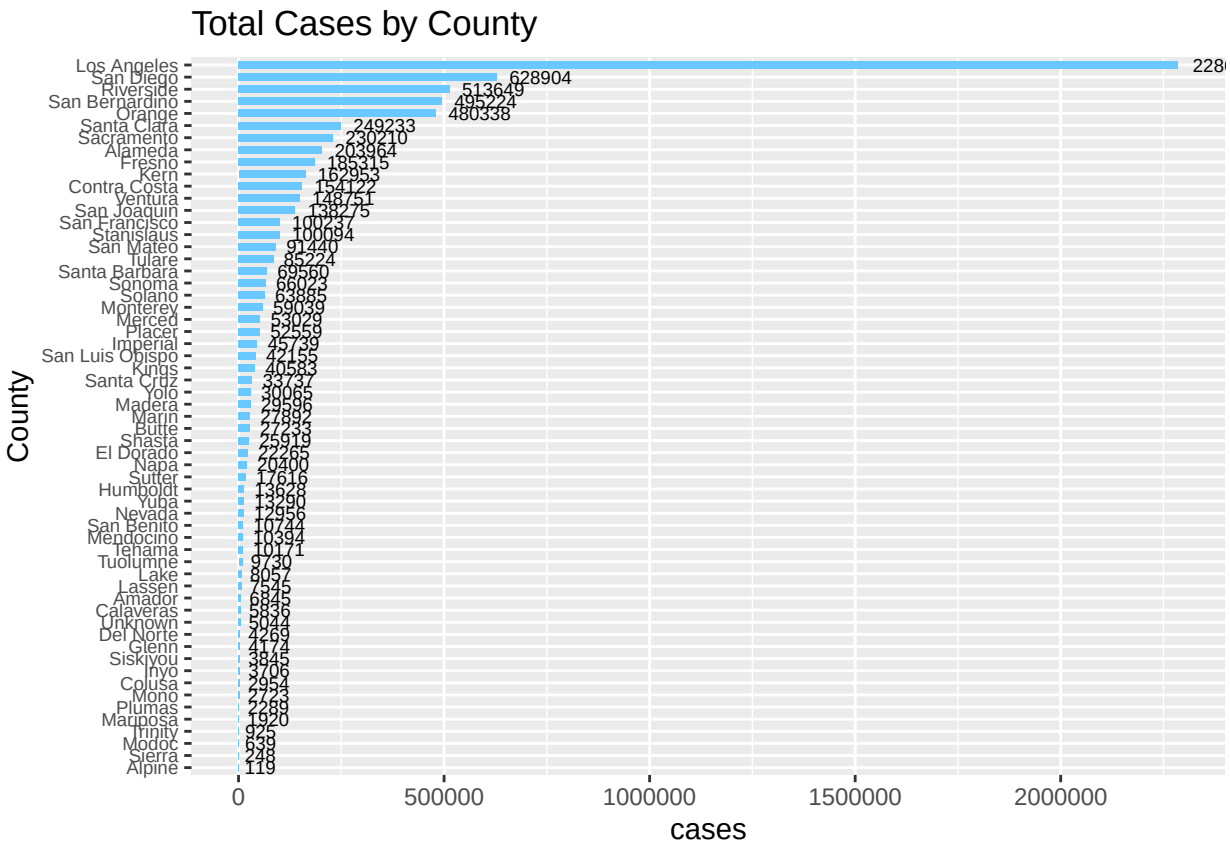
```
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

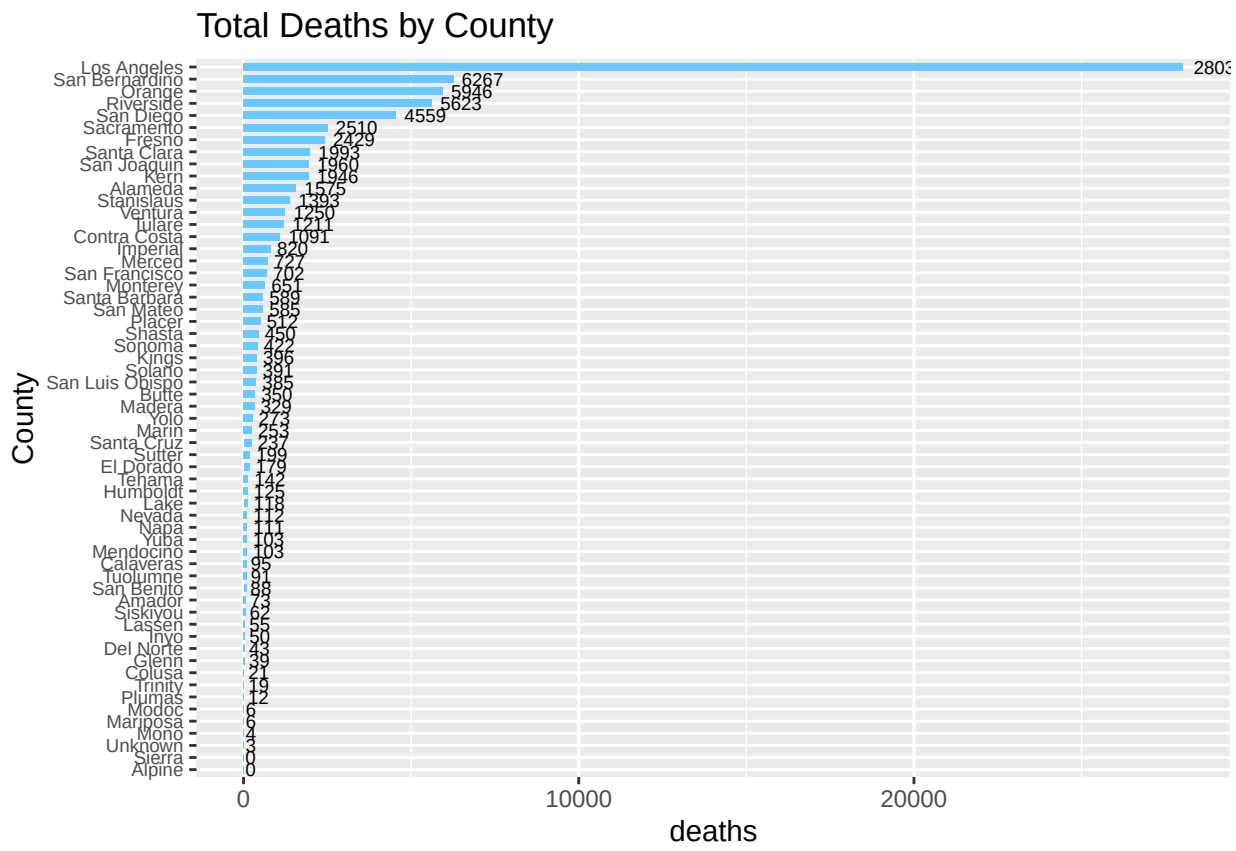
```
library(ggplot2)

setwd("C:/Users/dongj/Desktop/Covid_Cal/Statewide_case_statistics_and_demographics")

data <- read.csv("./dataset/covid19cases_test_012122.csv")
data_v1 <- read.csv("./dataset/covid19cases_test_012122.csv")

data_v1 <- data_v1[data_v1$area_type == 'County',]

data_v1 <- filter(data_v1,
                  !area %in% c('Out of state'))

unique(data_v1$area)
```

```
##  [1] "Alameda"         "Alpine"          "Amador"          "Butte"
##  [5] "Calaveras"       "Colusa"          "Contra Costa"    "Del Norte"
##  [9] "El Dorado"       "Fresno"          "Glenn"           "Humboldt"
## [13] "Imperial"        "Inyo"            "Kern"            "Kings"
## [17] "Lake"            "Lassen"          "Los Angeles"     "Madera"
## [21] "Marin"           "Mariposa"        "Mendocino"       "Merced"
## [25] "Modoc"           "Mono"            "Monterey"        "Napa"
## [29] "Nevada"          "Orange"          "Placer"          "Plumas"
## [33] "Riverside"       "Sacramento"      "San Benito"      "San Bernardino"
## [37] "San Diego"       "San Francisco"   "San Joaquin"     "San Luis Obispo"
## [41] "San Mateo"       "Santa Barbara"   "Santa Clara"     "Santa Cruz"
## [45] "Shasta"          "Sierra"          "Siskiyou"        "Solano"
## [49] "Sonoma"          "Stanislaus"      "Sutter"          "Tehama"
## [53] "Trinity"         "Tulare"          "Tuolumne"        "Unknown"
## [57] "Ventura"         "Yolo"            "Yuba"
```

```r
#Total Cases Group by Area-------------------------------------------------
total_cases_by_area <- aggregate(cases ~ area,
                                 data_v1,
                                 sum)
total_cases_by_area_graph <- ggplot(data=total_cases_by_area,
                                    aes(x = cases,
                                    y = reorder(area,
                                                cases,
                                                sum))
                                    )+
                             geom_bar(stat = "identity",
                                      width=.6,
                                      position = position_dodge(width = 0.5),
                                      fill = "#69c8ff")+
                             labs(
                               title="Total Cases by County",
                               y = "County"
                             )+
                             theme(axis.text.y = element_text(size = 7)) +
                             geom_text(aes(label=cases),
                                       hjust = -0.2,
                                       size = 2.5,
                                       position = position_dodge(width = 1),
                                       inherit.aes = TRUE)
options(repr.plot.width = 14, repr.plot.height = 8)
total_cases_by_area_graph
```

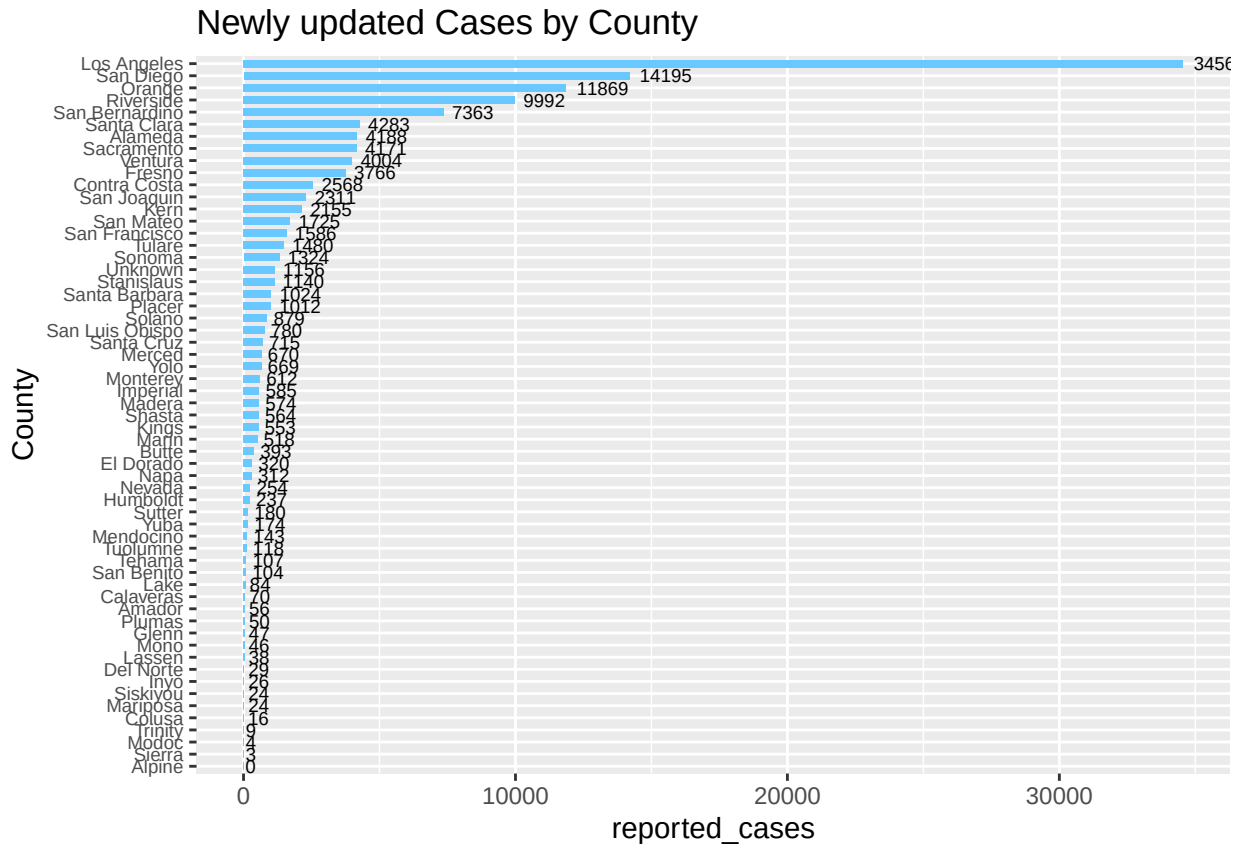



```
#Total Death Group by Area-----------------------------------------------------
total_deaths_by_area <- aggregate(deaths ~ area,
                                  data_v1,
                                  sum)
total_deaths_by_area_graph <- ggplot(data=total_deaths_by_area,
                                     aes(x = deaths,
                                         y = reorder(area,
                                                     deaths,
                                                     sum))
                                     )+
                              geom_bar(stat = "identity",
                                       width=.6,
                                       position = position_dodge(width = 0.5),
                                       fill = "#69c8ff")+
                              labs(
                                title="Total Deaths by County",
                                y = "County"
                              )+
                              theme(axis.text.y = element_text(size = 7)) +
                              geom_text(aes(label=deaths),
                                        hjust = -0.2,
                                        size = 2.5,
                                        position = position_dodge(width = 1),
                                        inherit.aes = TRUE)
options(repr.plot.width = 14, repr.plot.height = 8)
total_deaths_by_area_graph
```



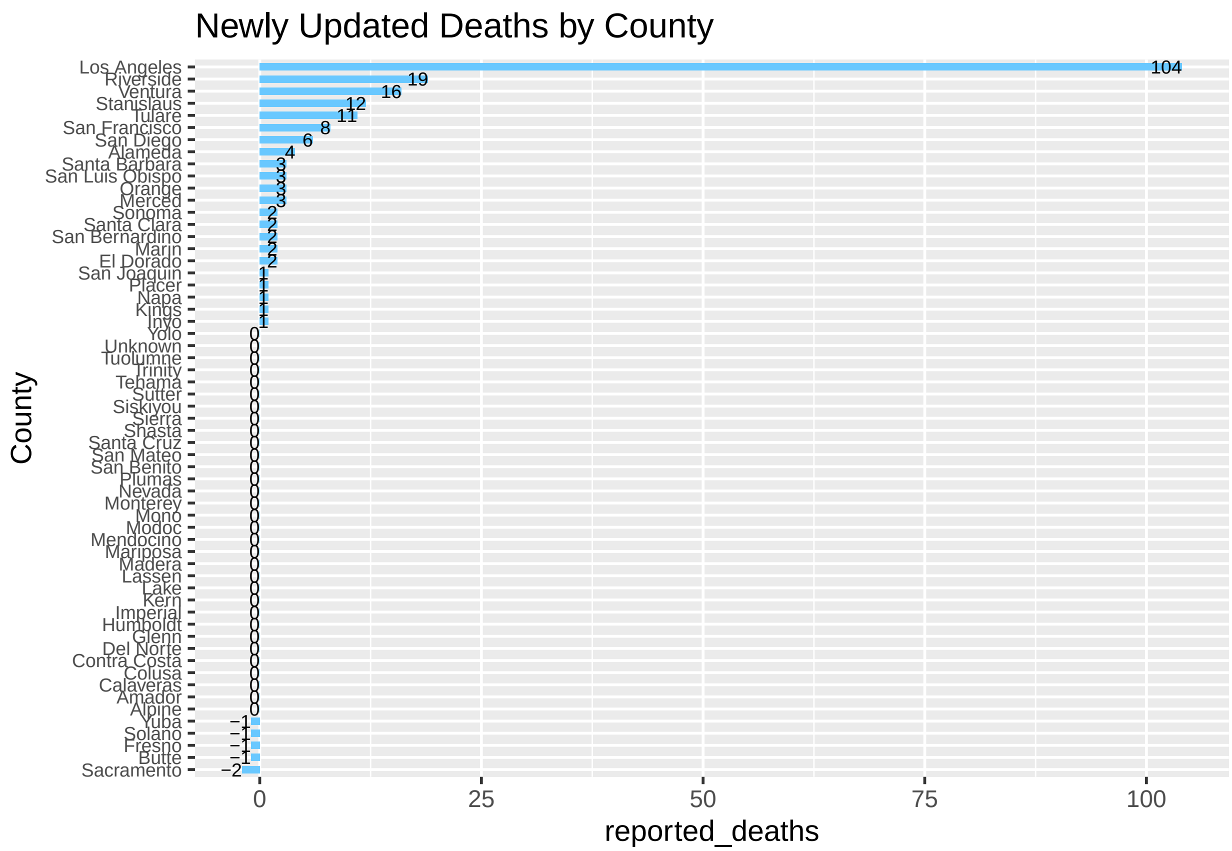

```
#Recent Date-------------------------------------------
RecentDate_end = data_v1$date[length(data_v1$date)-1]
RecentDate_start = data_v1$date[length(data_v1$date)-8]

recentdate_data_v1 <- data_v1[data_v1$date == RecentDate_end,]

#Newly Updated Cases-----------------------------------------------------
newly_updated_cases_by_area <- aggregate(reported_cases ~ area,
                                         recentdate_data_v1,
                                         sum)
newly_updated_cases_by_area_graph <- ggplot(newly_updated_cases_by_area,
                                            aes(x = reported_cases,
                                                y = reorder(area,
                                                            reported_cases,
                                                            sum))
                                            )+
                                     geom_bar(stat = "identity",
                                              width=.6,
                                              position = position_dodge(width = 0.5),
                                              fill = "#69c8ff")+
                                     labs(
                                       title="Newly updated Cases by County",
                                       y = "County"
                                     )+
                                     theme(axis.text.y = element_text(size = 7)) +
                                     geom_text(aes(label=reported_cases),
```

```
                                          hjust = -0.2,
                                          size = 2.5,
                                          position = position_dodge(width = 1),
                                          inherit.aes = TRUE)
options(repr.plot.width = 14, repr.plot.height = 8)
newly_updated_cases_by_area_graph
```




```
#Newly Updated Deaths-----------------------------------------------------
newly_updated_deaths_by_area <- aggregate(reported_deaths ~ area,
                                          recentdate_data_v1,
                                          sum)
newly_updated_deaths_by_area_graph <- ggplot(data=newly_updated_deaths_by_area,
                                             aes(x = reported_deaths,
                                                 y = reorder(area,
                                                             reported_deaths,
                                                             sum))
                                             )+
                                      geom_bar(stat = "identity",
                                               width=.6,
                                               position = position_dodge(width = 0.5),
                                               fill = "#69c8ff")+
                                      labs(
                                        title="Newly Updated Deaths by County",
                                        y = "County"
                                      )+
```

```r
                                              theme(axis.text.y = element_text(size = 7)) +
                                              geom_text(aes(label=reported_deaths),
                                                        hjust = 1,
                                                        size = 2.5,
                                                        position = position_dodge(width = 1),
                                                        inherit.aes = TRUE)
options(repr.plot.width = 14, repr.plot.height = 8)
newly_updated_deaths_by_area_graph
```



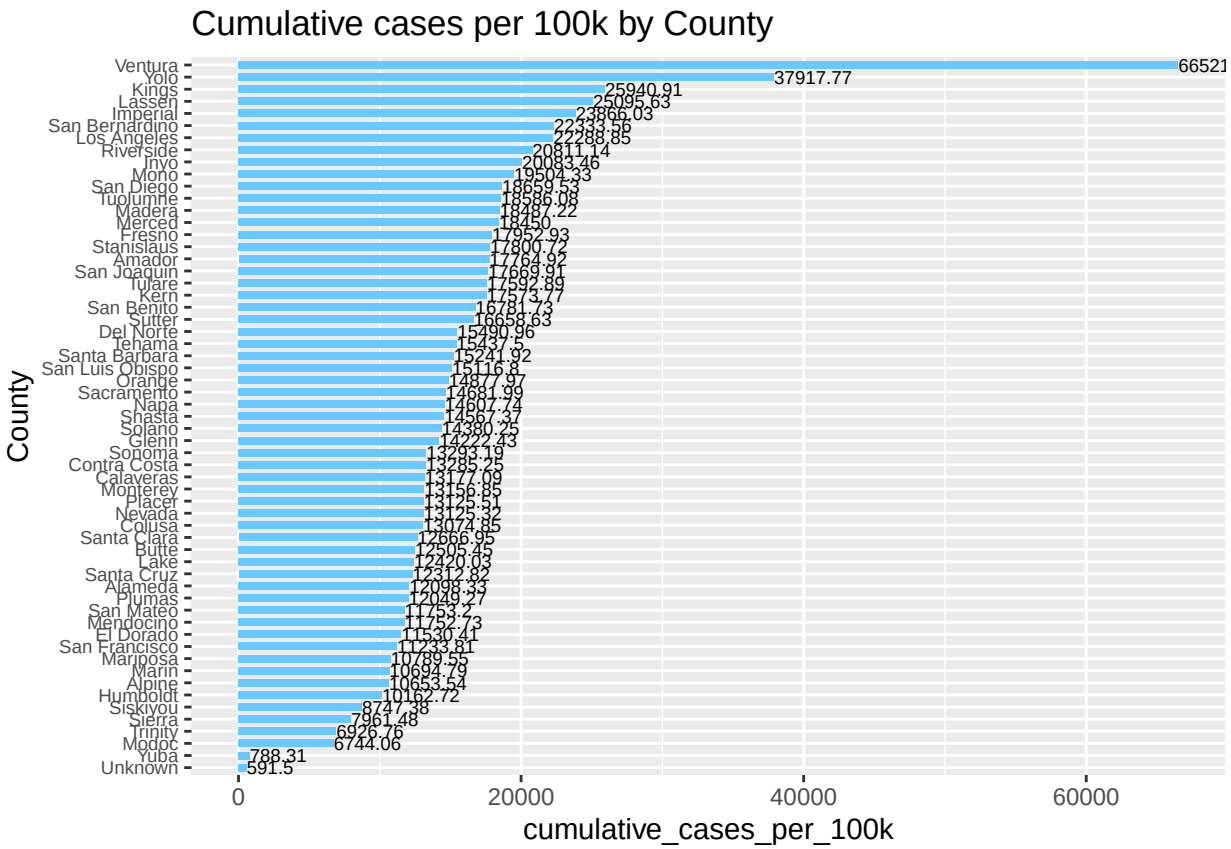

```r
newly_population_by_area <- aggregate(population ~ area,recentdate_data_v1,max)
#c(total_cases_by_area$area)
#c(total_cases_by_area$cases)
#c(total_deaths_by_area$deaths)
#c(newly_population_by_area$population)
#c((total_cases_by_area$cases/newly_population_by_area$population)* 100000)

area <- c(total_cases_by_area$area)
cumulative_cases_per_100k <- c(round((total_cases_by_area$cases/newly_population_by_area$population)* 1
```

```
## Warning in total_cases_by_area$cases/newly_population_by_area$population: longer
## object length is not a multiple of shorter object length
```

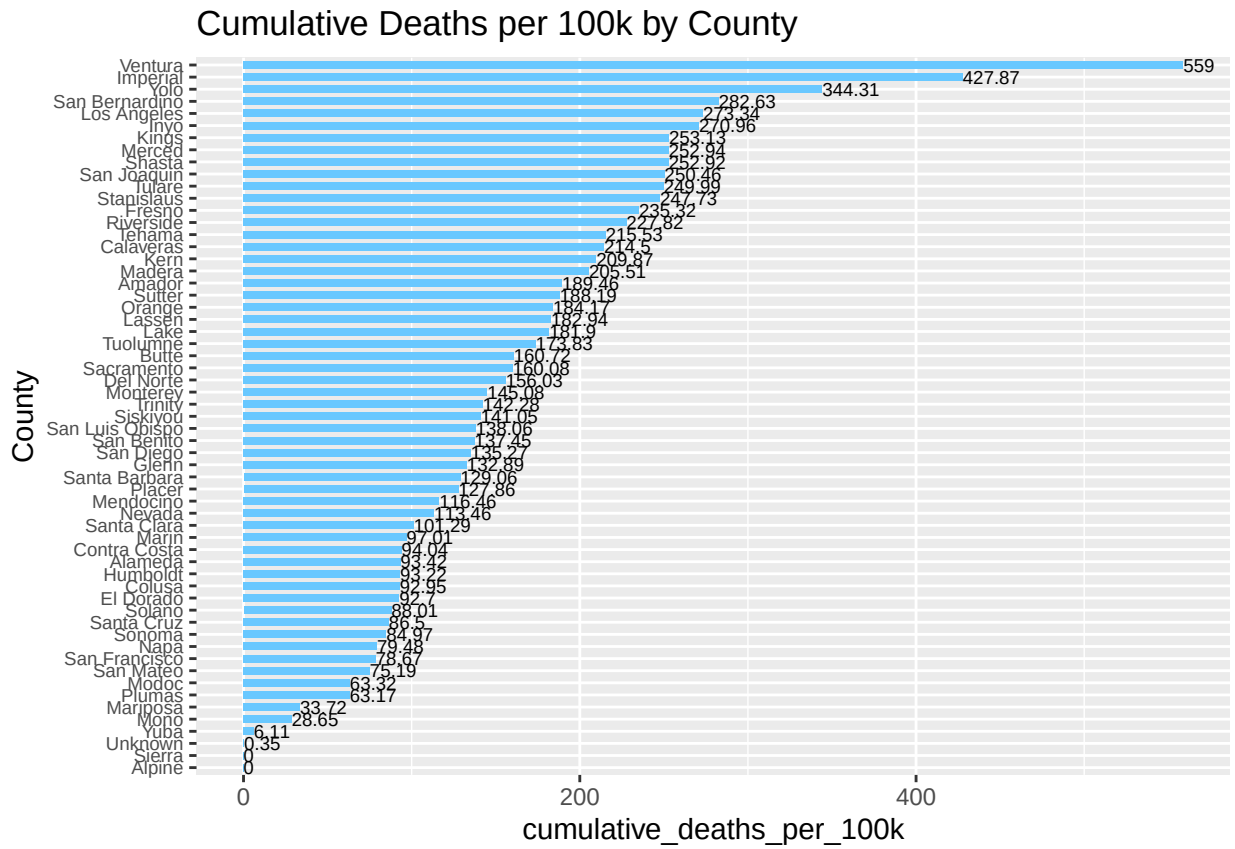
```r
cumulative_deaths_per_100k <- c(round((total_deaths_by_area$deaths/newly_population_by_area$population)
```

```
## Warning in total_deaths_by_area$deaths/newly_population_by_area$population:
## longer object length is not a multiple of shorter object length
```

```
cumulative_per_100k <- data.frame(area,
                                  cumulative_cases_per_100k,
                                  cumulative_deaths_per_100k)


#Cumulative Cases per 100k ----------------------------------------------------------
cumulative_cases_per_100k_graph <- ggplot(data=cumulative_per_100k,
                                          aes(x = cumulative_cases_per_100k,
                                              y = reorder(area,
                                                          cumulative_cases_per_100k))
                                          )+
                                   geom_bar(stat = "identity",
                                            width=.6,
                                            position = position_dodge(width = 0.5),
                                            fill = "#69c8ff")+
                                   labs(
                                     title="Cumulative cases per 100k by County",
                                     y = "County"
                                   )+
                                   theme(axis.text.y = element_text(size = 7)) +
                                   geom_text(aes(label=cumulative_cases_per_100k),
                                             hjust = 0,
                                             size = 2.5,
                                             position = position_dodge(width = 1),
                                             inherit.aes = TRUE)
options(repr.plot.width = 14, repr.plot.height = 8)
cumulative_cases_per_100k_graph
```




```
#Cumulative Deaths per 100k ------------------------------------------------------------
cumulative_deaths_per_100k_graph <- ggplot(data=cumulative_per_100k,
                                    aes(x = cumulative_deaths_per_100k,
                                        y = reorder(area,
                                                    cumulative_deaths_per_100k))
                                    )+
                                   geom_bar(stat = "identity",
                                            width=.6,
                                            position = position_dodge(width = 0.5),
                                            fill = "#69c8ff")+
                                   labs(
                                     title = "Cumulative Deaths per 100k by County",
                                     y = "County"
                                   )+
                                   theme(axis.text.y = element_text(size = 7)) +
                                   geom_text(aes(label=cumulative_deaths_per_100k),
                                             hjust = 0,
                                             size = 2.5,
                                             position = position_dodge(width = 1),
                                             inherit.aes = TRUE)
options(repr.plot.width = 14, repr.plot.height = 8)
cumulative_deaths_per_100k_graph
```




```
#Total by 7 days-------------------------------------------------------------

recentdate_data_v2 <- data_v1[data_v1$date >=RecentDate_start & data_v1$date<=RecentDate_end,]
head(recentdate_data_v2,5)
```

```
##           date    area area_type population cases cumulative_cases deaths
## 713 2022-01-13 Alameda    County    1685886  4367           194475      0
## 714 2022-01-14 Alameda    County    1685886  3338           197813      1
## 715 2022-01-15 Alameda    County    1685886  1479           199292      1
## 716 2022-01-16 Alameda    County    1685886  1126           200418      1
## 717 2022-01-17 Alameda    County    1685886  2098           202516      0
##     cumulative_deaths total_tests cumulative_total_tests positive_tests
## 713              1569       30569                5255142           5620
## 714              1570       24856                5279998           4398
## 715              1571        9895                5289893           1884
## 716              1572        7509                5297402           1424
## 717              1572       13653                5311055           2721
##     cumulative_positive_tests reported_cases cumulative_reported_cases
## 713                    236502           4767                    177768
## 714                    240900              0                    177768
## 715                    242784              0                    177768
## 716                    244208          12923                    190691
## 717                    246929           2585                    193276
##     reported_deaths cumulative_reported_deaths reported_tests
## 713              -2                       1561          25440
## 714               0                       1561             NA
```

```
## 715               0                       1561             NA
## 716               3                       1564          89440
## 717               1                       1565          18702
```

```
recentdate_data_v3 <- aggregate(cases ~ date, recentdate_data_v2,sum)
recentdate_data_v4 <- aggregate(deaths ~ date, recentdate_data_v2,sum)

date <- c(recentdate_data_v3$date)
Total_Cases_7days <- c(recentdate_data_v3$cases)
Total_Deaths_7days <- c(recentdate_data_v4$deaths)

covid_dataset_newly_dataset<- data.frame(date,
                                         Total_Cases_7days,
                                         Total_Deaths_7days)
covid_dataset_newly_dataset
```

```
##         date Total_Cases_7days Total_Deaths_7days
## 1 2022-01-13            101645                 61
## 2 2022-01-14             84954                 43
## 3 2022-01-15             39720                 47
## 4 2022-01-16             24151                 43
## 5 2022-01-17             44865                 33
## 6 2022-01-18             33286                 22
## 7 2022-01-19              3858                  7
## 8 2022-01-20                 0                  0
```

```
length(c(covid_dataset_newly_dataset$date))
```

```
## [1] 8
```

```
cases_7day <- c()
deaths_7day <- c()
for (i in 1:length(c(covid_dataset_newly_dataset$date))){
  if (i == 1){
    cases_7day <- append(cases_7day, covid_dataset_newly_dataset$Total_Cases_7days[1])
    deaths_7day <- append(deaths_7day, covid_dataset_newly_dataset$Total_Deaths_7days[1])
  }else{
      cases_window = covid_dataset_newly_dataset$Total_Cases_7days[1:i]
      deaths_window = covid_dataset_newly_dataset$Total_Deaths_7days[1:i]
      cases_window_sum= sum(cases_window)
      deaths_window_sum= sum(deaths_window)
      cases_7day <- append(cases_7day, cases_window_sum)
      deaths_7day <- append(deaths_7day, deaths_window_sum)
  }
}


covid_dataset_newly_dataset$Total_Cases_7days_sum <- cases_7day
covid_dataset_newly_dataset$Total_Deaths_7days_sum <- deaths_7day
covid_dataset_newly_dataset
```

```
##         date Total_Cases_7days Total_Deaths_7days Total_Cases_7days_sum
```

```
## 1 2022-01-13            101645                 61                101645
## 2 2022-01-14             84954                 43                186599
## 3 2022-01-15             39720                 47                226319
## 4 2022-01-16             24151                 43                250470
## 5 2022-01-17             44865                 33                295335
## 6 2022-01-18             33286                 22                328621
## 7 2022-01-19              3858                  7                332479
## 8 2022-01-20                 0                  0                332479
##   Total_Deaths_7days_sum
## 1                     61
## 2                    104
## 3                    151
## 4                    194
## 5                    227
## 6                    249
## 7                    256
## 8                    256
```

```
cases_7day_avg <- c()
deaths_7day_avg <- c()
for (i in 1:length(c(covid_dataset_newly_dataset$date))){
  cases_window_avg = covid_dataset_newly_dataset$Total_Cases_7days_sum[i] / (i)
  deaths_window_avg = covid_dataset_newly_dataset$Total_Deaths_7days_sum[i] / (i)
  cases_7day_avg <- append(cases_7day_avg, cases_window_avg)
  deaths_7day_avg <- append(deaths_7day_avg, deaths_window_avg)
}

Cases_per_100k_7_day_average = round((sum(cases_7day_avg)/7) / sum(newly_population_by_area$population)*
Deaths_per_100k_7_day_average = round((sum(deaths_7day_avg)/7) / sum(newly_population_by_area$populatio

Cases_per_100k_7_day_average
```

```
## [1] 190.78
```

```
recentdate_data_v5 = subset(recentdate_data_v2, select = -c(area_type, cumulative_cases, cumulative_dea
                                                             cumulative_total_tests, positive_tests, cumu
                                                             reported_cases, cumulative_reported_cases, 
                                                             cumulative_reported_deaths, reported_tests))

head(recentdate_data_v5,5)
```

```
##           date    area population cases deaths
## 713 2022-01-13 Alameda    1685886  4367      0
## 714 2022-01-14 Alameda    1685886  3338      1
## 715 2022-01-15 Alameda    1685886  1479      1
## 716 2022-01-16 Alameda    1685886  1126      1
## 717 2022-01-17 Alameda    1685886  2098      0
```

```
extract_cases_7_days_average_per_100k <- function(area_name) {
  cases_7day <- c()
  cases_7day_avg <- c()
  county_toal_cases = recentdate_data_v5[recentdate_data_v5$area==area_name,]$cases
  population =  max(recentdate_data_v5[recentdate_data_v5$area==area_name,]$population)
```

```
  for (i in 1:length(c(covid_dataset_newly_dataset$date))){
    if (i == 1){
      cases_7day <- append(cases_7day, county_toal_cases[1])
    }else{
      cases_window = county_toal_cases[1:i]
      cases_window_sum= sum(cases_window)
      cases_7day <- append(cases_7day, cases_window_sum)
    }
  }
  for (i in 1:7){
    cases_window_avg = cases_7day[i] / (i)
    cases_7day_avg <- append(cases_7day_avg, cases_window_avg)
  }
  Cases_per_100k_7_day_average = round((sum(cases_7day_avg)/7) / population*100000,2)
  return(Cases_per_100k_7_day_average)
}

extract_deaths_7_days_average_per_100k <- function(area_name) {
  deaths_7day <- c()
  deaths_7day_avg <- c()
  county_toal_deaths = recentdate_data_v5[recentdate_data_v5$area==area_name,]$deaths
  population =  max(recentdate_data_v5[recentdate_data_v5$area==area_name,]$population)
  for (i in 1:length(c(covid_dataset_newly_dataset$date))){
    if (i == 1){
      deaths_7day <- append(deaths_7day, county_toal_deaths[1])
    }else{
      deaths_window = county_toal_deaths[1:i]
      deaths_window_sum= sum(deaths_window)
      deaths_7day <- append(deaths_7day, deaths_window_sum)
    }
  }
  for (i in 1:7){
    deaths_window_avg =  deaths_7day[i] / (i)
    deaths_7day_avg <- append(deaths_7day_avg, deaths_window_avg)
  }
  Deaths_per_100k_7_day_average = round((sum(deaths_7day_avg)/7) / population*100000,2)
  return(Deaths_per_100k_7_day_average )
}

extract_cases_7_days_average_per_100k("Alameda")
```

```
## [1] 174.59
```

```
extract_deaths_7_days_average_per_100k("Alameda")
```

```
## [1] 0.03
```

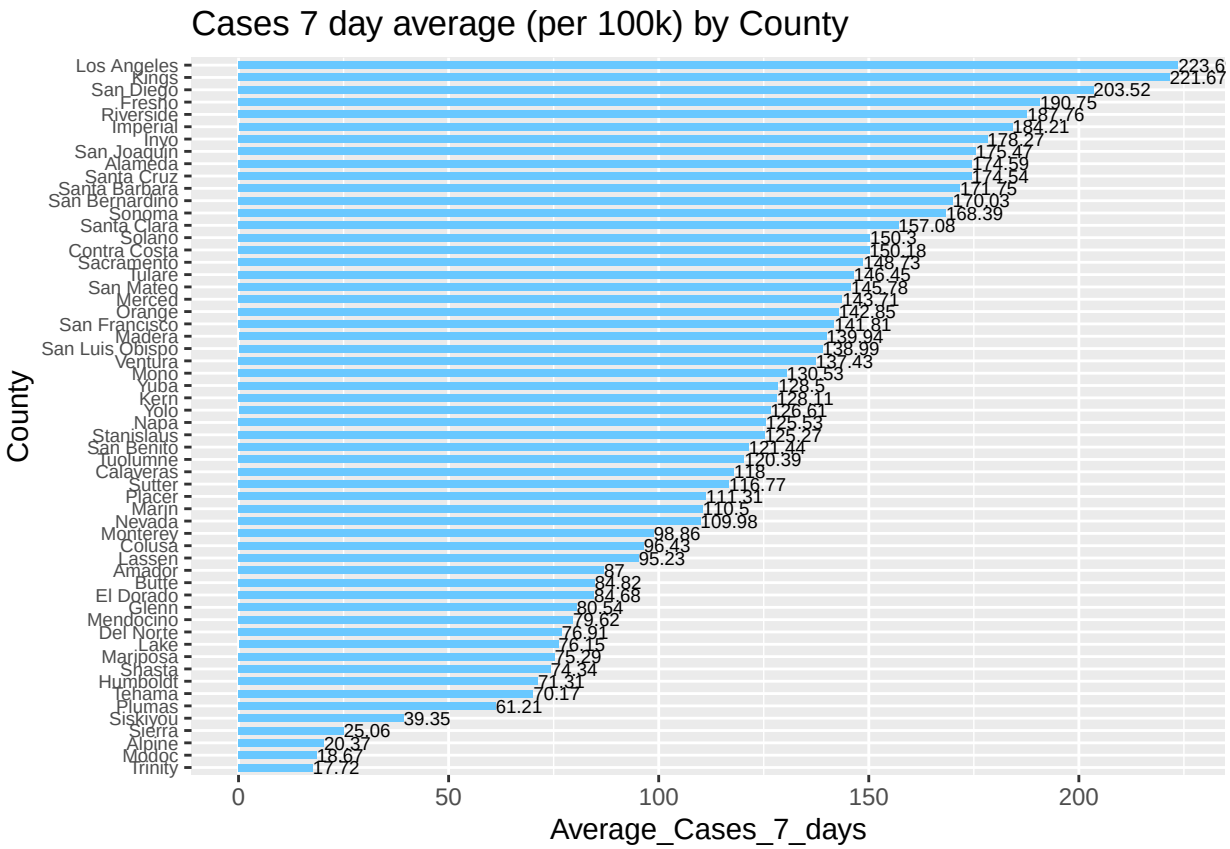
```
Area <- c()
Average_Cases_7_days <- c()
Average_Deaths_7_days <- c()
for (i in c(unique(recentdate_data_v5$area))){
  Area <- append(Area, i)
```

```
  Average_Cases_7_days <-append(Average_Cases_7_days, extract_cases_7_days_average_per_100k(i))
  Average_Deaths_7_days  <- append(Average_Deaths_7_days, extract_deaths_7_days_average_per_100k(i))
}

extract_7_days_average_per_100k<- data.frame(Area,
                                             Average_Cases_7_days,
                                             Average_Deaths_7_days)
head(extract_7_days_average_per_100k,5)
```

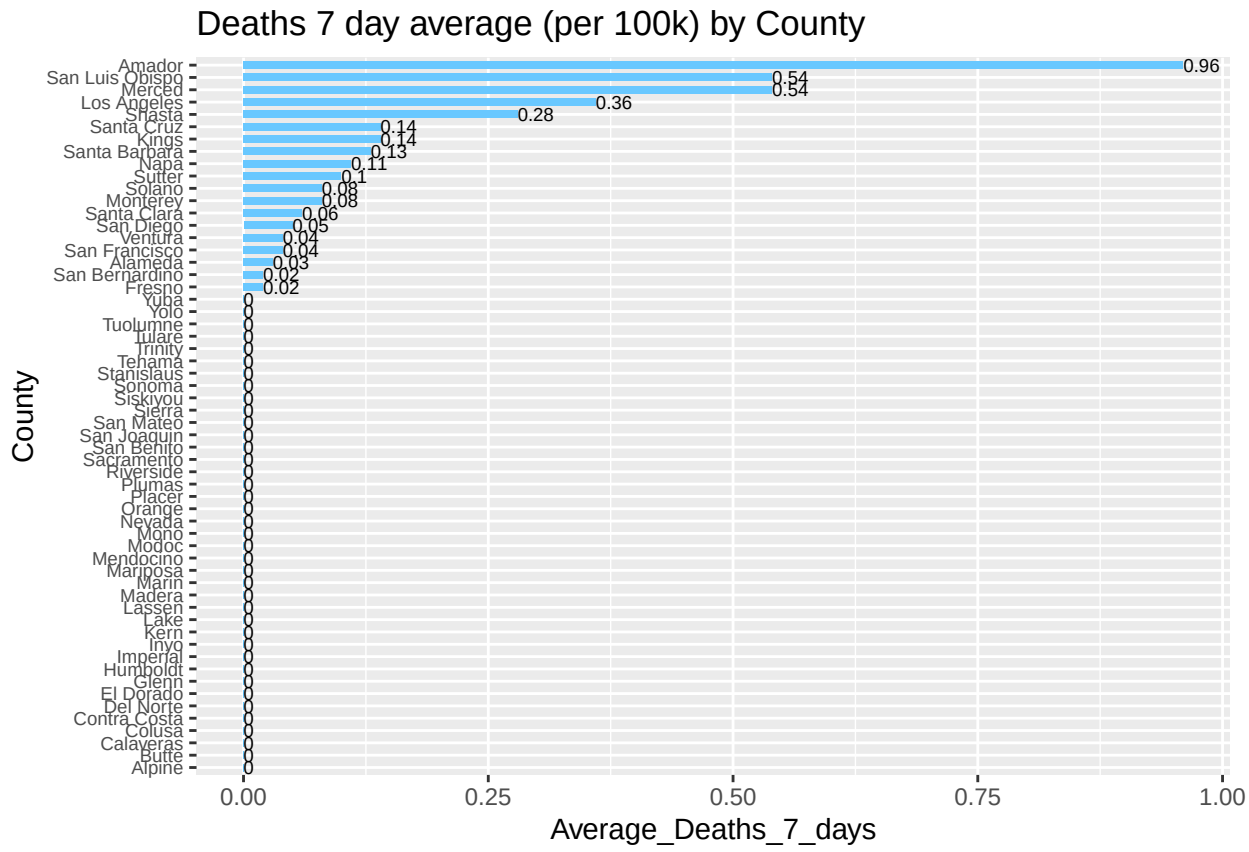
```
##        Area Average_Cases_7_days Average_Deaths_7_days
## 1   Alameda               174.59                  0.03
## 2    Alpine                20.37                  0.00
## 3    Amador                87.00                  0.96
## 4     Butte                84.82                  0.00
## 5 Calaveras               118.00                  0.00
```

```
extract_7_days_average_per_100k <- filter(extract_7_days_average_per_100k,
                                  !area %in% c('Unknown'))
```

```
extract_cases_7_days_average_per_100k_graph <- ggplot(data=extract_7_days_average_per_100k,
                                                      aes(x = Average_Cases_7_days,
                                                          y = reorder(Area,
                                                                      Average_Cases_7_days))
                                                        )+
                                               geom_bar(stat = "identity",
                                                        width=.6,
                                                        position = position_dodge(width = 0.5),
                                                        fill = "#69c8ff")+
                                               labs(
                                                 title="Cases 7 day average (per 100k) by County",
                                                 y = "County"
                                               )+
                                               theme(axis.text.y = element_text(size = 7)) +
                                               geom_text(aes(label=Average_Cases_7_days),
                                                         hjust = 0,
                                                         size = 2.5,
                                                         position = position_dodge(width = 1),
                                                         inherit.aes = TRUE)
options(repr.plot.width = 14, repr.plot.height = 8)
extract_cases_7_days_average_per_100k_graph
```




```
extract_deaths_7_days_average_per_100k_graph <- ggplot(data=extract_7_days_average_per_100k,
       aes(x = Average_Deaths_7_days,
           y = reorder(Area,
                       Average_Deaths_7_days))
       )+
  geom_bar(stat = "identity",
           width=.6,
           position = position_dodge(width = 0.5),
           fill = "#69c8ff")+
  labs(
    title="Deaths 7 day average (per 100k) by County",
    y = "County"
  )+
  theme(axis.text.y = element_text(size = 7)) +
  geom_text(aes(label=Average_Deaths_7_days),
            hjust = 0,
            size = 2.5,
            position = position_dodge(width = 1),
            inherit.aes = TRUE)
options(repr.plot.width = 14, repr.plot.height = 8)
extract_deaths_7_days_average_per_100k_graph
```



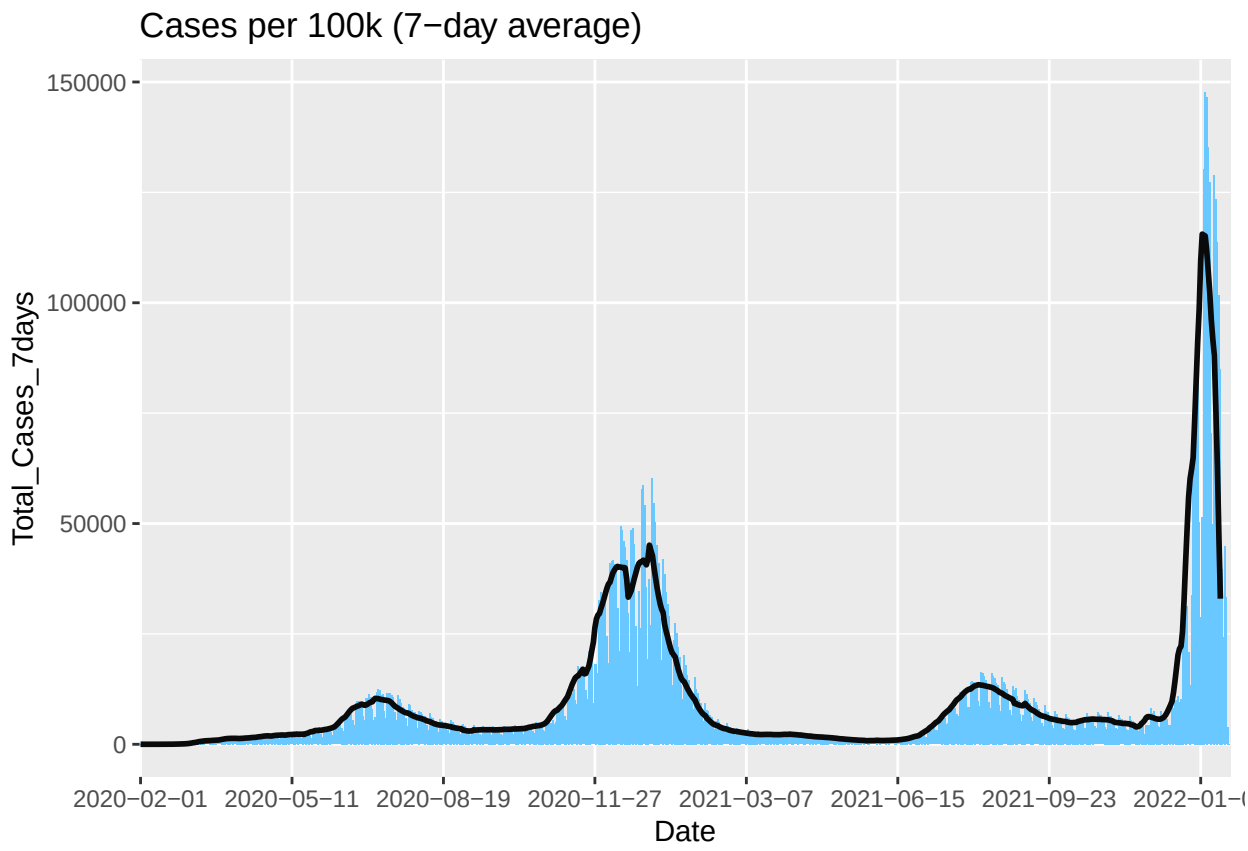

```
Total_Cases <- aggregate(cases ~ date, data_v1,sum)
Total_Cases <- Total_Cases[-1,]
row.names(Total_Cases) <- NULL
Total_Deaths <- aggregate(deaths ~ date, data_v1,sum)
Total_Deaths <- Total_Deaths[-1,]
row.names(Total_Deaths) <- NULL

date <- c(unique(data_v1$date))
date <- head(date, -1)
Total_Cases_7days <- c(Total_Cases$cases)
Total_Deaths_7days <- c(Total_Deaths$deaths)


covid_moving_average_dataset<- data.frame(date,
                                          Total_Cases_7days,
                                          Total_Deaths_7days)
cases_7day  <- c()
deaths_7day <- c()
window_size =7
for (i in 1:length(c(covid_moving_average_dataset$date))){
  if (i ==1){
    cases_7day <- append(cases_7day, covid_moving_average_dataset$Total_Cases_7days[1])
    deaths_7day <- append(deaths_7day, covid_moving_average_dataset$Total_Deaths_7days[1])
  }else{
    cases_window = covid_moving_average_dataset$Total_Cases_7days[i:(window_size+i-1)]
    deaths_window = covid_moving_average_dataset$Total_Deaths_7days[i:(window_size+i-1)]
```

```
    cases_window_sum= sum(cases_window) / window_size
    deaths_window_sum= sum(deaths_window) / window_size
    cases_7day <- append(cases_7day, cases_window_sum)
    deaths_7day <- append(deaths_7day, deaths_window_sum)
  }
}

covid_moving_average_dataset$Cases_Moving_average_7days <- cases_7day
covid_moving_average_dataset$Deaths_Moving_average_7days <- deaths_7day
head(covid_moving_average_dataset, 5)
```

```
##         date Total_Cases_7days Total_Deaths_7days Cases_Moving_average_7days
## 1 2020-02-01                23                  0                  23.000000
## 2 2020-02-02                 7                  0                   8.857143
## 3 2020-02-03                 5                  0                   8.714286
## 4 2020-02-04                 1                  0                   9.000000
## 5 2020-02-05                 3                  0                   9.428571
##   Deaths_Moving_average_7days
## 1                   0.0000000
## 2                   0.1428571
## 3                   0.1428571
## 4                   0.1428571
## 5                   0.1428571
```

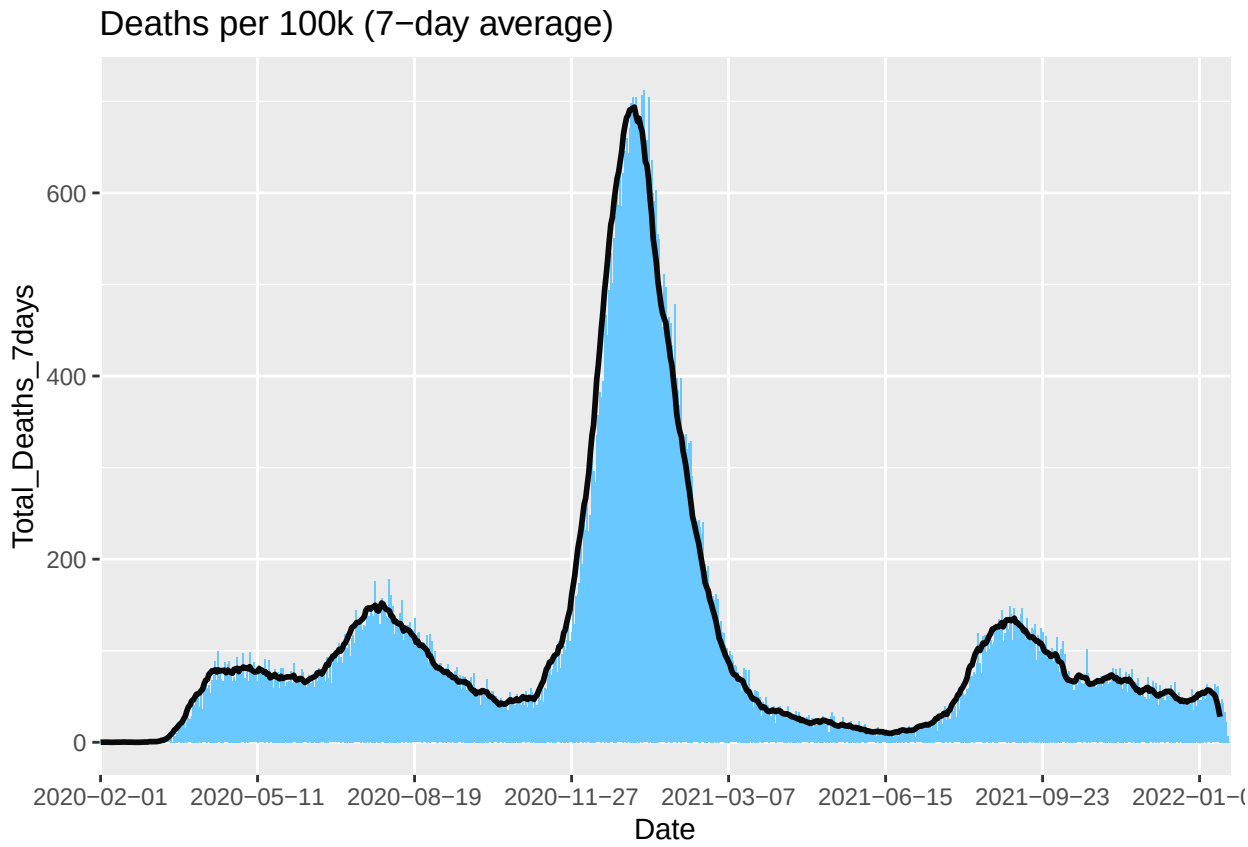
```
covid_moving_average_cases_per_100k_graph <- ggplot(covid_moving_average_dataset)+
                                             geom_bar(aes(x=date,
                                                          y=Total_Cases_7days),
                                                      stat="identity",
                                                      fill= "#69c8ff")+
                                             geom_line(aes(date,
                                                           Cases_Moving_average_7days,
                                                           group = 1),
                                                       col = "#0a0a0a",
                                                       size=1)+
                                             labs(
                                                title="Cases per 100k (7-day average)",
                                                x = "Date"
                                              )+
                                              scale_x_discrete(breaks = function(x) x[seq(1, length(x),
options(repr.plot.width = 14, repr.plot.height = 8)
covid_moving_average_cases_per_100k_graph
```

```
## Warning: Removed 6 row(s) containing missing values (geom_path).
```




```
covid_moving_average_deaths_per_100k_graph <- ggplot(covid_moving_average_dataset)+
                                               geom_bar(aes(x=date,
                                                            y=Total_Deaths_7days),
                                                        stat="identity",
                                                        fill= "#69c8ff")+
                                               geom_line(aes(date,
                                                             Deaths_Moving_average_7days,
                                                             group = 1),
                                                         col = "#0a0a0a",
                                                         size=1)+
                                               labs(
                                                 title ="Deaths per 100k (7-day average)",
                                                 x = "Date"
                                               )+
                                               scale_x_discrete(breaks = function(x) x[seq(1, length(x),
options(repr.plot.width = 14, repr.plot.height = 8)
covid_moving_average_deaths_per_100k_graph
```

```
## Warning: Removed 6 row(s) containing missing values (geom_path).
```




```
Total_CA_Cases = sum(total_cases_by_area$cases)
Total_CA_Deaths = sum(total_deaths_by_area$deaths)
RecentCases = sum(data_v1[data_v1$date== RecentDate_end ,]$reported_cases)
RecentDeaths = sum(data_v1[data_v1$date==RecentDate_end, ]$reported_deaths)
Cases_percent = round((RecentCases/Total_CA_Cases)*100,4)
Deaths_percent = round((RecentDeaths/Total_CA_Deaths)*100,4)

cat("Cases (Statewide)", "\n",
    "Total US Cases : ", Total_CA_Cases, "\n",
    "Covid19 cases in (", RecentDate_end ,"): ",RecentCases, "(+", Cases_percent, "%)", "\n",
    "Cases per 100k 7-day average (7 period ending", RecentDate_end ,"): ", Cases_per_100k_7_day_averag
    "-----------", "\n",
    "Deaths (Statewide)", "\n",
    "Total US Deaths : ", Total_CA_Deaths, "\n",
    "Covid19 Deaths in (", RecentDate_end ,"): ",RecentDeaths, "(+", Deaths_percent, "%)", "\n",
    "Deaths per 100k 7-day average (7 period ending", RecentDate_end ,"): ", Deaths_per_100k_7_day_avera
    )
```

```
## Cases (Statewide)
##  Total US Cases :  7123571
##  Covid19 cases in ( 2022-01-20 ):  125861 (+ 1.7668 %)
##  Cases per 100k 7-day average (7 period ending 2022-01-20 ):  190.78
##  -----------
##  Deaths (Statewide)
##  Total US Deaths :  77722
##  Covid19 Deaths in ( 2022-01-20 ):  201 (+ 0.2586 %)
```

```
##  Deaths per 100k 7-day average (7 period ending 2022-01-20 ):  0.13
```