

```
data <- read.csv('worldometer_coronavirus_daily_data.csv', stringsAsFactors = TRUE)
colnames(data) <- c('date', 'Country', 'Cumulative total cases', 'Daily new cases', 'Active cases', 'Cumulative t
otal deaths', 'Daily new deaths')

total_deaths <- aggregate(data$Cumulative total deaths, by = list(data$Country), max)
total_cases <- aggregate(data$Cumulative total cases, by = list(data$Country), max)

total_global <- merge(total_cases, total_deaths, by = 'Group.1')
colnames(total_global) <- c('Country', 'Cumulative total cases', 'Cumulative total deaths')

total <- total_global[total_global$Cumulative total cases > 6000000,]
colnames(total) <- c('Country', 'Cumulative total cases', 'Cumulative total deaths')

# Load required R packages
library(tidyverse)

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

## --- Attaching packages --- tidyverse 1.3.2 ---
## ✓ ggplot2 3.4.0 ✓ purrr 0.3.5
## ✓ tibble 3.1.0 ✓ dplyr 1.0.10
## ✓ tidyr 1.2.1 ✓ stringr 1.5.0
## ✓ readr 2.1.3 ✓ forcats 0.5.2

## Warning: package 'ggplot2' was built under R version 4.2.2

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

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

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

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

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

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

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

library(highcharter)

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

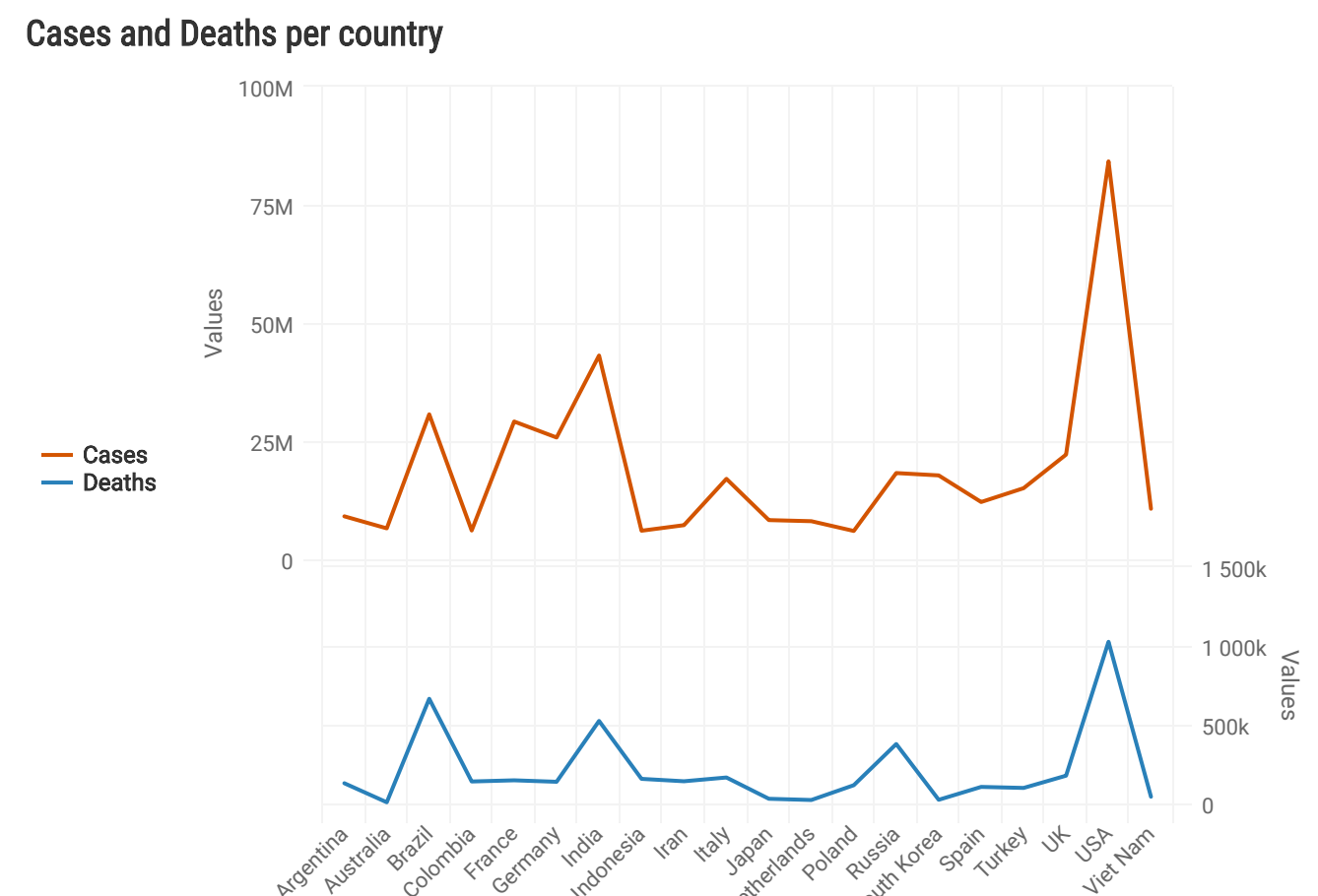
## Registered S3 method overwritten by 'quantmod':
## method from
## as.zoo.data.frame zoo
## Highcharts (www.highcharts.com) is a Highsoft software product which is
## not free for commercial and Governmental use

library(ggplot2)

# Set highcharter options
options(highcharter.theme = hc_theme_empl(tooltip = list(valueDecimals = 2)))

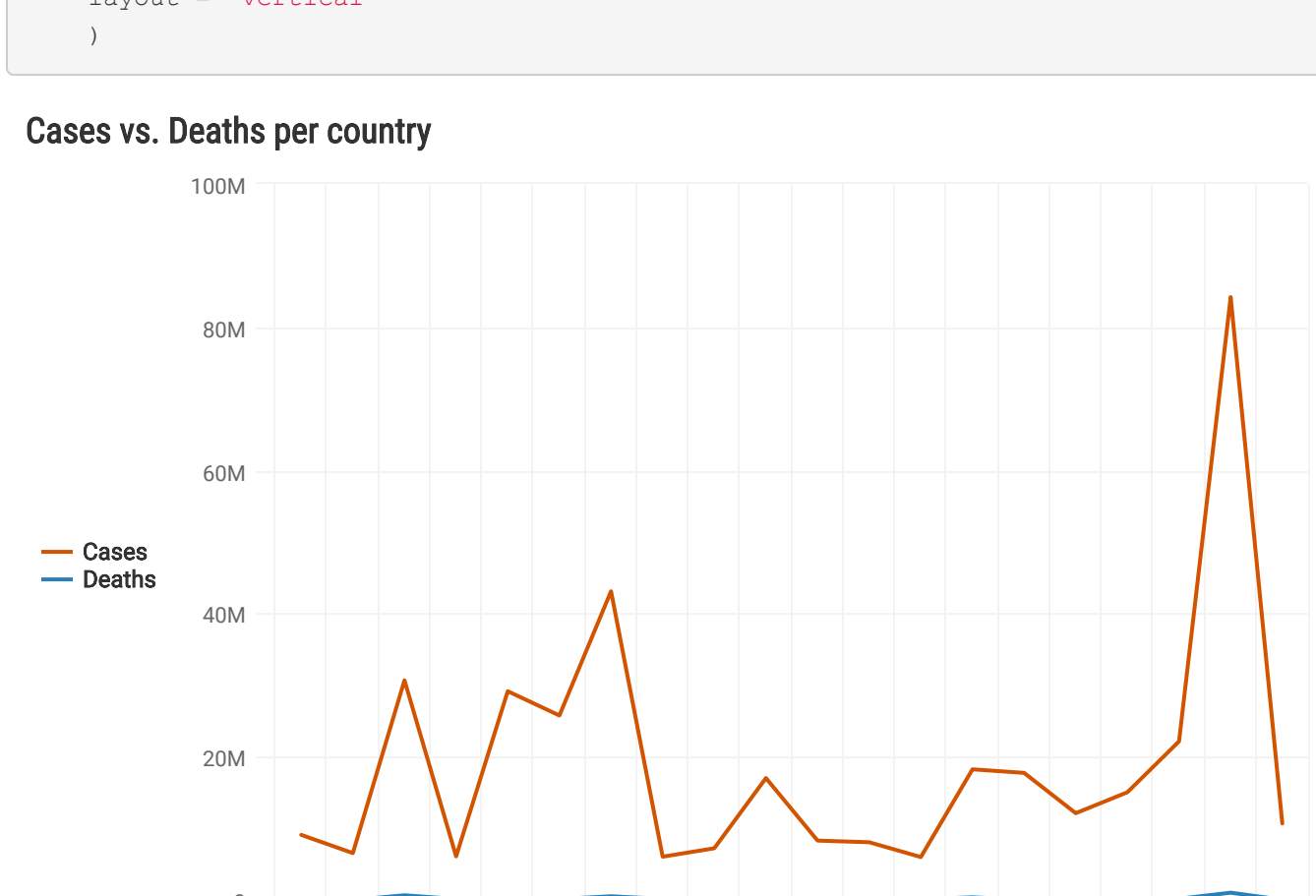
highchart() %>%
  hc_title(text = "Cases and Deaths per country") %>%
  hc_xAxis(categories = total$Country, title = 'Country') %>%
  hc_yAxis(multiples(create_axis(maxis = 2, height = c(2, 1))) %>%
  hc_add_series(total$Cumulative total cases', yAxis = 0, name = 'Cases') %>%
  hc_add_series(total$Cumulative total deaths', yAxis = 1, name = 'Deaths') %>%
  hc_legend(
    align = "left",
    verticalAlign = "middle",
    layout = "vertical"
  )
```

Cases and Deaths per country



```
highchart() %>%
  hc_title(text = "Cases vs. Deaths per country") %>%
  hc_xAxis(categories = total$Country, title = 'Country') %>%
  hc_yAxis(multiples(create_axis(maxis = 2, height = c(2, 1))) %>%
  hc_add_series(total$Cumulative total cases', name = 'Cases') %>%
  hc_add_series(total$Cumulative total deaths', name = 'Deaths') %>%
  hc_legend(
    align = "left",
    verticalAlign = "middle",
    layout = "vertical"
  )
```

Cases vs. Deaths per country



A continuación seleccionamos los 6 países con más casos para nuestra próxima visualización:

```
total <- total %>%
  arrange(desc(Cumulative total cases))
head(total)
```

Country	Cumulative total cases	Cumulative total deaths
1 USA	84209473	1028646
2 India	43121599	524214
3 Brazil	30862094	664920
4 France	29160802	147257
5 Germany	25774509	137907
6 UK	22159805	178708

```
data_series <- na.omit(data[data$Country %in% c('USA', 'India', 'Brazil', 'France', 'Germany', 'UK'),])

data_series$Population <- as.numeric(ifelse(data_series$Country == 'USA', 331900000,
  ifelse(data_series$Country == 'UK', 67330000,
  ifelse(data_series$Country == 'India', 1394000000,
  ifelse(data_series$Country == 'Brazil', 214900000,
  ifelse(data_series$Country == 'France', 67500000,
  ifelse(data_series$Country == 'Germany', 83130000,
  0))))))

data_series$Cumulative total cases by population' = data_series$Cumulative total cases' / data_series$Populatio
n
data_series$Cumulative total deaths by population %' = data_series$Cumulative total deaths' / data_series$Popul
ation*100
data_series$Daily new cases by population' = data_series$Daily new cases' / data_series$Population*100
data_series$Daily new deaths by population %' = data_series$Daily new deaths' / data_series$Population*100
```

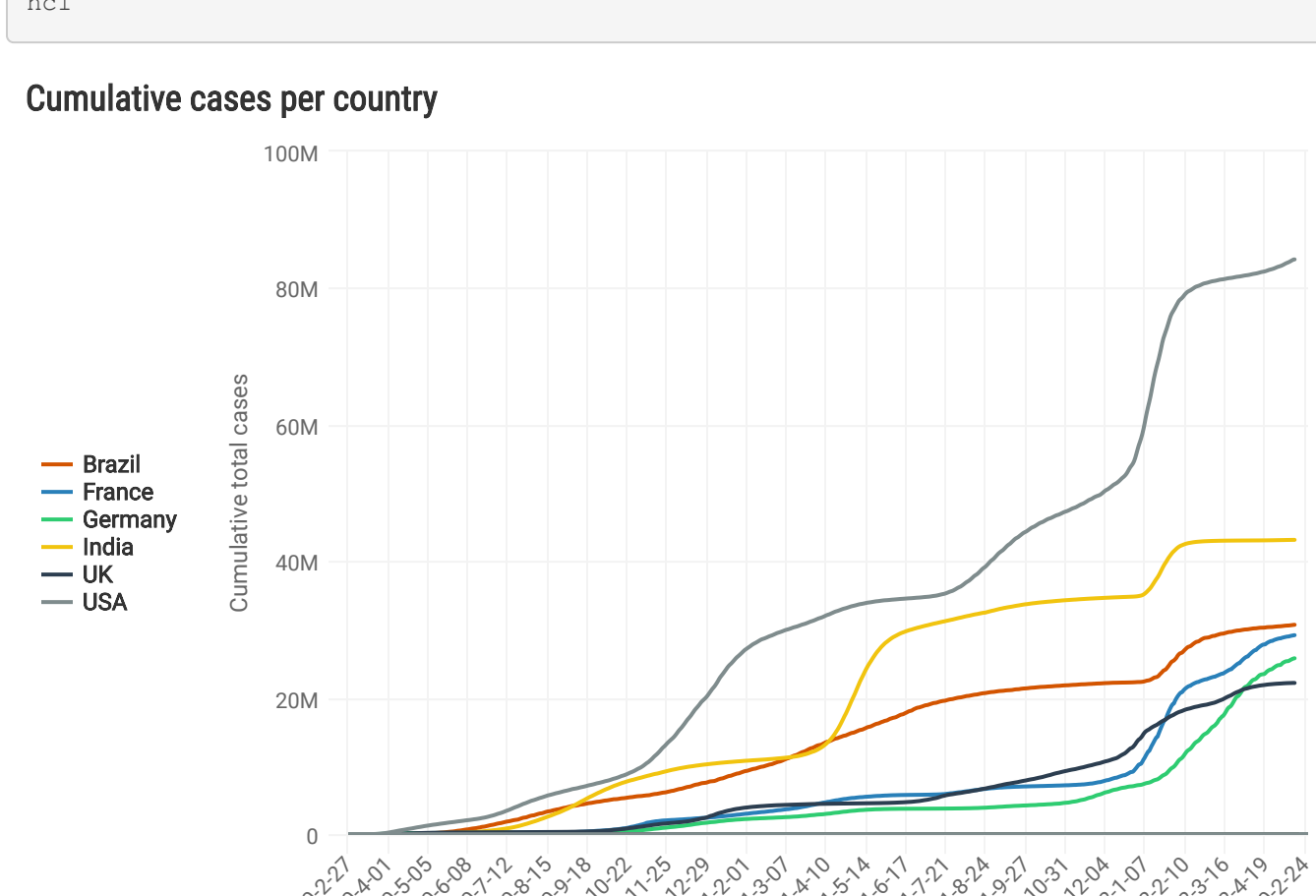
```
hc1 <- data_series %>%
  hc_hc('line', hcaes(x = Date, y = 'Cumulative total cases', group = Country)) %>%
  hc_title(text = "Cumulative cases per country") %>%
  hc_legend(
    align = "left",
    verticalAlign = "middle",
    layout = "vertical"
  )

hc2 <- data_series %>%
  hc_hc('line', hcaes(x = Date, y = 'Cumulative total cases by population', group = Country)) %>%
  hc_title(text = "Cumulative total cases / population per country") %>%
  hc_legend(
    align = "left",
    verticalAlign = "middle",
    layout = "vertical"
  )

par(mfrow=c(2,1))

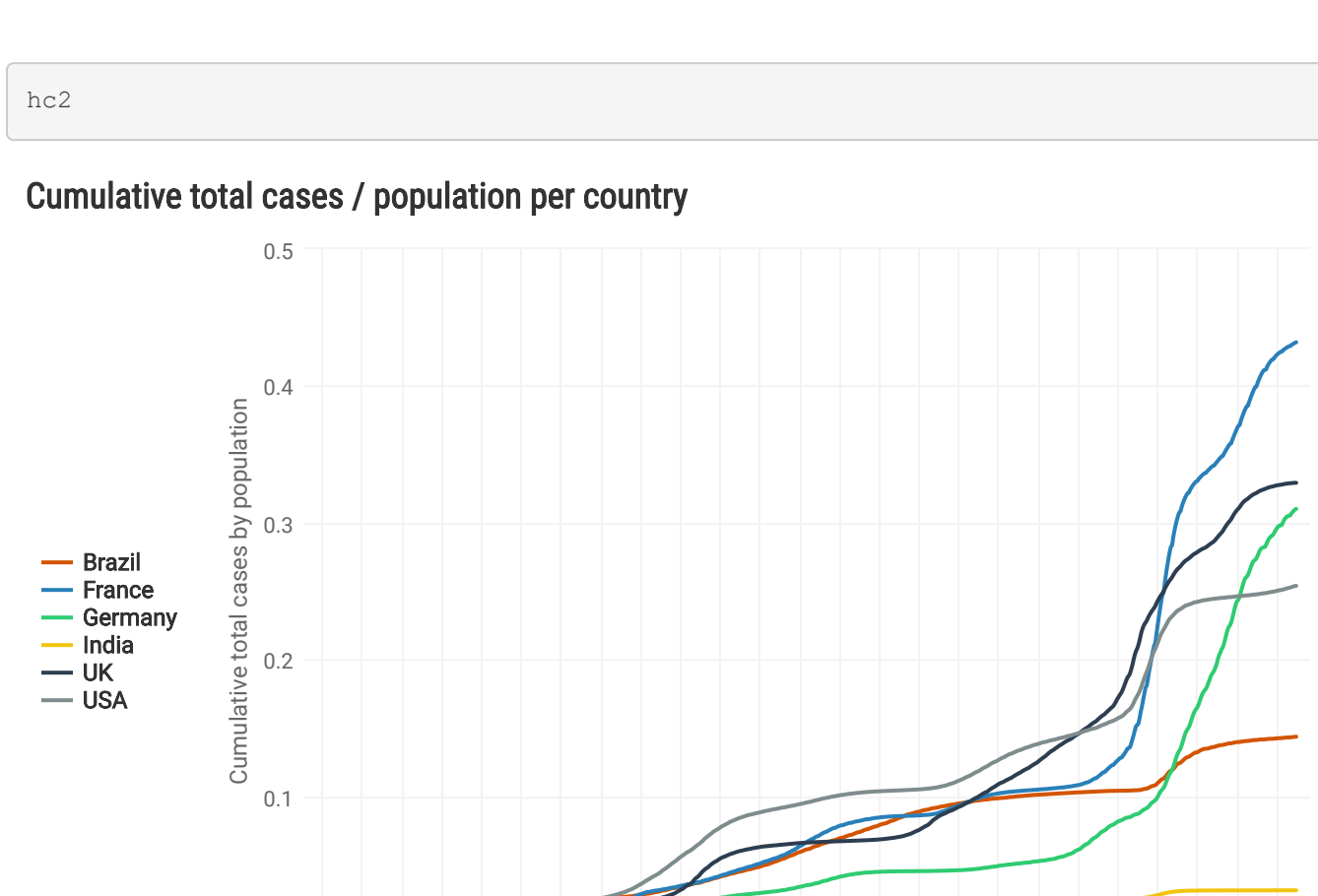
hc1
```

Cumulative cases per country



hc2

Cumulative total cases / population per country



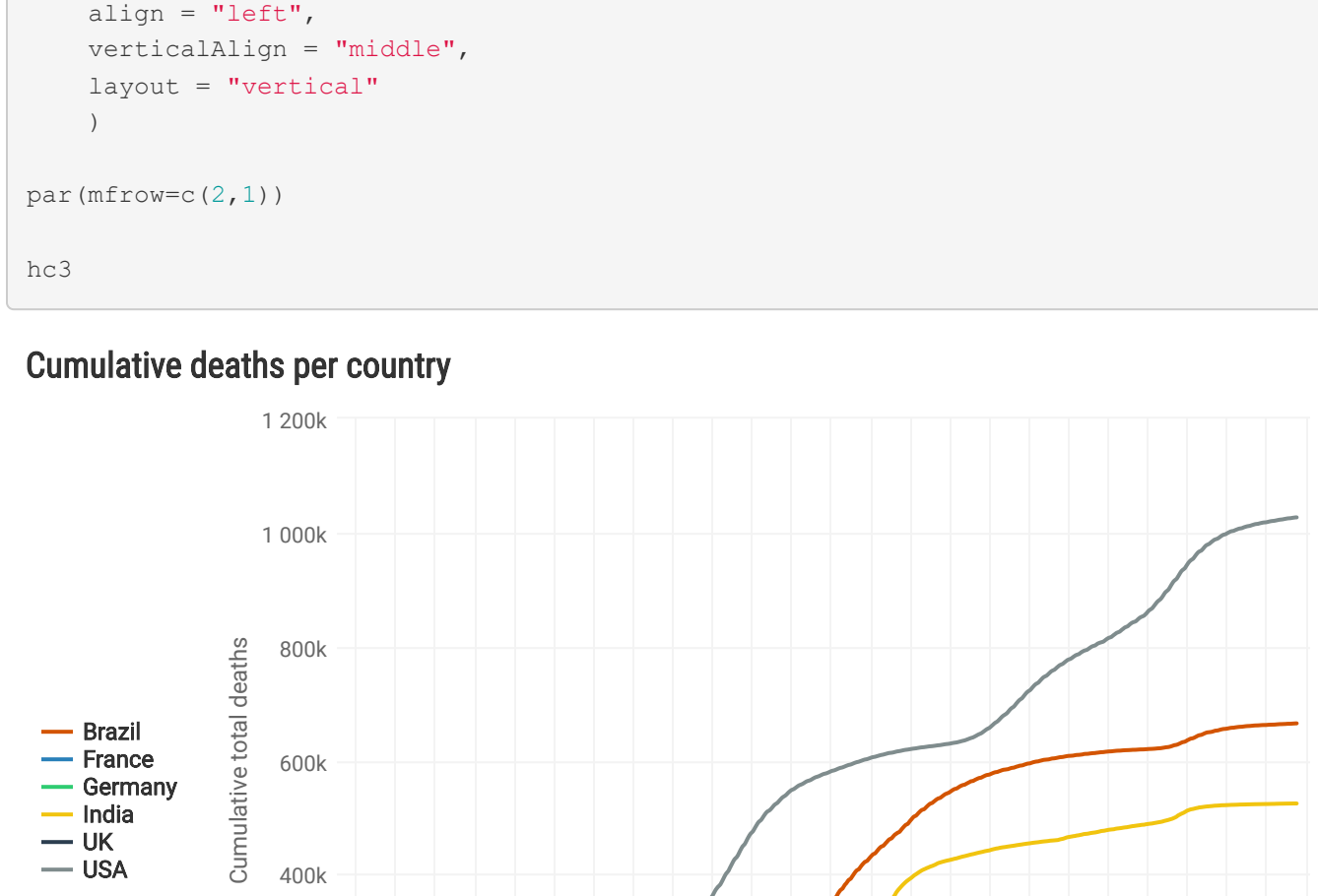
```
hc3 <- data_series %>%
  hc_hc('line', hcaes(x = Date, y = 'Cumulative total deaths', group = Country)) %>%
  hc_title(text = "Cumulative deaths per country") %>%
  hc_legend(
    align = "left",
    verticalAlign = "middle",
    layout = "vertical"
  )

hc4 <- data_series %>%
  hc_hc('line', hcaes(x = Date, y = 'Cumulative total deaths by population %', group = Country)) %>%
  hc_title(text = "Cumulative total deaths over population percentage per country") %>%
  hc_legend(
    align = "left",
    verticalAlign = "middle",
    layout = "vertical"
  )

par(mfrow=c(2,1))

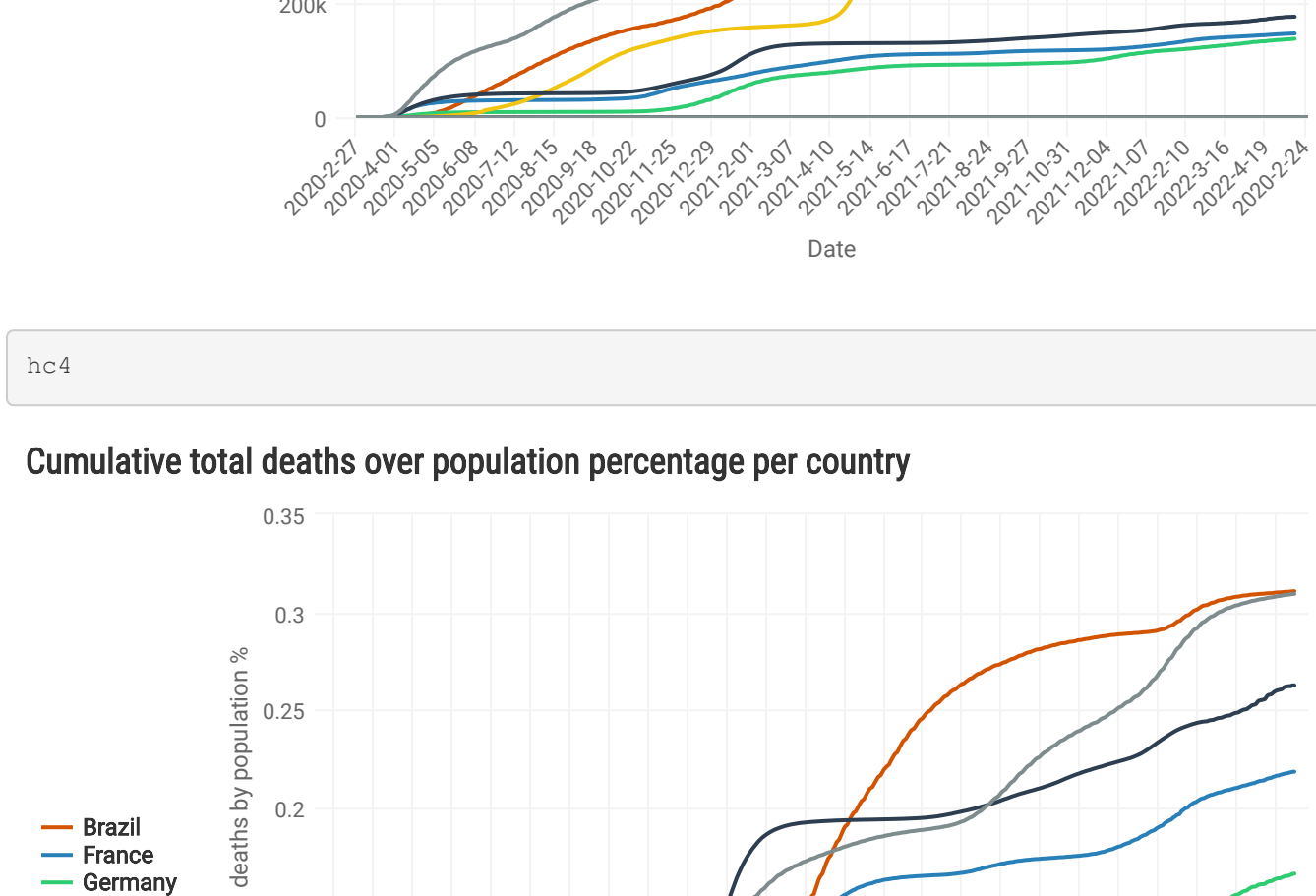
hc3
```

Cumulative deaths per country



hc4

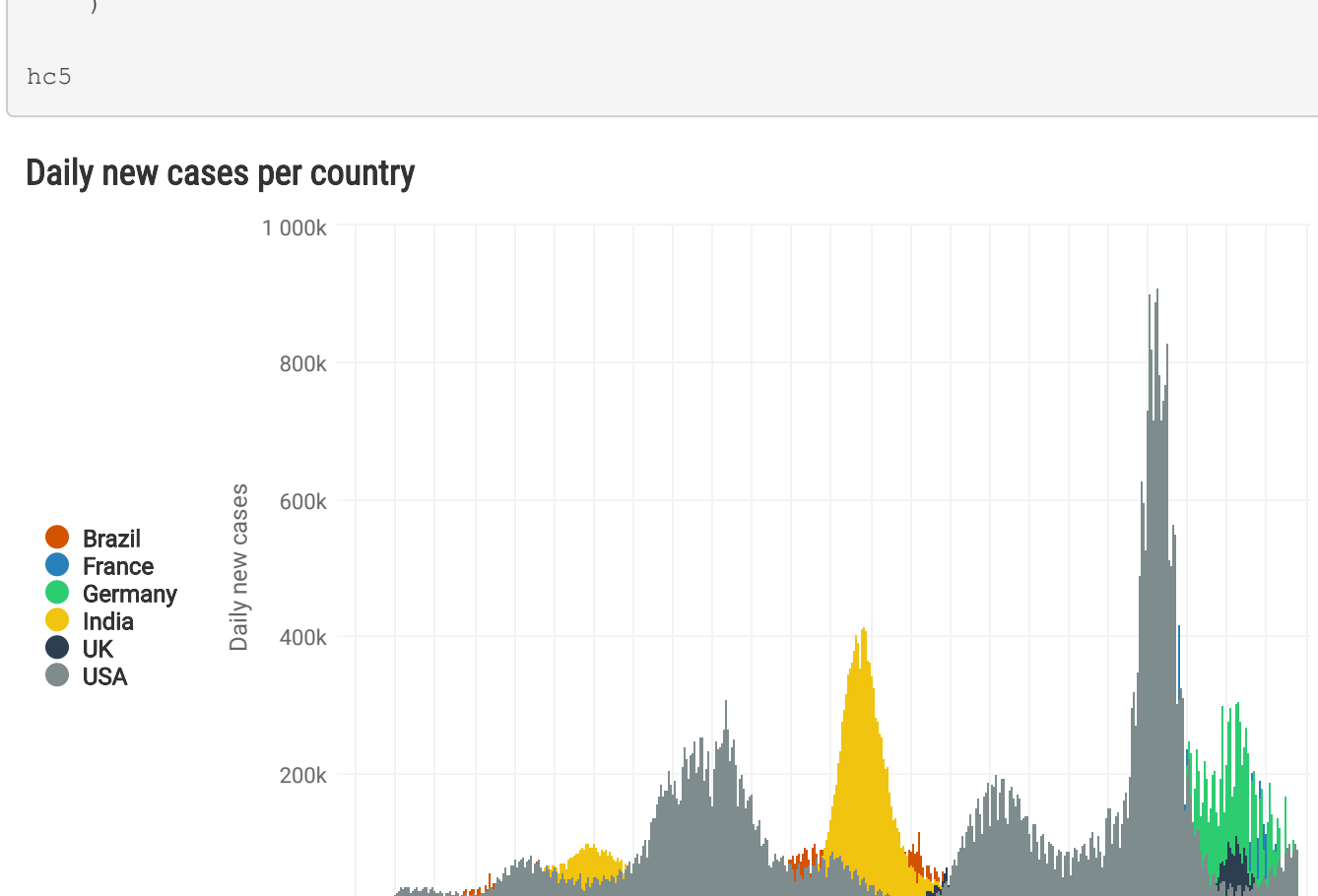
Cumulative total deaths over population percentage per country



```
hc5 <- data_series %>%
  hc_hc('column', hcaes(x = Date, y = 'Daily new cases', group = Country)) %>%
  hc_title(text = "Daily new cases per country") %>%
  hc_legend(
    align = "left",
    verticalAlign = "middle",
    layout = "vertical"
  )

hc5
```

Daily new cases per country

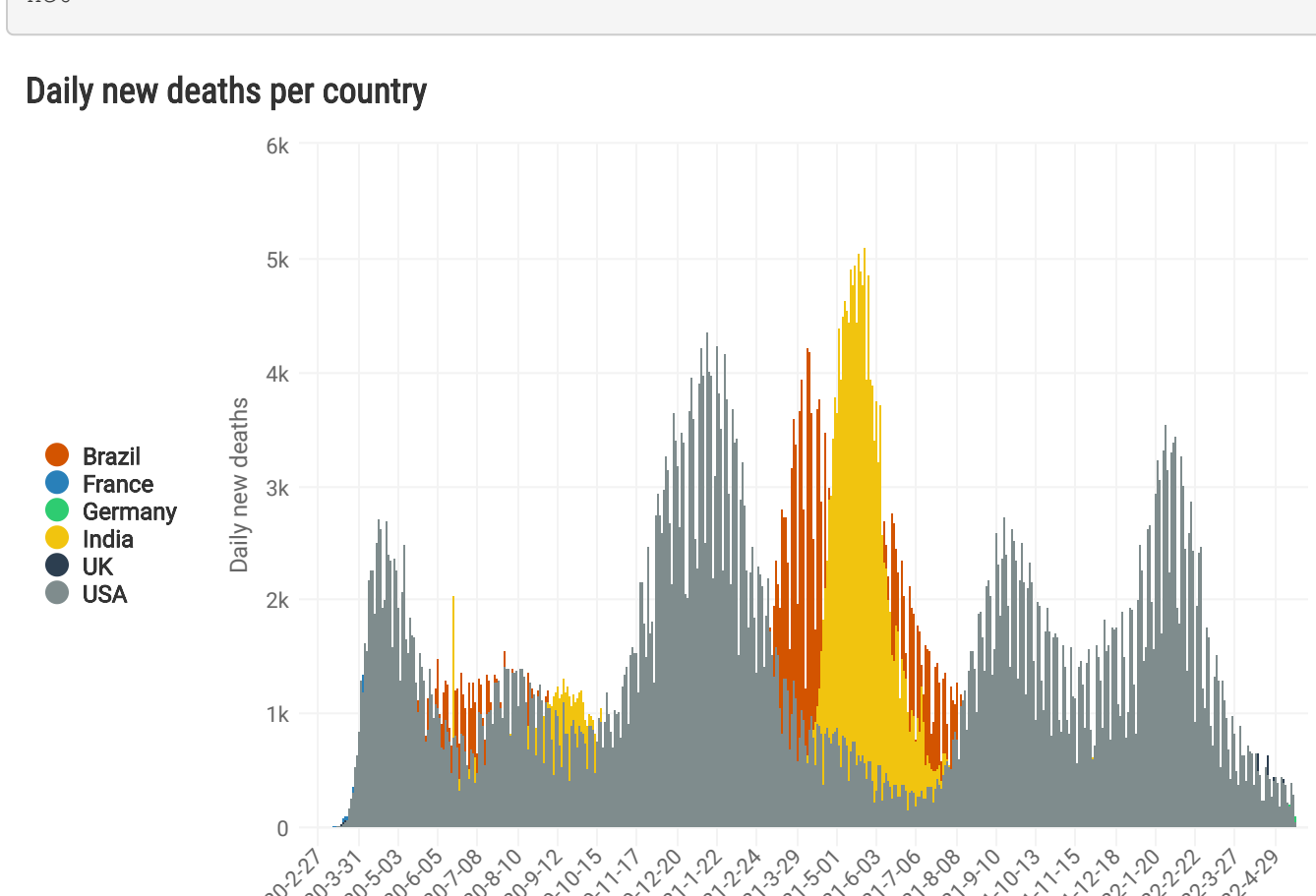


Finalment observem la taxa de mortalitat per país:

```
hc6 <- data_series %>%
  hc_hc('column', hcaes(x = Date, y = 'Daily new deaths', group = Country)) %>%
  hc_title(text = "Daily new deaths per country") %>%
  hc_legend(
    align = "left",
    verticalAlign = "middle",
    layout = "vertical"
  )

hc6
```

Daily new deaths per country



```
total_global <- total_global[total_global$Cumulative total cases' > 1000000,]
total_global$Death rate percentage' = total_global$Cumulative total deaths' / total_global$Cumulative total case
s * 100

total_global <- total_global %>%
  arrange(desc(Death rate percentage))
head(total_global)
```

Country	Cumulative total cases	Cumulative total deaths	Death rate percentage
1 Peru	371919	213023	5.96325
2 Mexico	5745652	324485	5.647140
3 Bulgaria	1161504	37045	3.189390
4 Tunisia	1041197	28575	2.744437
5 South Africa	3887449	100753	2.591751
6 Indonesia	6050519	156453	2.585778

Porcentaje mortalidad/caso en aquellos países con más de un millón de casos acumulados

```
highchart() %>%
  hc_title(text = "Death/case rate percentage per country") %>%
  hc_xAxis(categories = total_global$Country, title = 'Country') %>%
  hc_yAxis(multiples(create_axis(maxis = 2, height = c(2, 1))) %>%
  hc_add_series(total_global$Death rate percentage', name = 'Death rate') %>%
  hc_legend(
    align = "left",
    verticalAlign = "middle",
    layout = "vertical"
  )
```

Death/case rate percentage per country

