Covid19

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17/04 Sanidad se ve obligada a corregir la serie histórica ante las discrepancias en los datos sobre coronavirus.

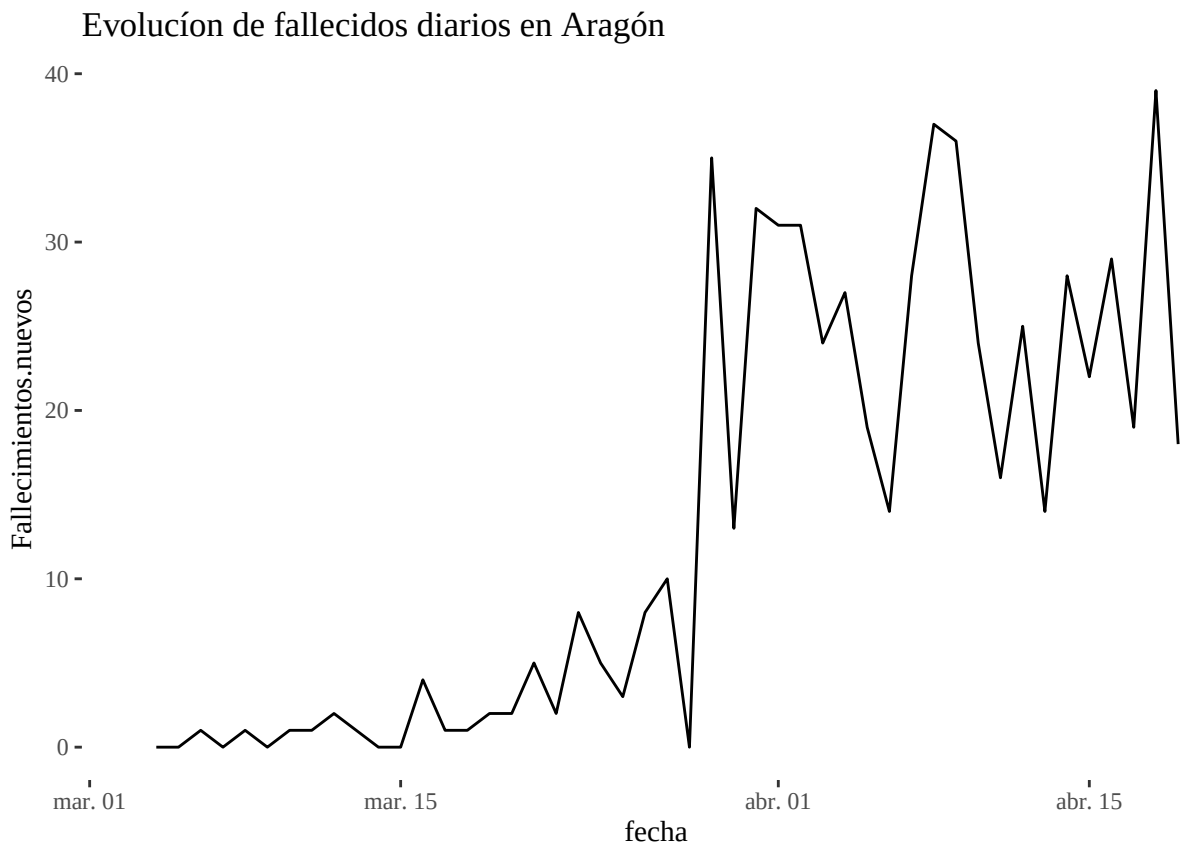
En este estudio queremos tener una visión por escalas desde nuestra Comunidad Autónoma Aragón, pasando a nivel nacional para finalmente hacer un análisis internacional.

Queremos entender el virus, su comportamiento e incidencia por países y la visualización de datos de cada uno de ellos en el tiempo.

Lamentablemente nos centraremos en la mayor parte del estudio en los fallecidos que a pesar de proporcionar cifras con retraso, son más fiables que las de contagios detectados de los que se estima que se detecta a nivel nacional una fracción inferior al 10%.

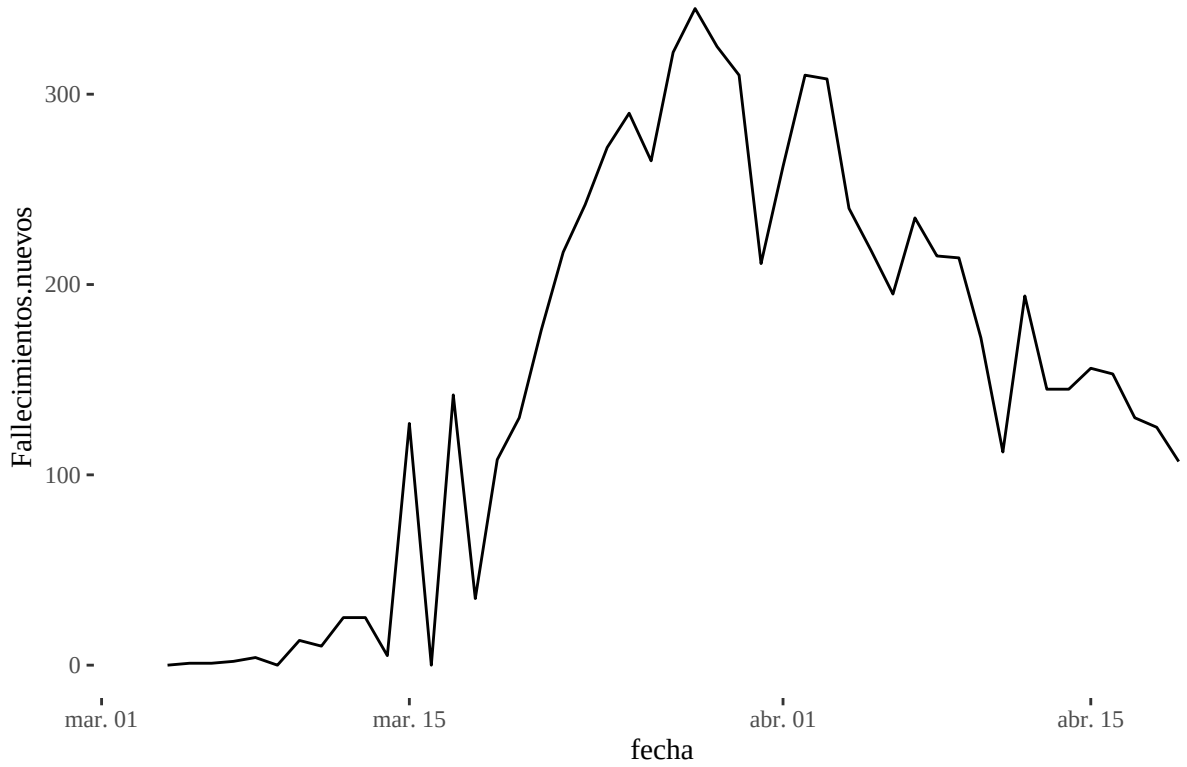
Veamos la evolucíon de fallecidos diarios en Aragón.

```
ggplot(covar,aes(x=fecha,y=Fallecimientos.nuevos),na.rm =TRUE)+geom_line()+theme_tufte()+
  ggtitle( "Evolucíon de fallecidos diarios en Aragón")
```

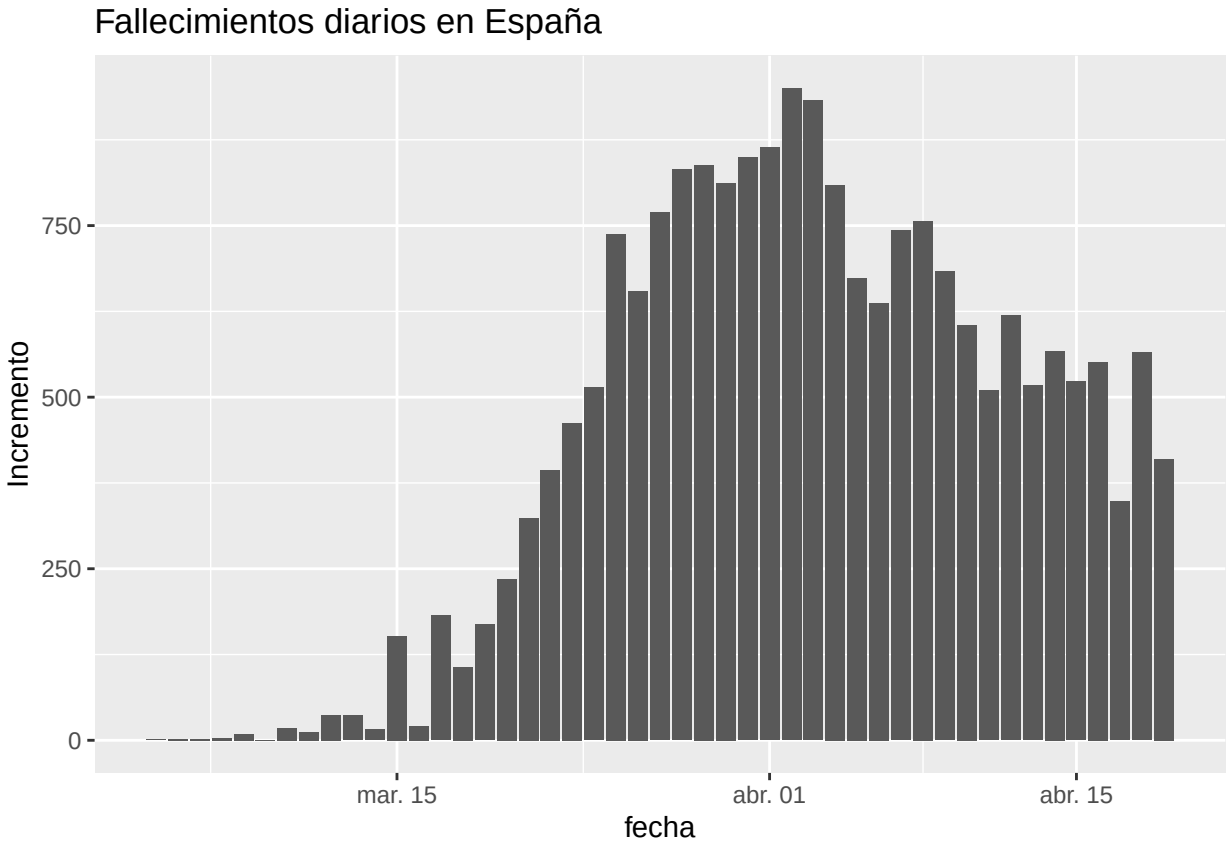


Veamos a continuación la evolución fallecidos diarios en la Comunidad de Madrid.

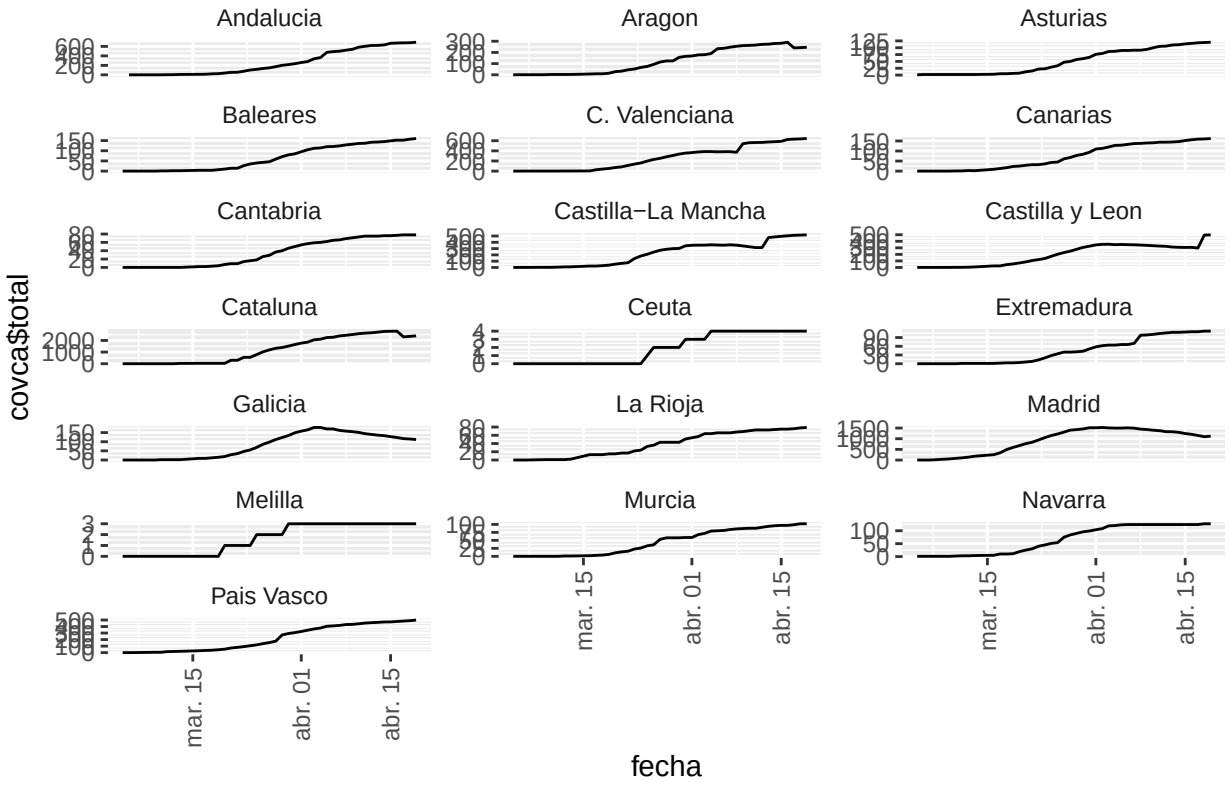
```
ggplot(covar,aes(x=fecha,y=Fallecimientos.nuevos),na.rm =TRUE)+geom_line()+theme_tufte()+
  ggtitle( "Fallecimientos diarios nuevos en la Comunidad de Madrid")
```



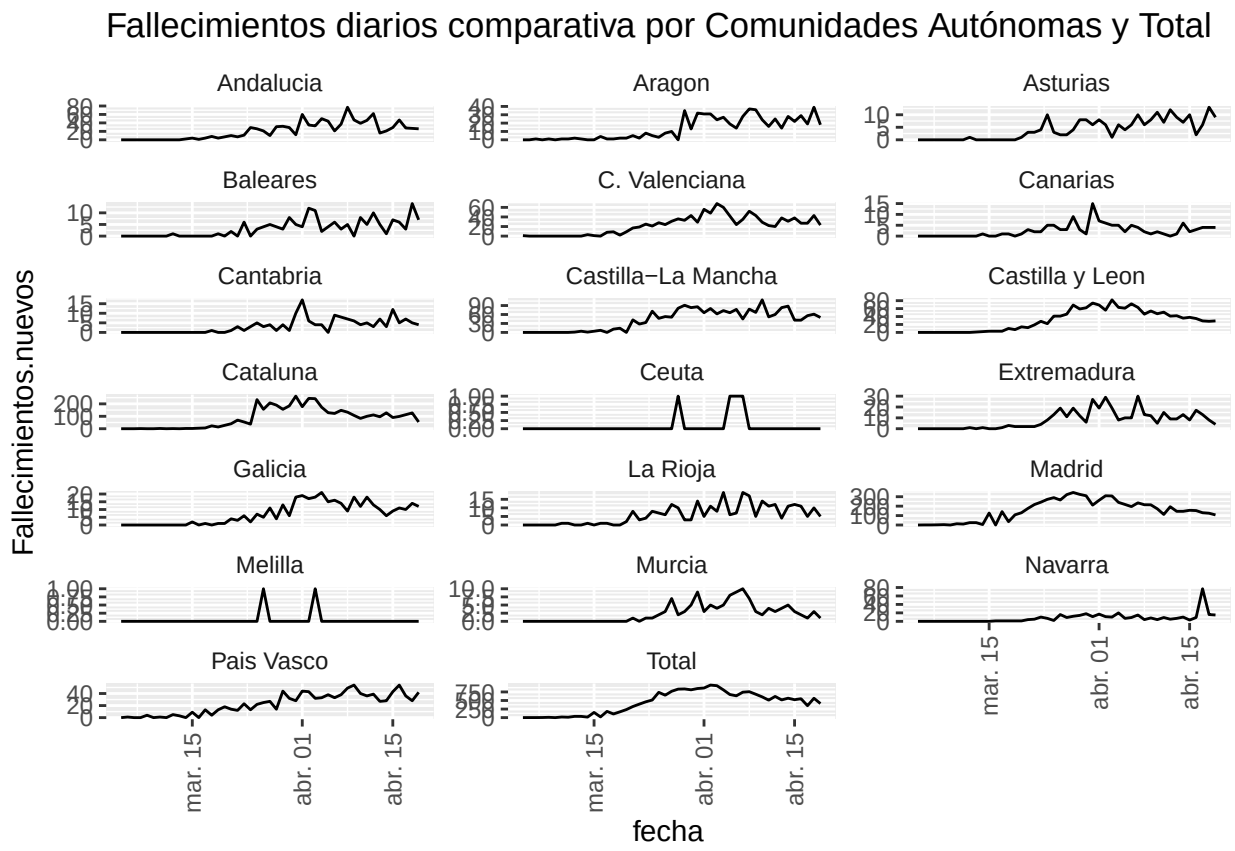

```
ccaa_covid19_fallecidos_long <- ccaa_covid19_fallecidos_long %>% filter( CCAA == "Total")
ggplot(data=ccaa_covid19_fallecidos_long, aes(x = fecha,y = Incremento)) +
  geom_bar(stat="identity", position="dodge")+
  ggtitle( "Fallecimientos diarios en España")
```




```
covca<-na.omit(covca)
ggplot(covca, aes(fecha,covca$total,group = 1)) +
  geom_line() +
  facet_wrap(vars(CCAA), scales = "free_y", ncol = 3, strip.position = "top") +
  theme(strip.background = element_blank(), strip.placement = "outside")+
  theme(axis.text.x=element_text(angle=90,hjust=1,vjust=0.5))+
  ggtitle( "Pacientes totales en Ucis comparativa por Comunidades Autónomas")
```



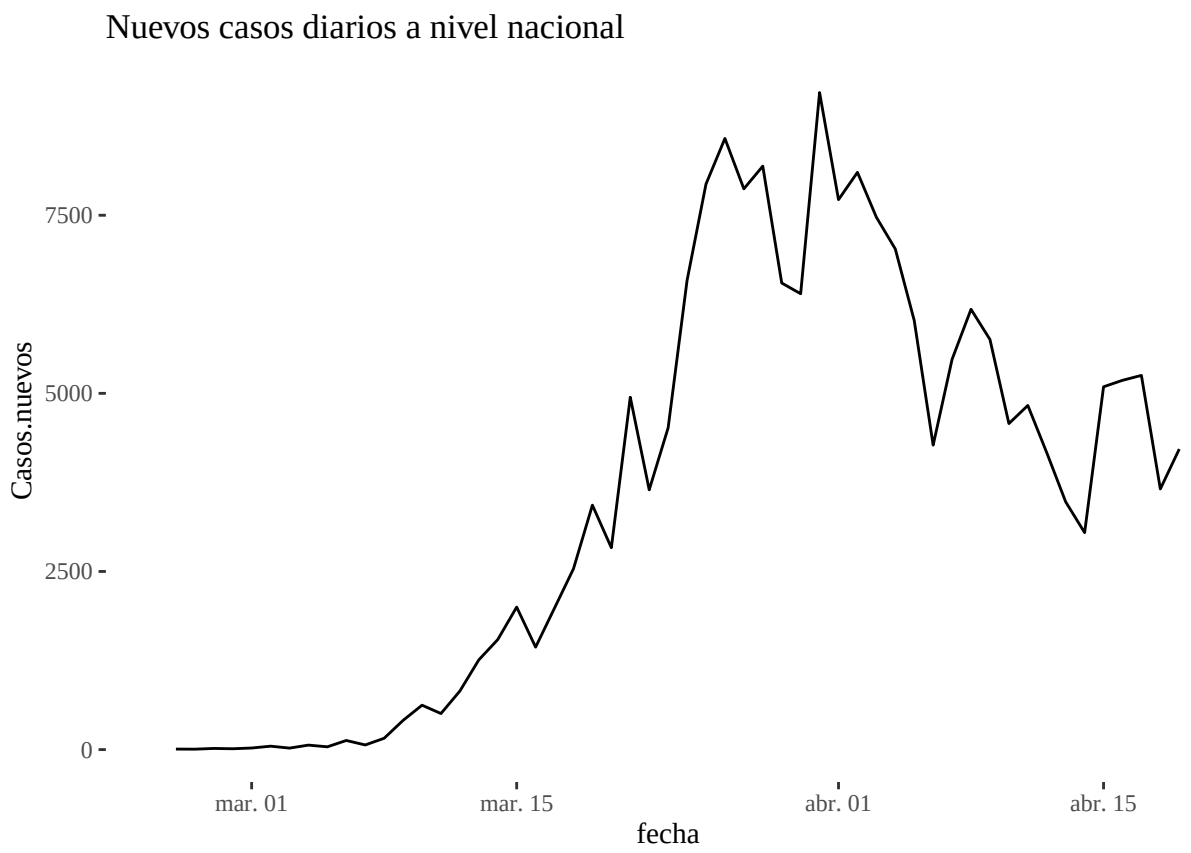

```
covca<-na.omit(covca)
ggplot(covca, aes(fecha,Fallecimientos.nuevos,group = 1)) +
  geom_line() +
  facet_wrap(vars(CCAA), scales = "free_y", ncol = 3, strip.position = "top") +
  theme(strip.background = element_blank(), strip.placement = "outside")+
  theme(axis.text.x=element_text(angle=90,hjust=1,vjust=0.5))+
  ggtitle( "Fallecimientos diarios comparativa por Comunidades Autónomas y Total")
```



Ahora continuaremos con el analisis a nivel nacional.

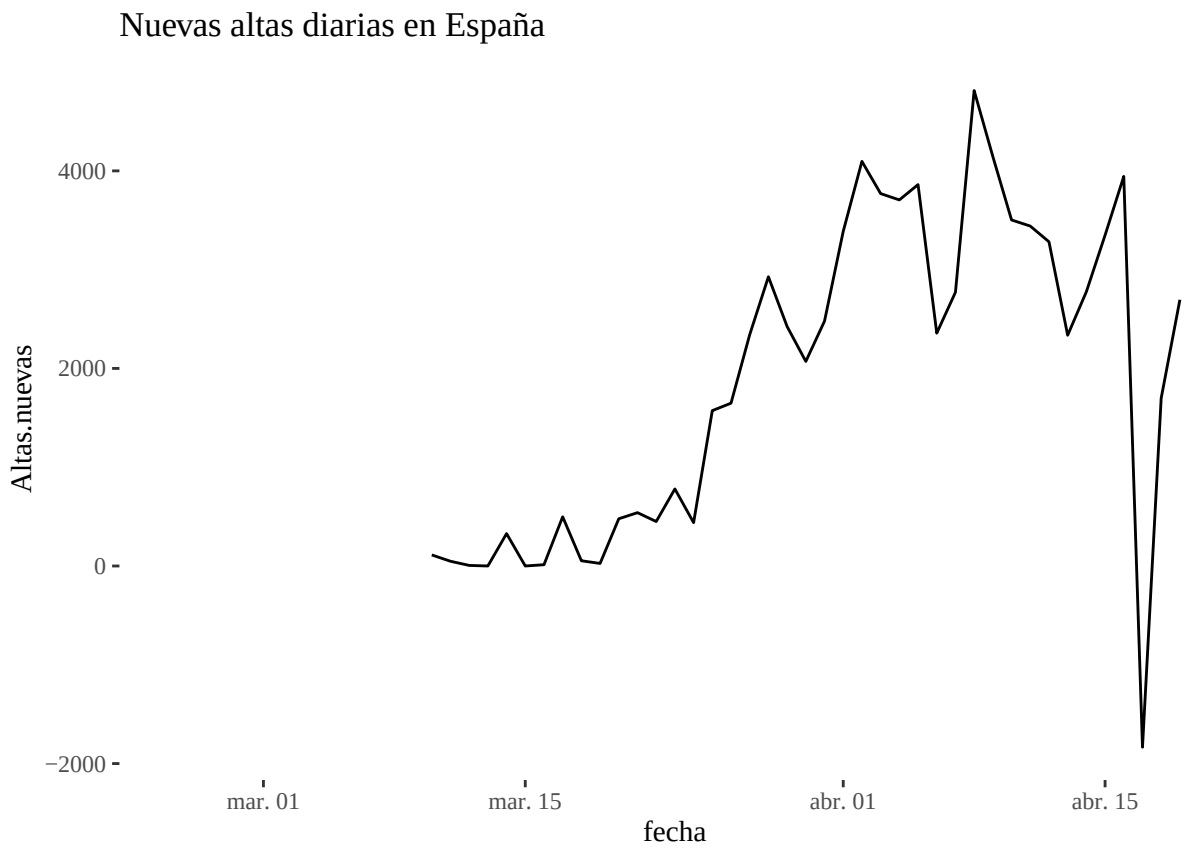
Nuevos casos diarios a nivel nacional.

```
ggplot(covsp,aes(x=fecha,y=Casos.nuevos),na.rm = TRUE)+geom_line()+theme_tufte()+
  ggtitle( "Nuevos casos diarios a nivel nacional")
```



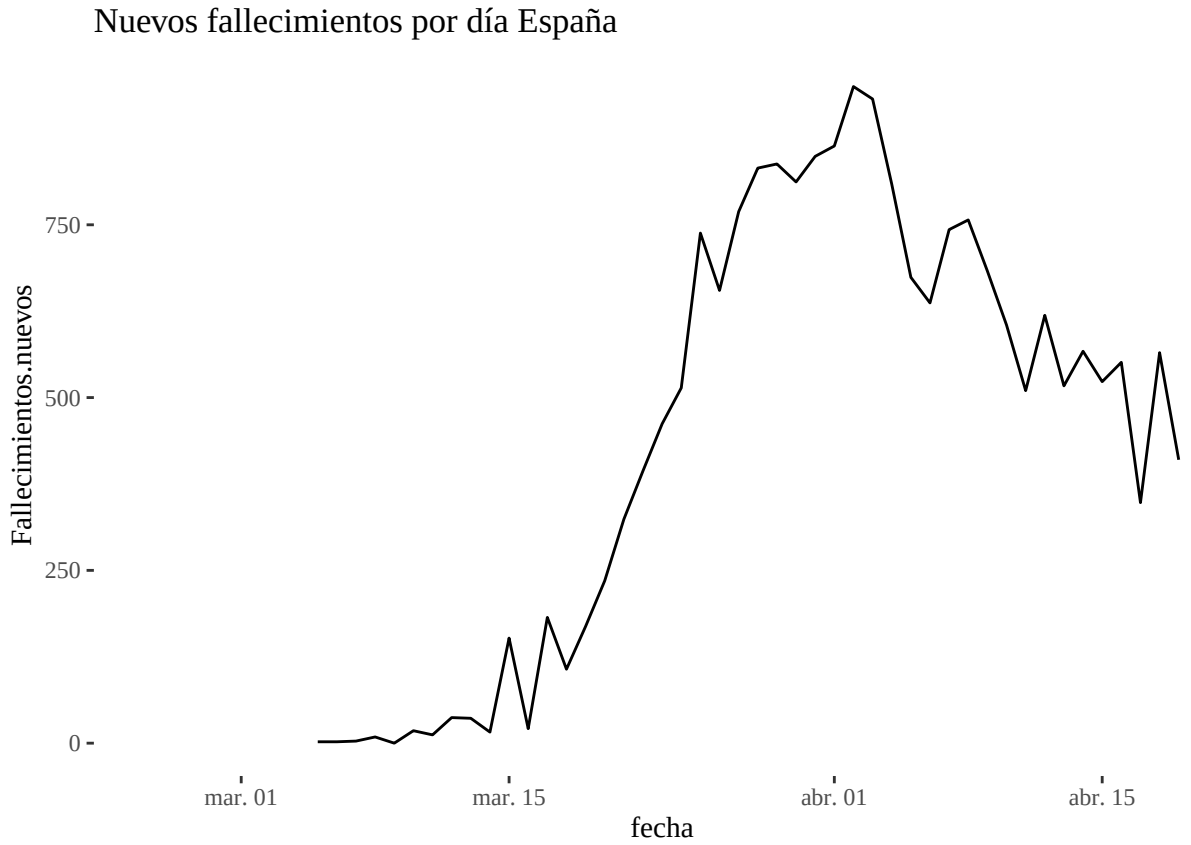
Las nuevas altas diarias en España.

```
ggplot(covsp,aes(x=fecha,y=Altas.nuevas),na.rm = TRUE)+geom_line()+theme_tufte()+
  ggtitle( "Nuevas altas diarias en España")
```



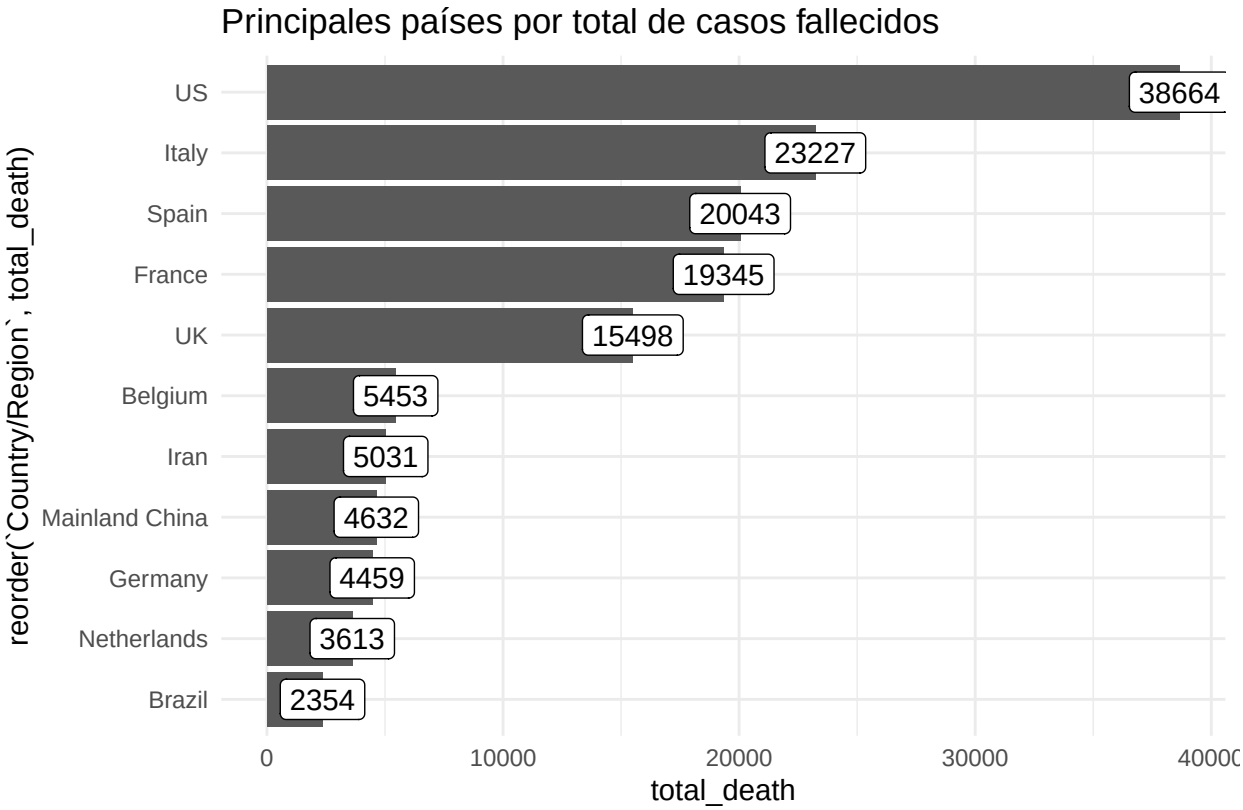
Los nuevos fallecimientos por día España.

```
ggplot(covsp,aes(x=fecha,y=Fallecimientos.nuevos),na.rm = TRUE)+geom_line()+theme_tufte()+
ggtitle( "Nuevos fallecimientos por día España")
```



Fallecidos por países.

```
 corona28 <- corona_latest
corona28_country <- corona28  %>%
group_by(`Country/Region`)  %>%
summarize(total_death = sum(Deaths),
          total_recovered = sum(Recovered),
          total_confirmed = sum(Confirmed))  %>%
mutate(recovery_rate = round(total_recovered / total_confirmed,2))
corona28_country  %>%
filter(!`Country/Region` %in% 'Others')  %>%
arrange(desc(total_death)) %>%
head(11)  %>%
ggplot() + geom_bar(aes(x=reorder(`Country/Region`, total_death),y= total_death), stat = "identity") +
geom_label(aes(`Country/Region`, total_death, label = total_death)) +
coord_flip() +
theme_minimal() +
labs(title =  "Principales países por total de casos fallecidos",
    caption = "Fuente: Kaggle")
```



Letalidad descendente en paises con más de 136 fallecidos.

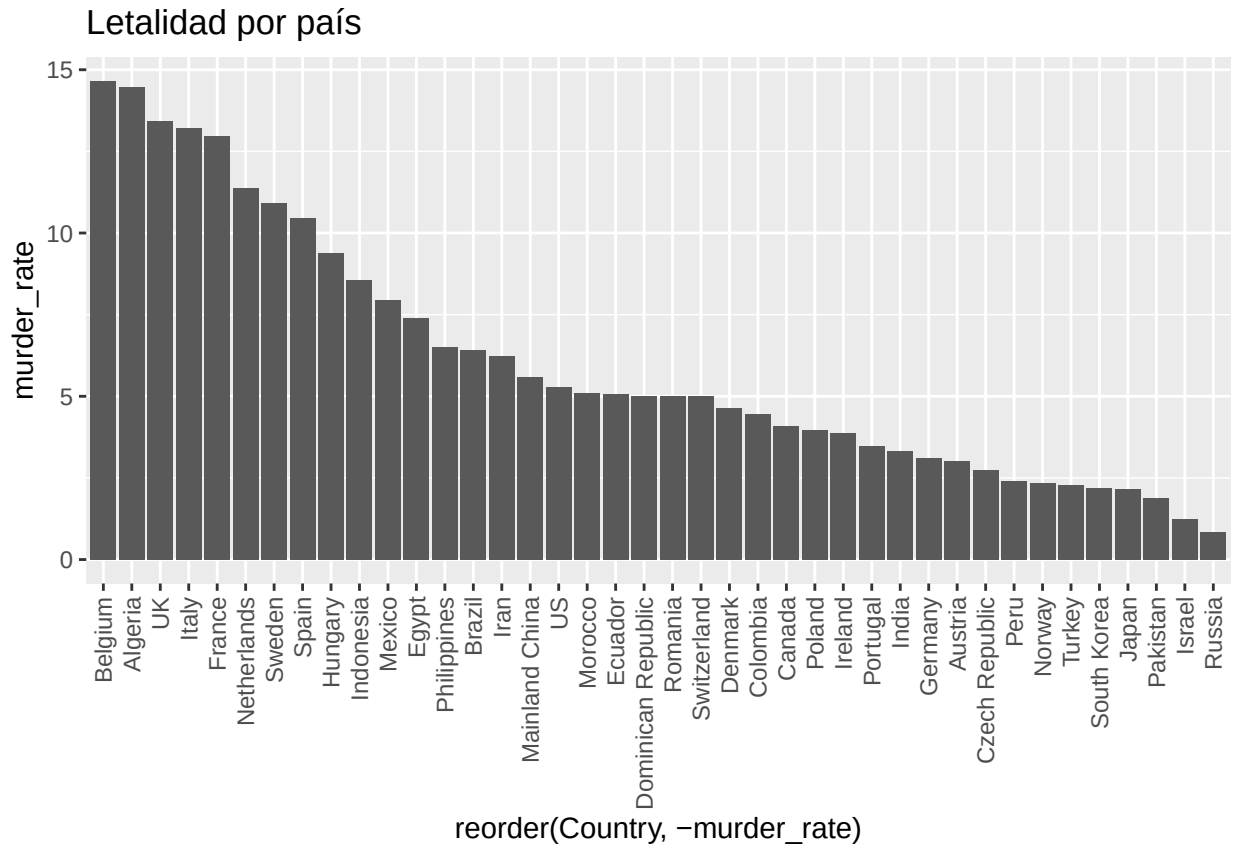
```
filtered <- filter(df, df$Date==max(df$Date)) %>% group_by(Country) %>%
summarise(Confirmed =  sum(Confirmed) , Deaths = sum(Deaths) , Recovered = sum(Recovered))
murder_rate <- filtered$Deaths / filtered$Confirmed * 100
filtered$murder_rate <- murder_rate
filtered<- filtered%>% filter (Deaths >= 136)
filtered <- filtered[order(filtered$murder_rate,decreasing = TRUE),]
filtered[0:10,]
```

```
## # A tibble: 10 x 5
##    Country     Confirmed Deaths Recovered murder_rate
##    <fct>           <dbl>  <dbl>     <dbl>       <dbl>
##  1 Belgium         37183   5453      8348       14.7
##  2 Algeria          2534    367       894       14.5
##  3 UK             115314  15498       414       13.4
##  4 Italy          175925  23227     44927       13.2
##  5 France         149149  19345     36587       13.0
##  6 Netherlands     31766   3613       317       11.4
##  7 Sweden          13822   1511       550       10.9
##  8 Spain          191726  20043     74797       10.5
##  9 Hungary          1834    172       231        9.38
## 10 Indonesia        6248    535       631        8.56
```

```
filtered <- filtered[order(filtered$murder_rate),]
filtered[0:10,]
```

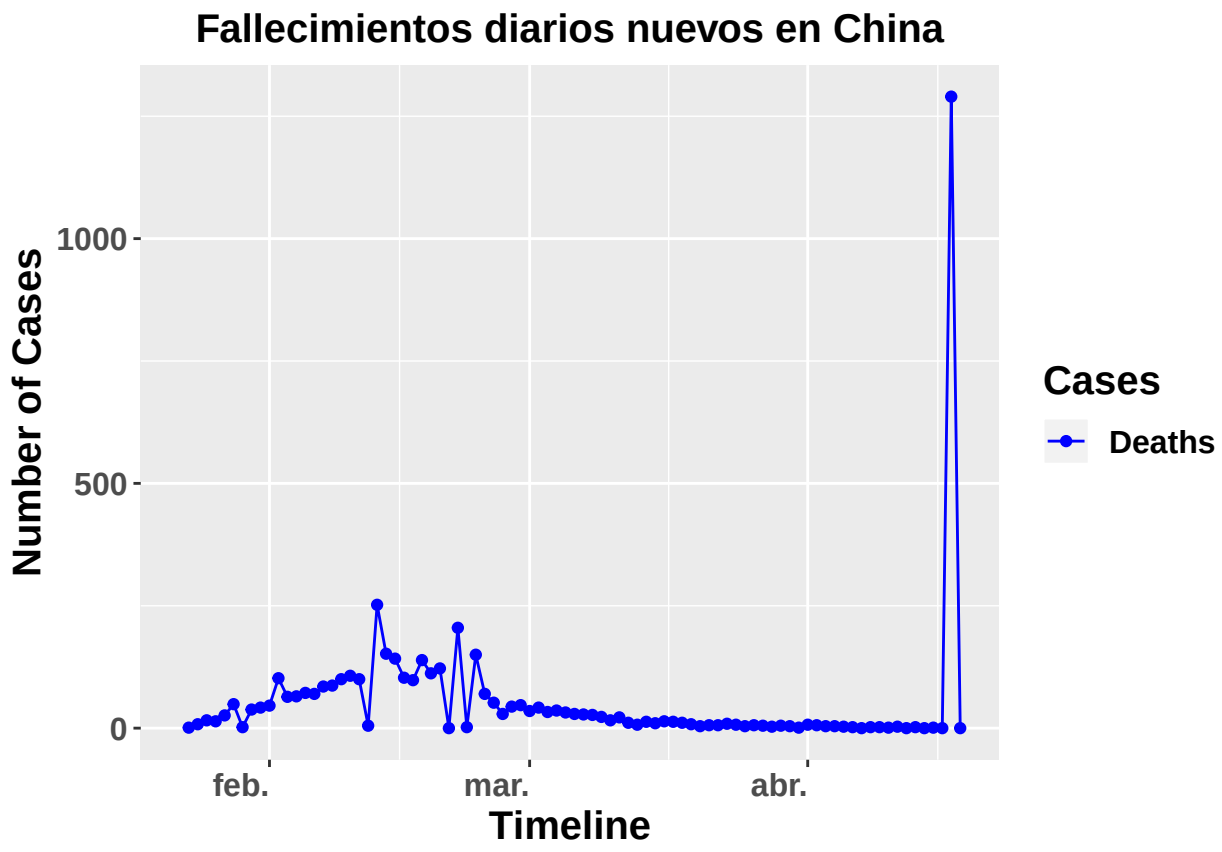
```
## # A tibble: 10 x 5
##    Country        Confirmed Deaths Recovered murder_rate
##    <fct>              <dbl>  <dbl>     <dbl>       <dbl>
##  1 Russia             36793    313      3057       0.851
##  2 Israel             13265    164      3456       1.24
##  3 Pakistan            7638    143      1832       1.87
##  4 Japan              10296    222      1069       2.16
##  5 South Korea        10653    232      7937       2.18
##  6 Turkey             82329   1890     10453       2.30
##  7 Norway              7036    164        32       2.33
##  8 Peru               14420    348      6684       2.41
##  9 Czech Republic      6606    181      1227       2.74
## 10 Austria            14671    443     10214       3.02
```

```
ggplot(data=filtered, aes(x=reorder(Country,-murder_rate), y=murder_rate)) +
    geom_bar(stat="identity", position="dodge")+ theme(axis.text.x=element_text(angle=90,hjust=1,vjust=0
 ggtitle("Letalidad por país")
```



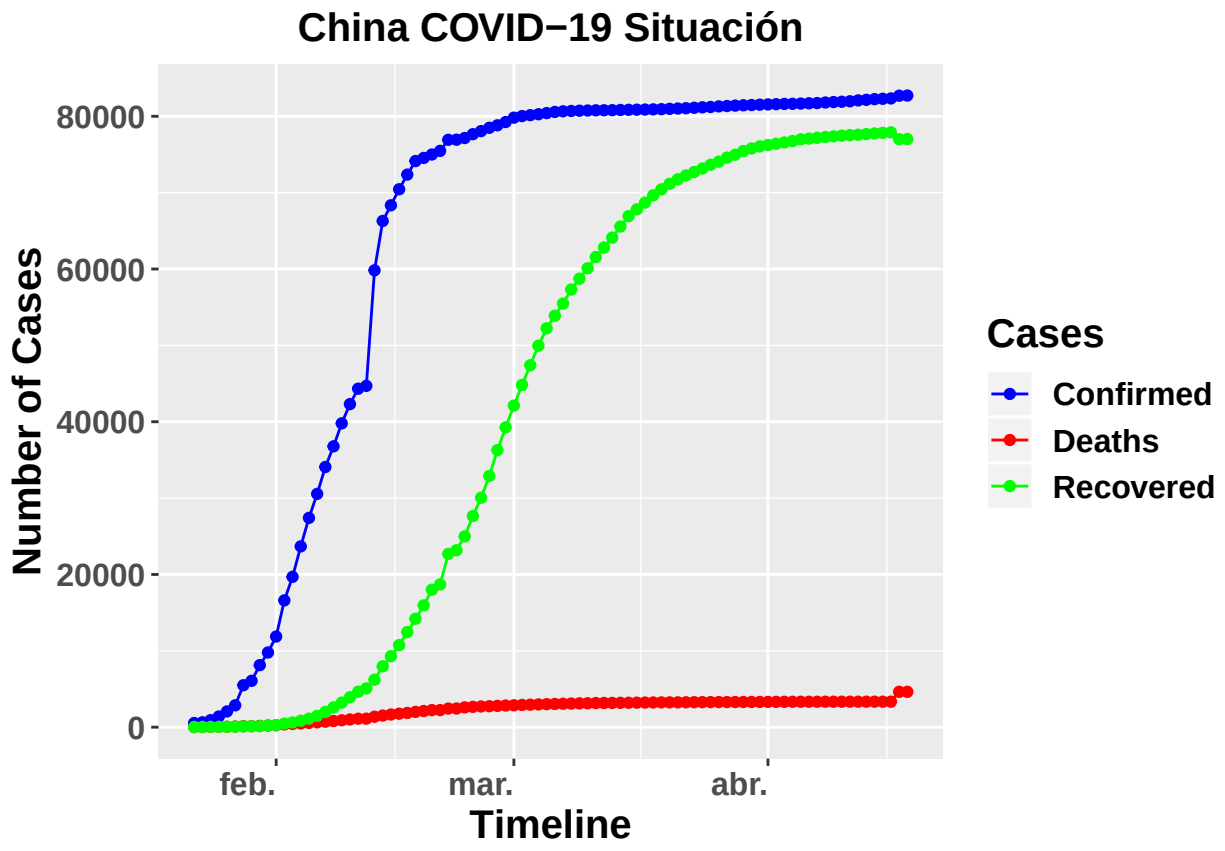

```
China <- filter(df,Country == "Mainland China") %>% group_by(Date) %>%
summarise(Confirmed =  sum(Confirmed) , Deaths = sum(Deaths), Recovered = sum(Recovered)) %>%
gather(key = Cases, value = Count, c(Confirmed,Deaths,Recovered))
```

```
China2 <- filter(China, Cases =="Deaths",)
China2$Fallecimientos.nuevos <- c( NA, diff(China2$Count))

China_plot2<- ggplot(China2, aes(x= Date, y= Fallecimientos.nuevos ,fill = Cases, color = Cases , group=
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","re
           labs(x="Timeline", y="Number of Cases",title = "Fallecimientos diarios nuevos en China", fill
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

China_plot2
```



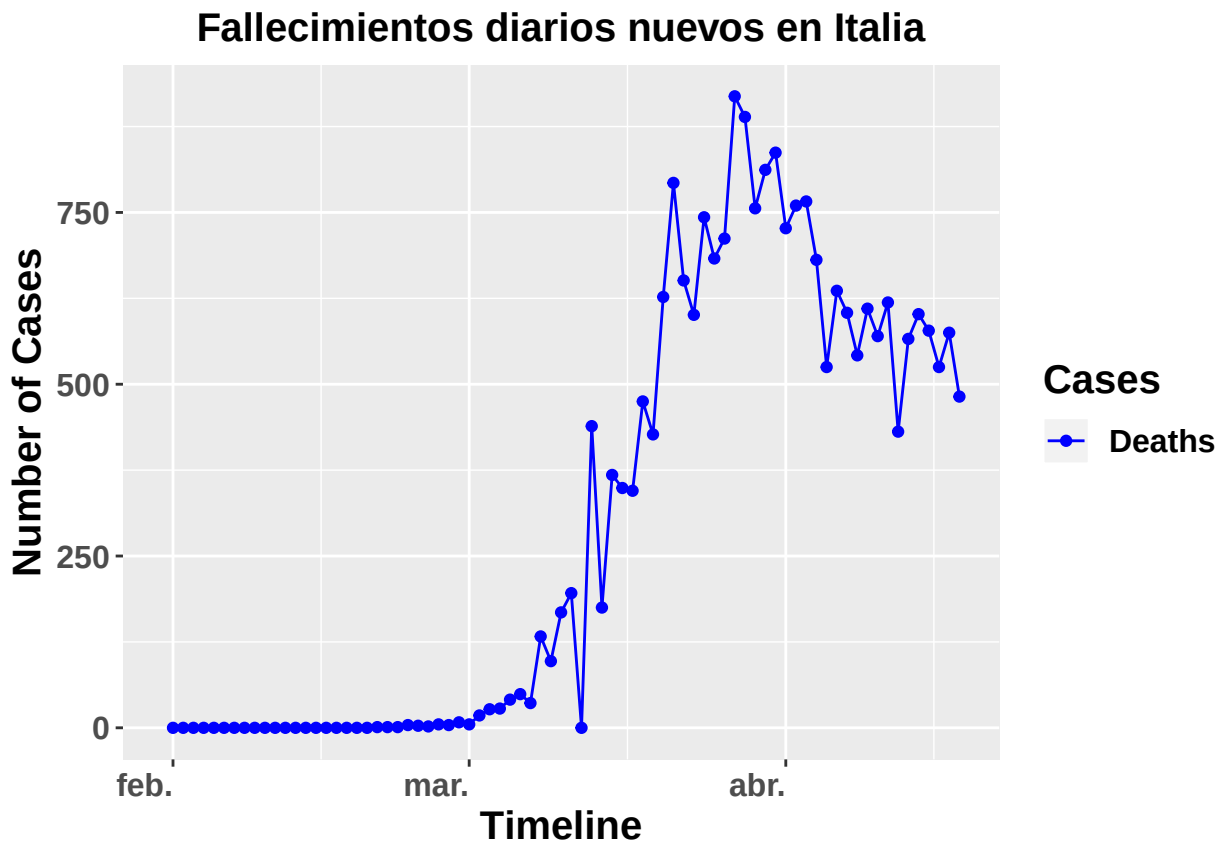

```
#Line Plot

China_plot<- ggplot(China, aes(x= Date, y= Count ,fill = Cases, color = Cases , group=Cases ))+
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","re
           labs(x="Timeline", y="Number of Cases",title = "China COVID-19 Situación", fill = 'Cases')+
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))
```

```
China_plot
```

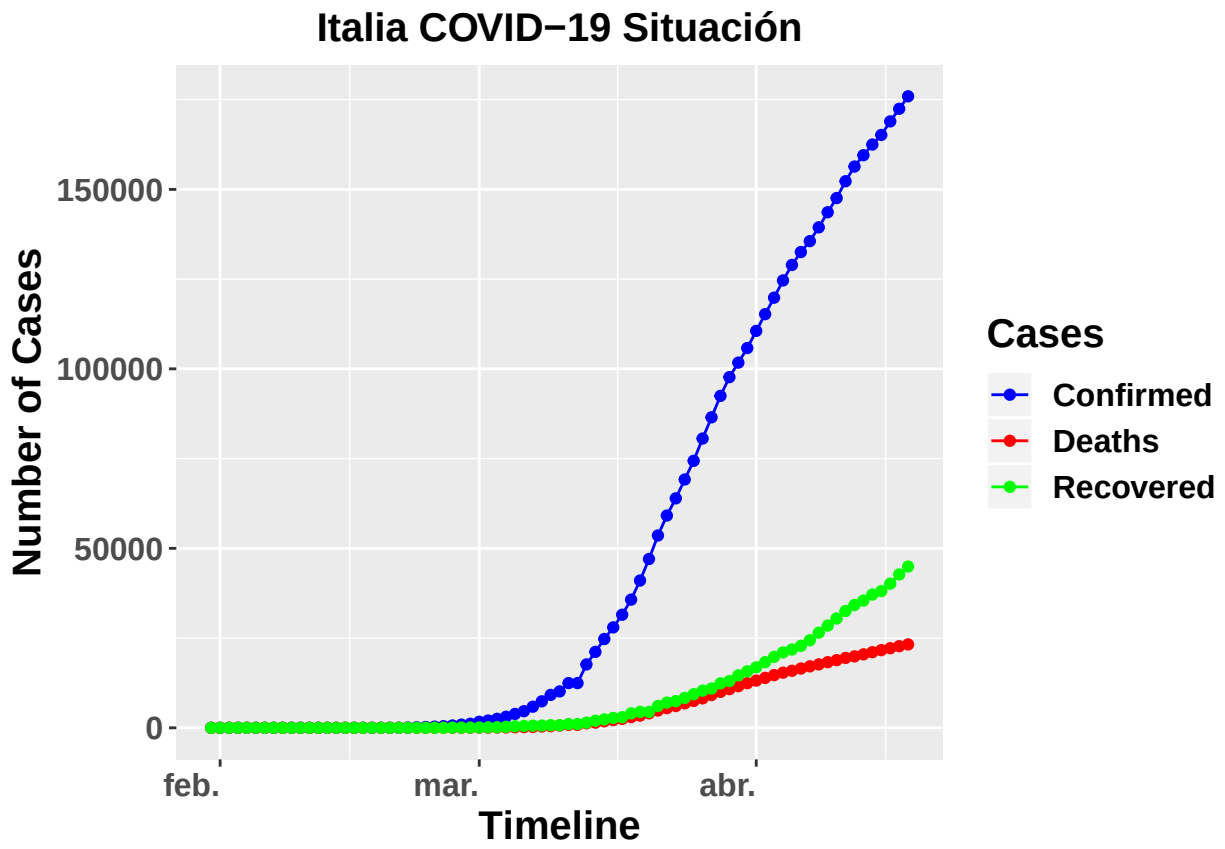



```
italy <- filter(df,Country == "Italy") %>% group_by(Date) %>%
summarise(Confirmed =  sum(Confirmed) , Deaths = sum(Deaths), Recovered = sum(Recovered)) %>%
gather(key = Cases, value = Count, c(Confirmed,Deaths,Recovered))
```

```
italy2 <- filter(italy, Cases =="Deaths",)
italy2$Fallecimientos.nuevos <- c( NA, diff(italy2$Count))

italy_plot2<- ggplot(italy2, aes(x= Date, y= Fallecimientos.nuevos ,fill = Cases, color = Cases , group=
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","re
           labs(x="Timeline", y="Number of Cases",title = "Fallecimientos diarios nuevos en Italia", fi
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

italy_plot2
```

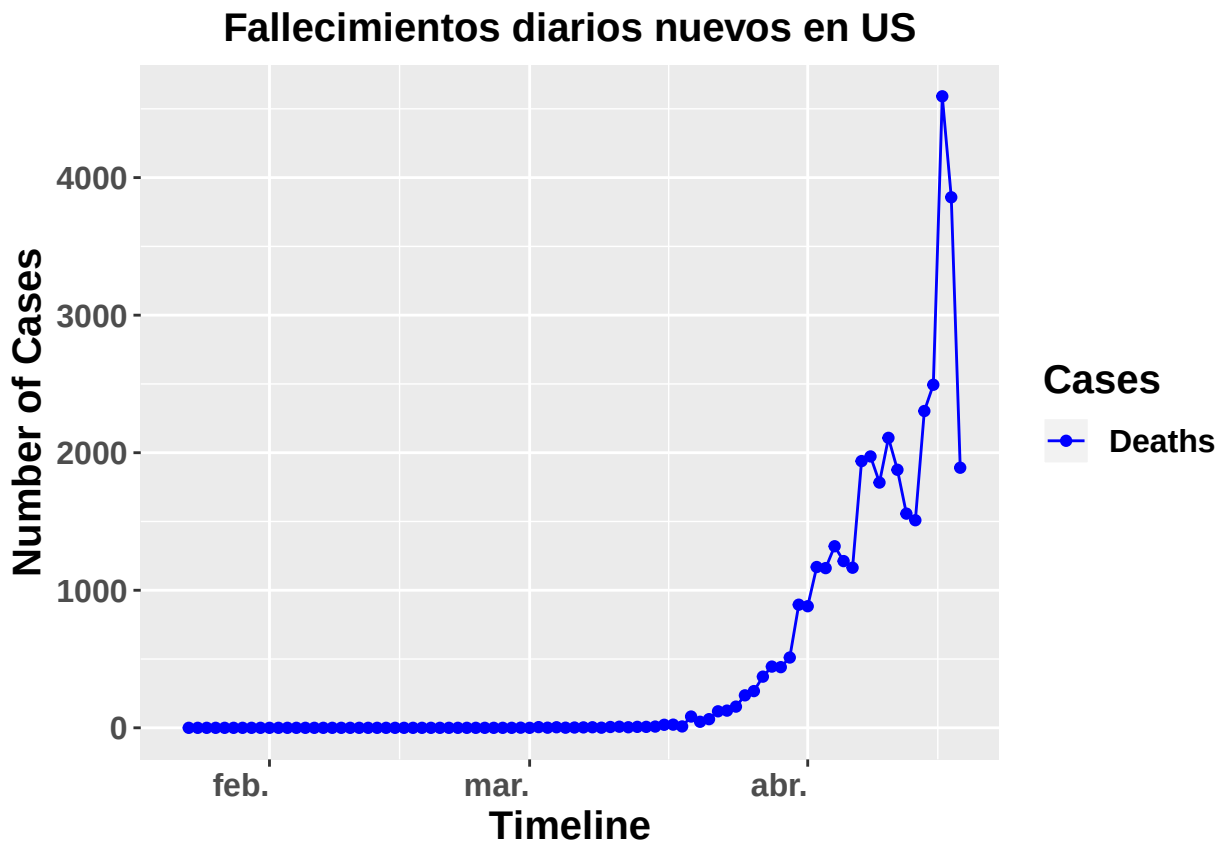



```
#Line Plot
Italy_plot <- ggplot(italy, aes(x= Date, y= Count ,fill = Cases, color = Cases , group=Cases ))+
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","r
           labs(x="Timeline", y="Number of Cases",title = "Italia COVID-19 Situación", fill = 'Cases')+
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

Italy_plot
```

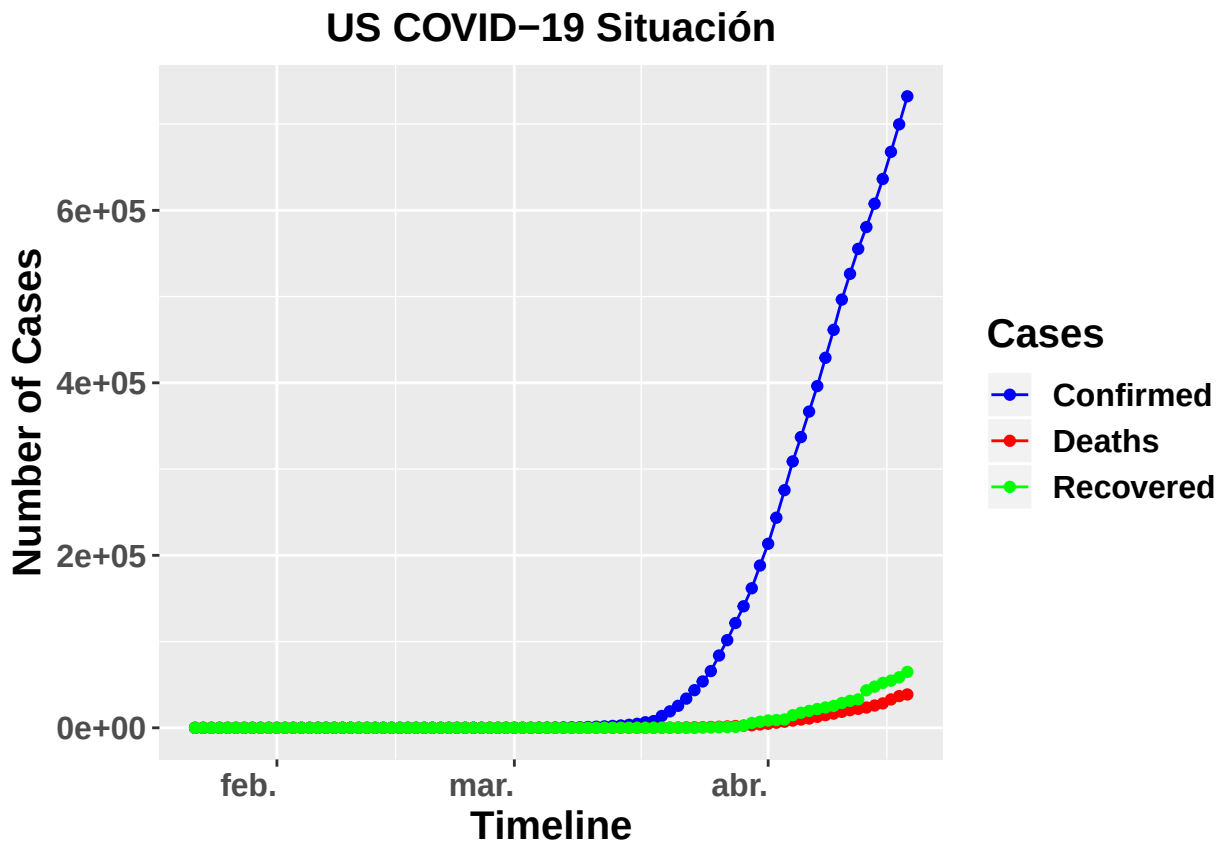



```
US <- filter(df,Country == "US") %>% group_by(Date) %>%
summarise(Confirmed =  sum(Confirmed) , Deaths = sum(Deaths), Recovered = sum(Recovered)) %>%
gather(key = Cases, value = Count, c(Confirmed,Deaths,Recovered))
```

```
US2 <- filter(US, Cases =="Deaths",)
US2$Fallecimientos.nuevos <- c( NA, diff(US2$Count))

US_plot2<- ggplot(US2, aes(x= Date, y= Fallecimientos.nuevos ,fill = Cases, color = Cases , group=Cases
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","r
           labs(x="Timeline", y="Number of Cases",title = "Fallecimientos diarios nuevos en US", fill =
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

US_plot2
```

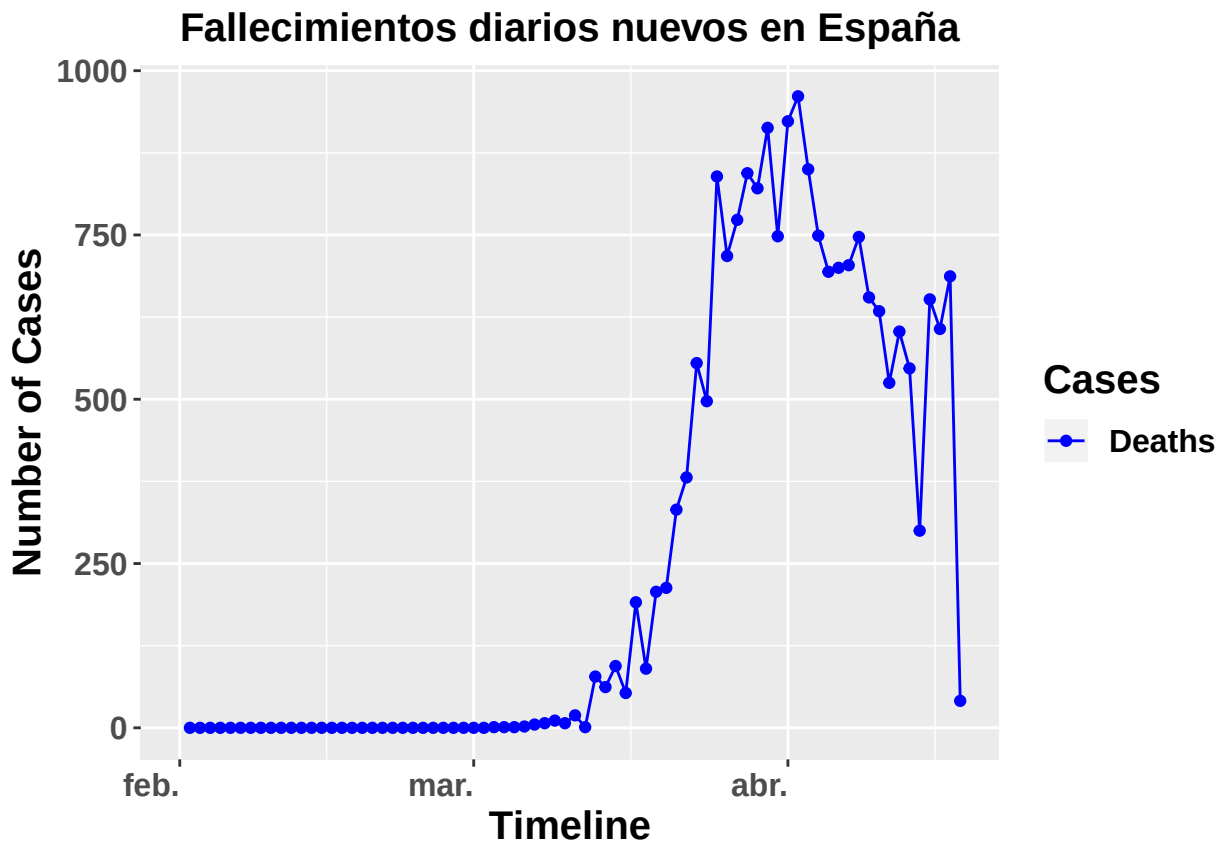



```
#Line Plot
US_plot <- ggplot(US, aes(x= Date, y= Count ,fill = Cases, color = Cases , group=Cases ))+
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","r
           labs(x="Timeline", y="Number of Cases",title = "US COVID-19 Situación", fill = 'Cases')+
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

US_plot
```

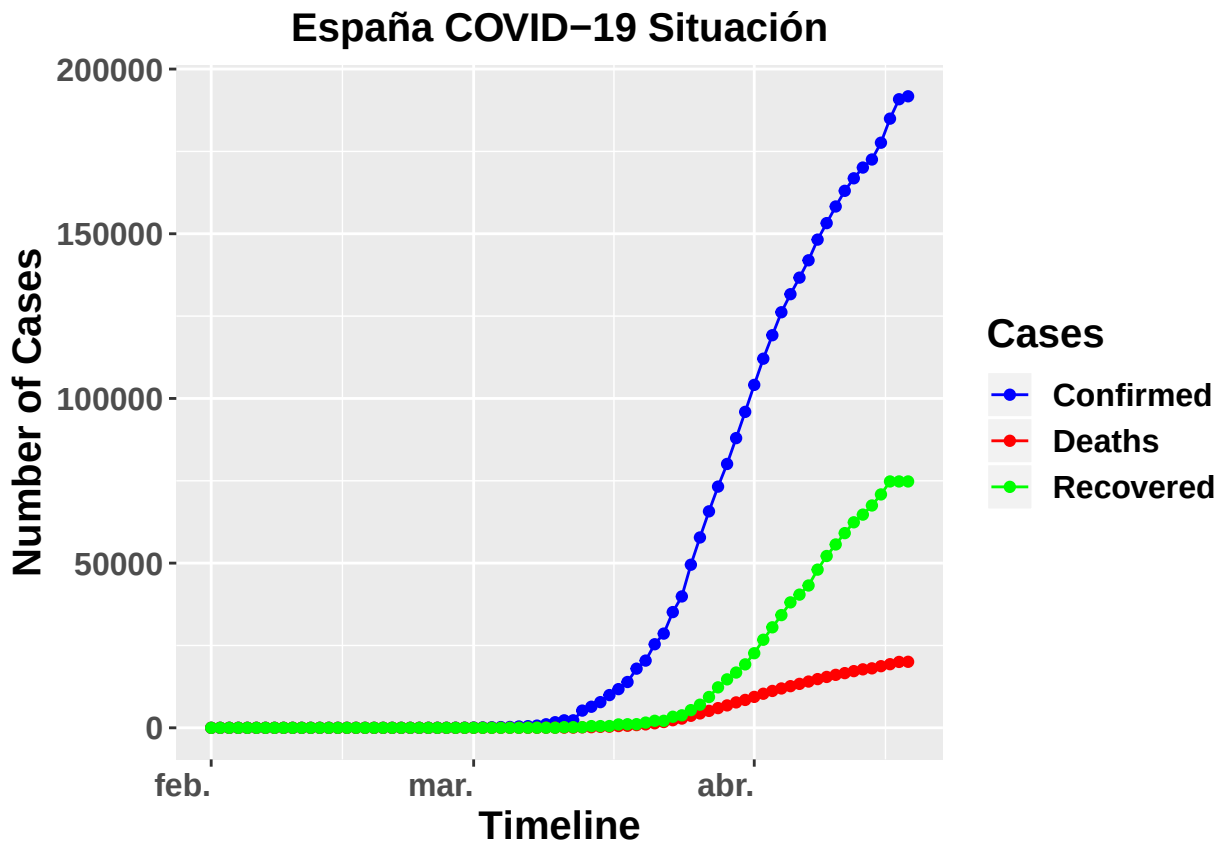



```
Spain <- filter(df,Country == "Spain") %>% group_by(Date) %>%
summarise(Confirmed =  sum(Confirmed) , Deaths = sum(Deaths), Recovered = sum(Recovered)) %>%
gather(key = Cases, value = Count, c(Confirmed,Deaths,Recovered))
```

```
Spain2 <- filter(Spain, Cases =="Deaths",)
Spain2$Fallecimientos.nuevos <- c( NA, diff(Spain2$Count))

Spain_plot2<- ggplot(Spain2, aes(x= Date, y= Fallecimientos.nuevos ,fill = Cases, color = Cases , group=
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","re
           labs(x="Timeline", y="Number of Cases",title = "Fallecimientos diarios nuevos en España", fi
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

Spain_plot2
```

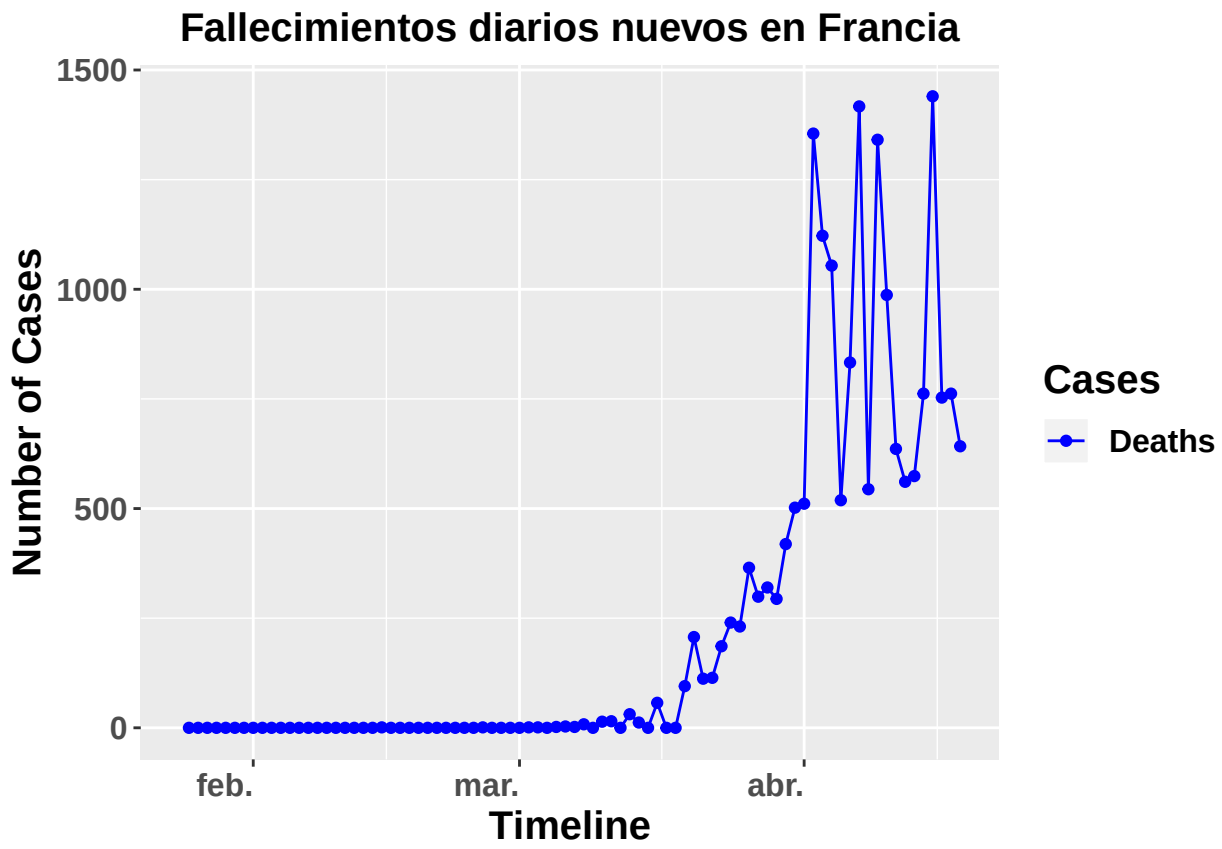



```
#Line Plot
Spain_plot <- ggplot(Spain, aes(x= Date, y= Count ,fill = Cases, color = Cases , group=Cases ))+
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","r
           labs(x="Timeline", y="Number of Cases",title = "España COVID-19 Situación", fill = 'Cases')+
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

Spain_plot
```

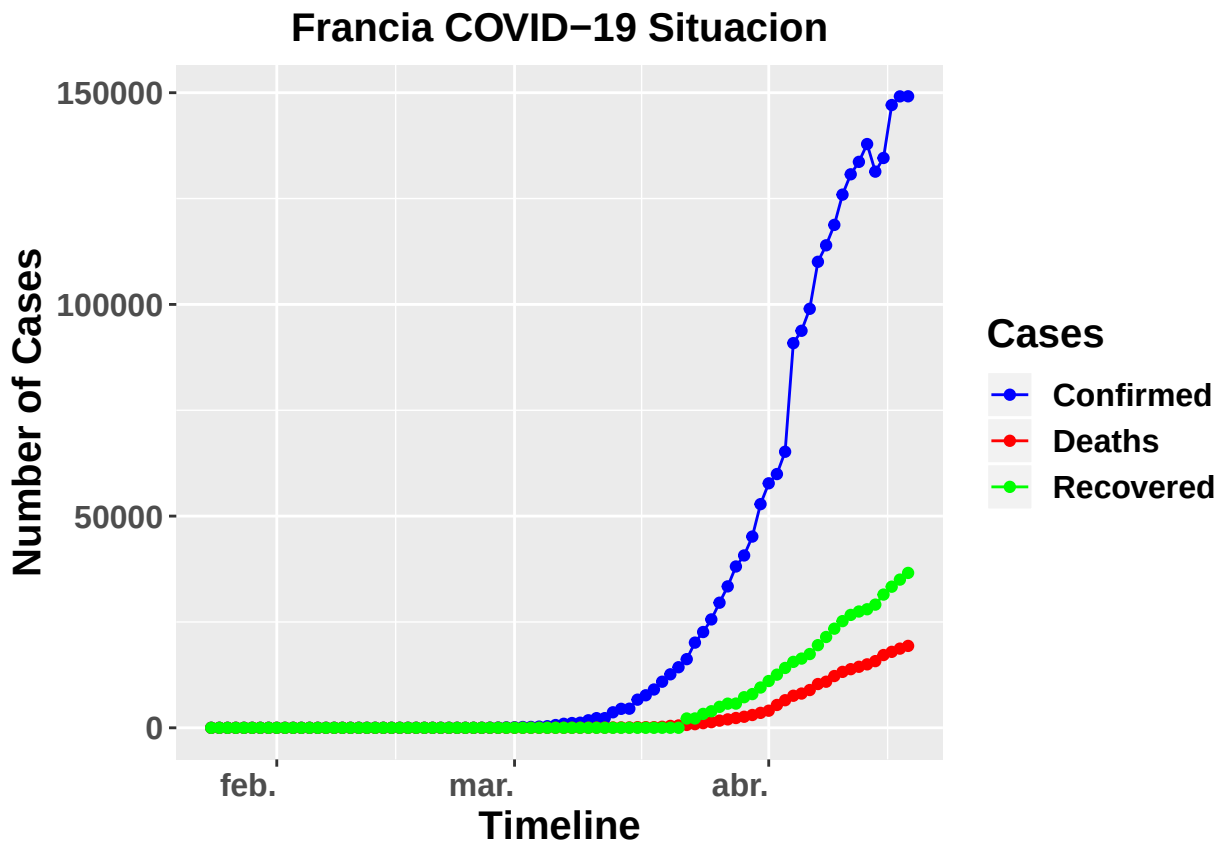



```
France <- filter(df,Country == "France") %>% group_by(Date) %>%
summarise(Confirmed =  sum(Confirmed) , Deaths = sum(Deaths), Recovered = sum(Recovered)) %>%
gather(key = Cases, value = Count, c(Confirmed,Deaths,Recovered))
```

```
France2 <- filter(France, Cases =="Deaths",)
France2$Fallecimientos.nuevos <- c( NA, diff(France2$Count))
France_plot2<- ggplot(France2, aes(x= Date, y= Fallecimientos.nuevos ,fill = Cases, color = Cases , grou
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","re
           labs(x="Timeline", y="Number of Cases",title = "Fallecimientos diarios nuevos en Francia", fi
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

France_plot2
```

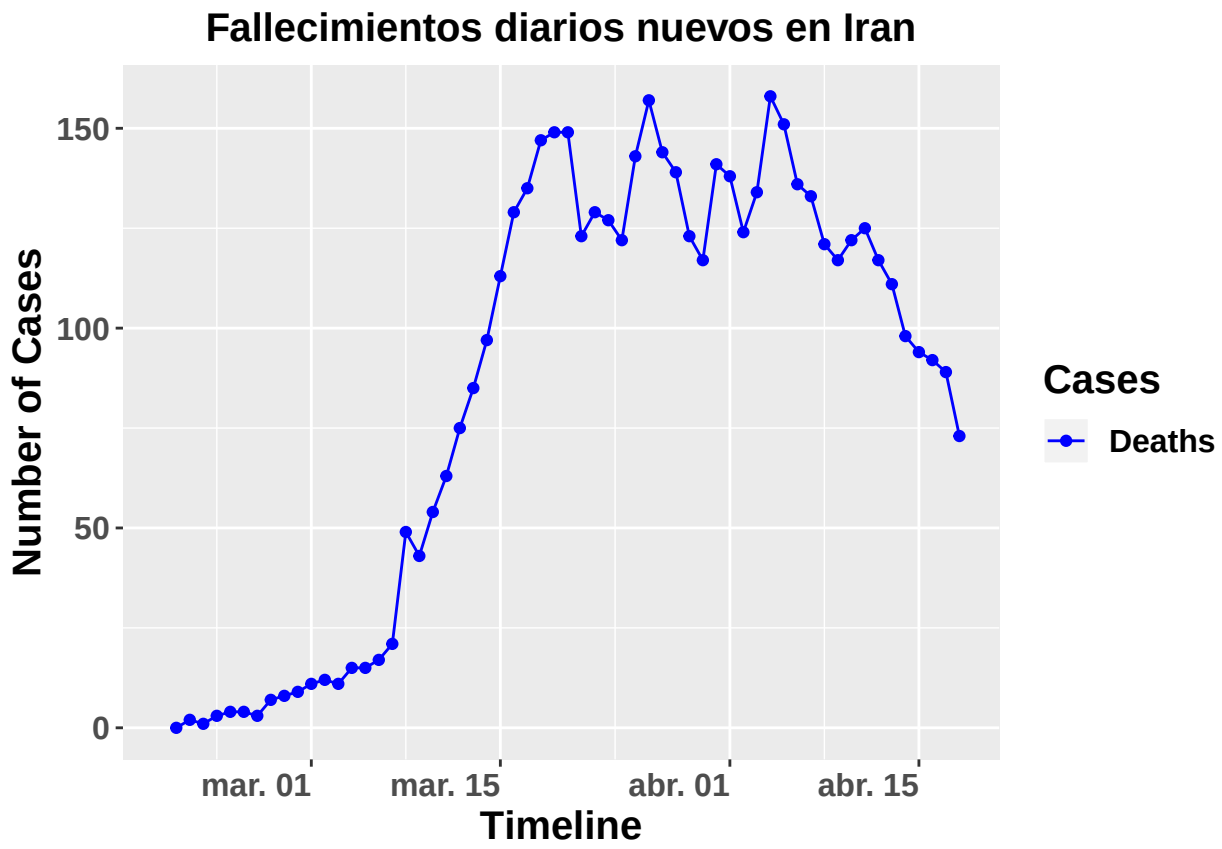



```
#Line Plot
France_plot <- ggplot(France, aes(x= Date, y= Count ,fill = Cases, color = Cases , group=Cases ))+
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","r
           labs(x="Timeline", y="Number of Cases",title = "Francia COVID-19 Situacion", fill = 'Cases')
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

France_plot
```

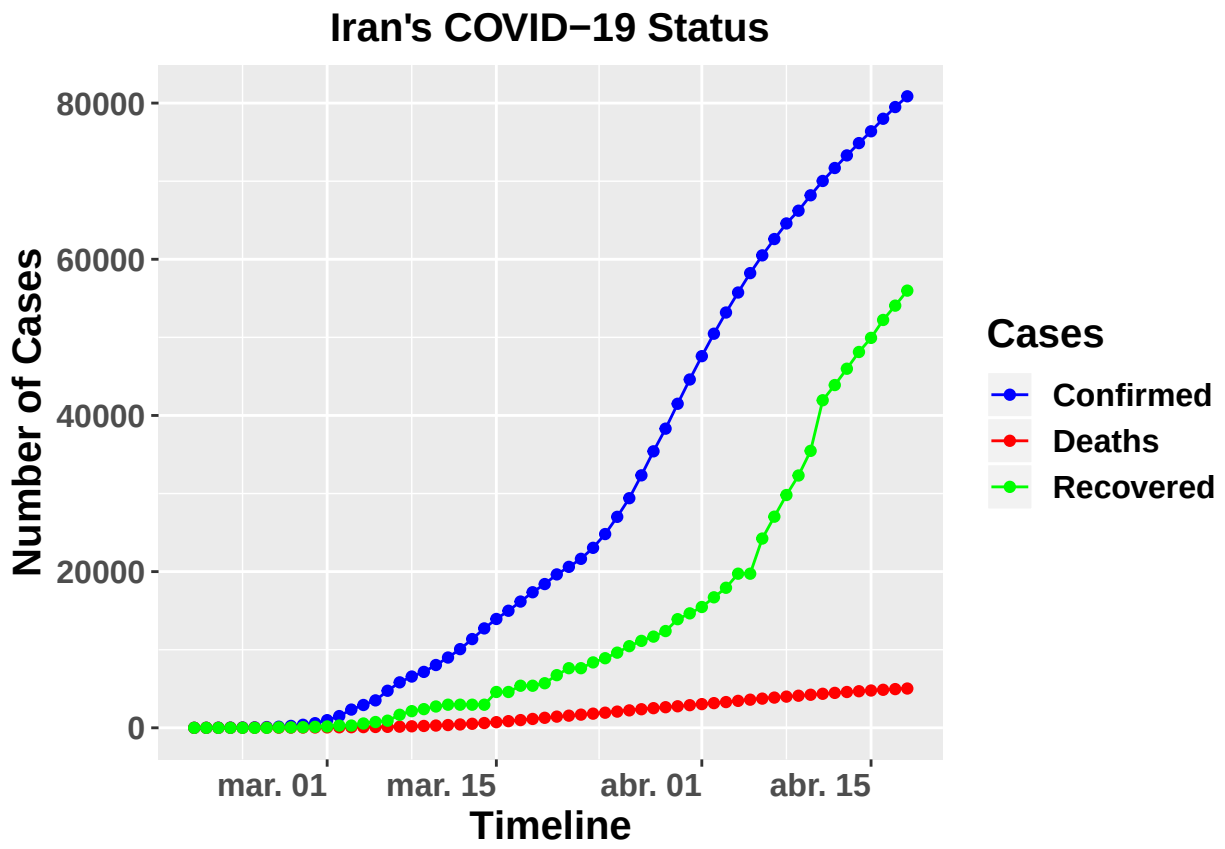



```
Iran <- filter(df,Country == "Iran") %>% group_by(Date) %>%
summarise(Confirmed =  sum(Confirmed) , Deaths = sum(Deaths), Recovered = sum(Recovered)) %>%
gather(key = Cases, value = Count, c(Confirmed,Deaths,Recovered))
```

```
Iran2 <- filter(Iran, Cases =="Deaths",)
Iran2$Fallecimientos.nuevos <- c( NA, diff(Iran2$Count))

Iran_plot2<- ggplot(Iran2, aes(x= Date, y= Fallecimientos.nuevos ,fill = Cases, color = Cases , group=Ca
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","re
           labs(x="Timeline", y="Number of Cases",title = "Fallecimientos diarios nuevos en Iran", fill
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

Iran_plot2
```

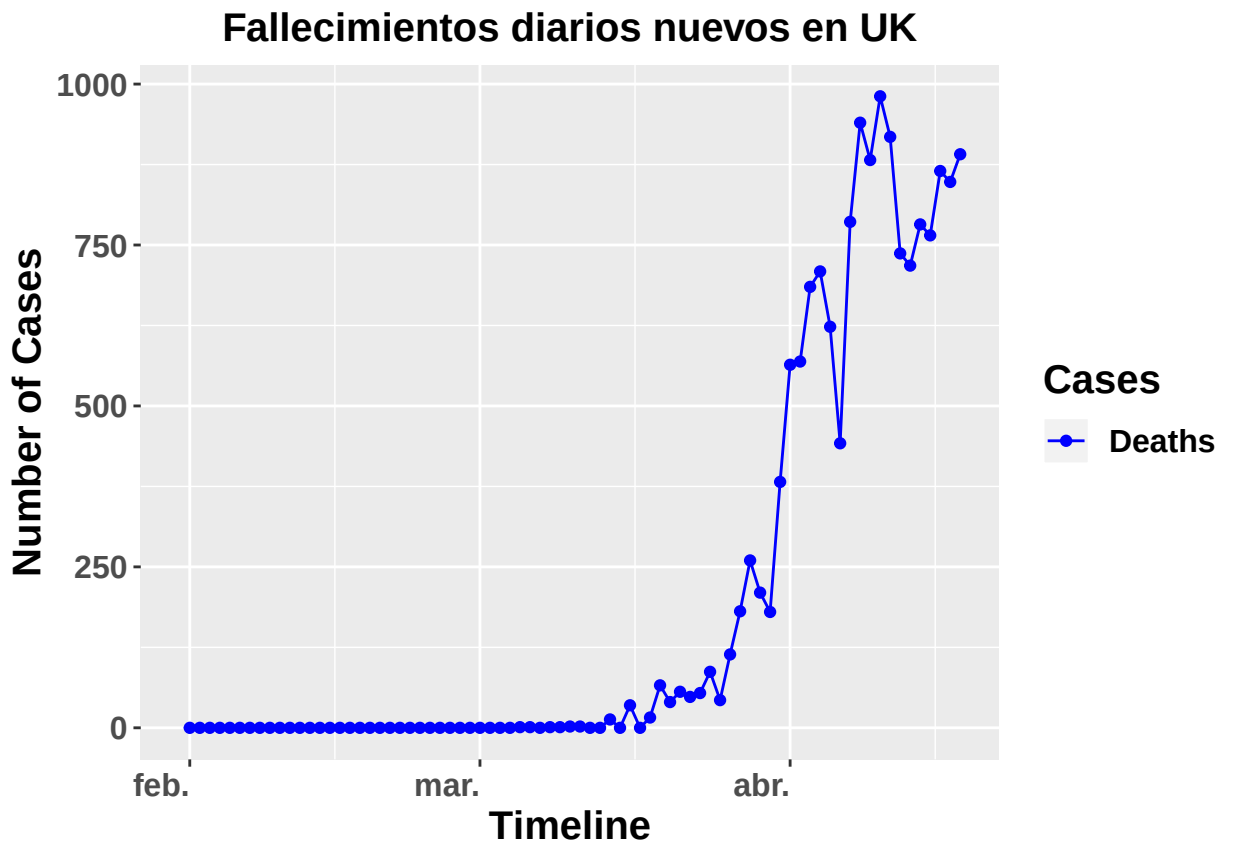



```
#Line Plot
Iran_plot <- ggplot(Iran, aes(x= Date, y= Count ,fill = Cases, color = Cases , group=Cases ))+
            geom_line(aes(colour = Cases))+geom_point()+
            scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","r
            labs(x="Timeline", y="Number of Cases",title = "Iran's COVID-19 Status", fill = 'Cases')+
            theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                  text = element_text(hjust = 1,face = "bold", size = 15),
                  axis.title.x = element_text(hjust = 0.5),
                  axis.title.y = element_text(hjust = 0.5))

Iran_plot
```

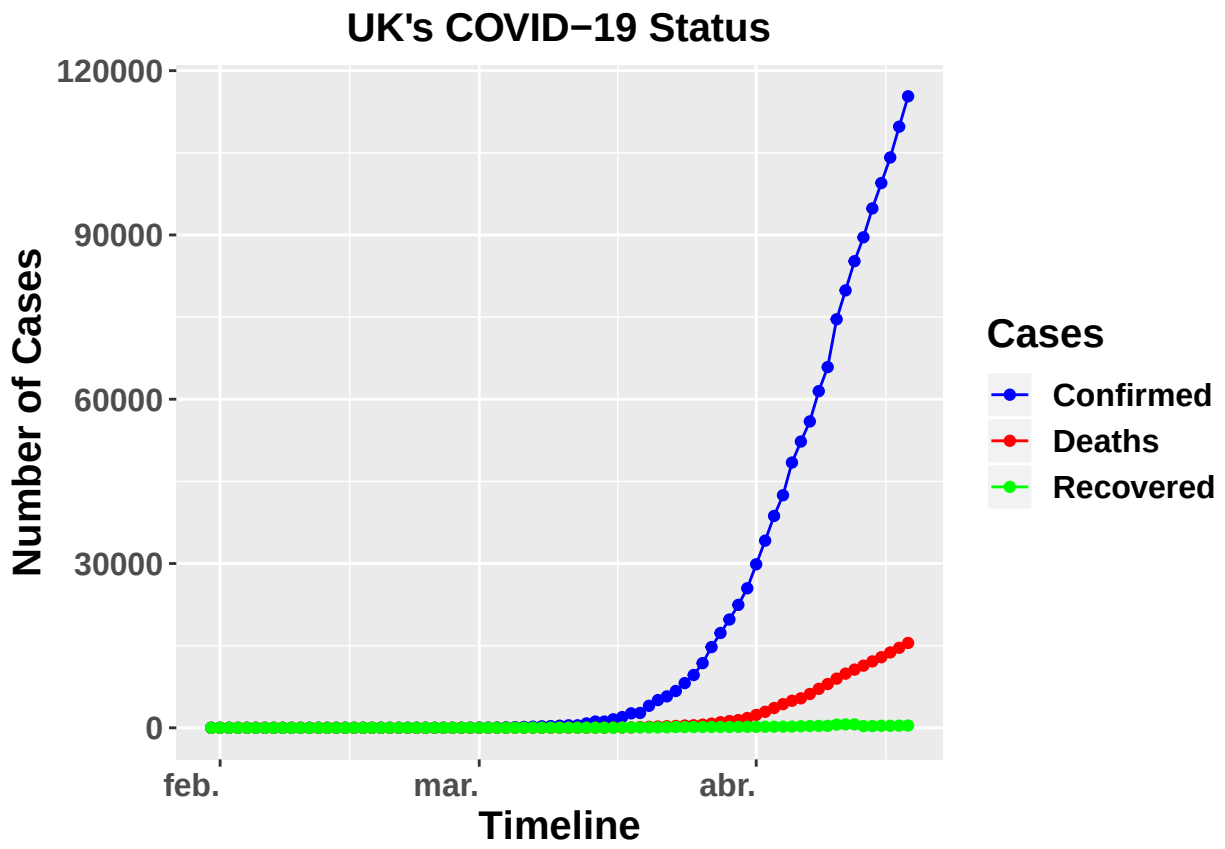



```
UK <- filter(df,Country == "UK") %>% group_by(Date) %>%
summarise(Confirmed =  sum(Confirmed) , Deaths = sum(Deaths), Recovered = sum(Recovered)) %>%
gather(key = Cases, value = Count, c(Confirmed,Deaths,Recovered))
```

```
UK2 <- filter(UK, Cases =="Deaths",)
UK2$Fallecimientos.nuevos <- c( NA, diff(UK2$Count))

UK_plot2<- ggplot(UK2, aes(x= Date, y= Fallecimientos.nuevos ,fill = Cases, color = Cases , group=Cases
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","r
           labs(x="Timeline", y="Number of Cases",title = "Fallecimientos diarios nuevos en UK", fill =
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

UK_plot2
```

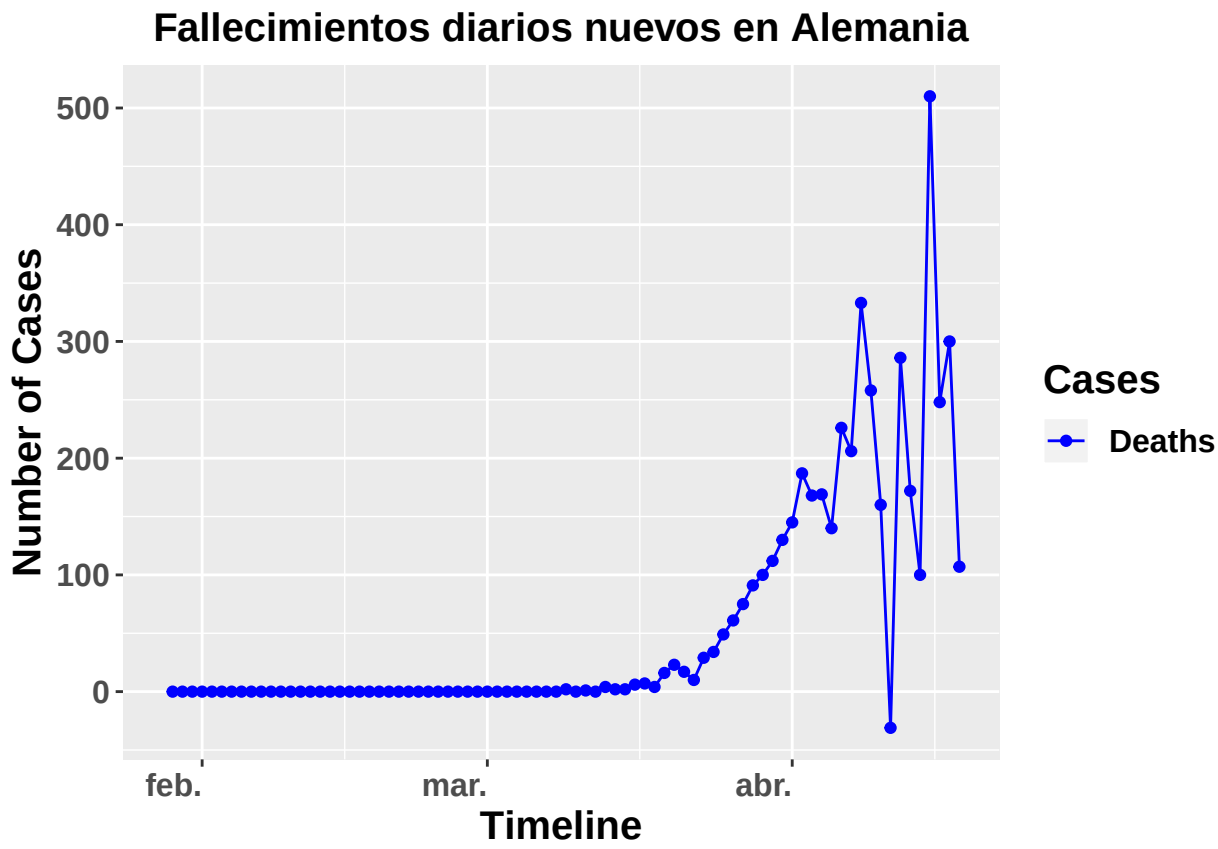



```
#Line Plot
UK_plot <- ggplot(UK, aes(x= Date, y= Count ,fill = Cases, color = Cases , group=Cases ))+
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","r
           labs(x="Timeline", y="Number of Cases",title = "UK's COVID-19 Status", fill = 'Cases')+
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

UK_plot
```

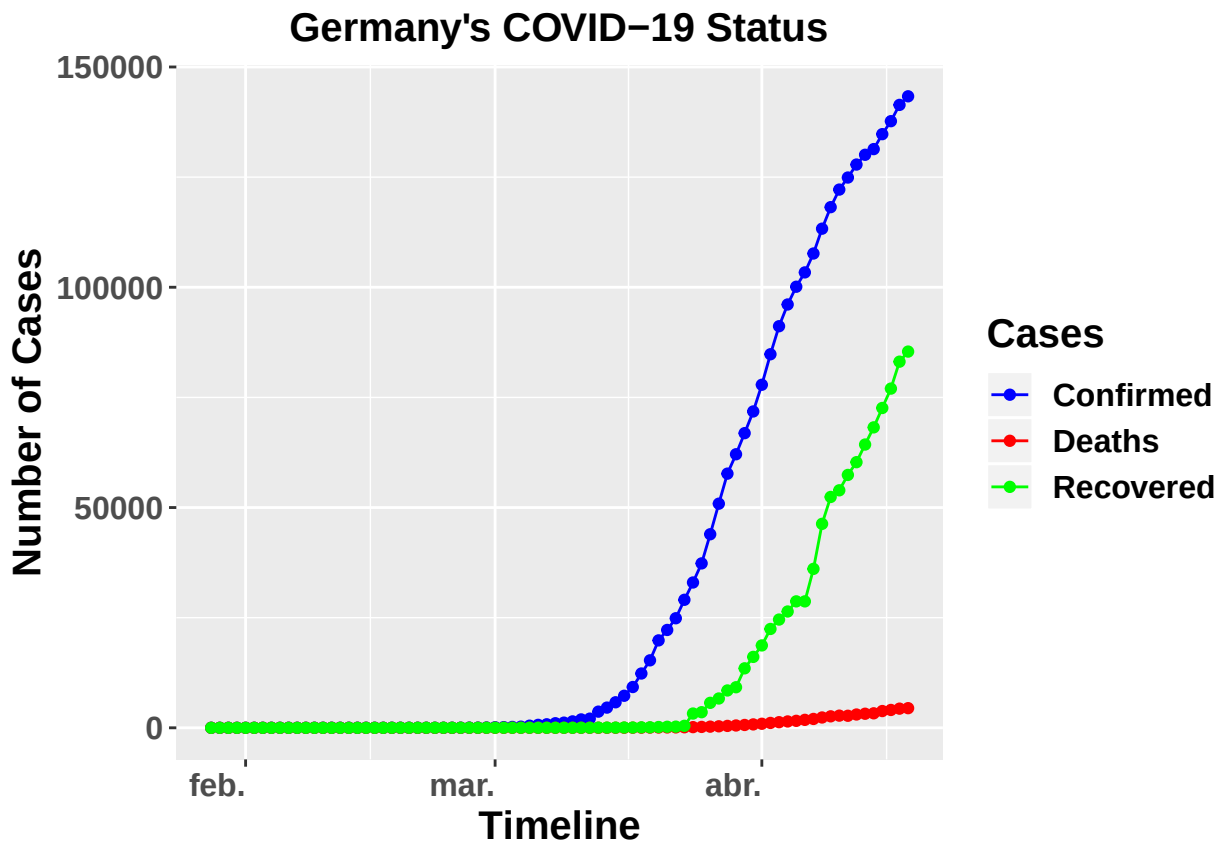



```
Germany <- filter(df,Country == "Germany") %>% group_by(Date) %>%
summarise(Confirmed =  sum(Confirmed) , Deaths = sum(Deaths), Recovered = sum(Recovered)) %>%
gather(key = Cases, value = Count, c(Confirmed,Deaths,Recovered))
```

```
Germany2 <- filter(Germany, Cases =="Deaths",)
Germany2$Fallecimientos.nuevos <- c( NA, diff(Germany2$Count))
Germany_plot2<- ggplot(Germany2, aes(x= Date, y= Fallecimientos.nuevos ,fill = Cases, color = Cases , gr
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","re
           labs(x="Timeline", y="Number of Cases",title = "Fallecimientos diarios nuevos en Alemania", s
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

Germany_plot2
```

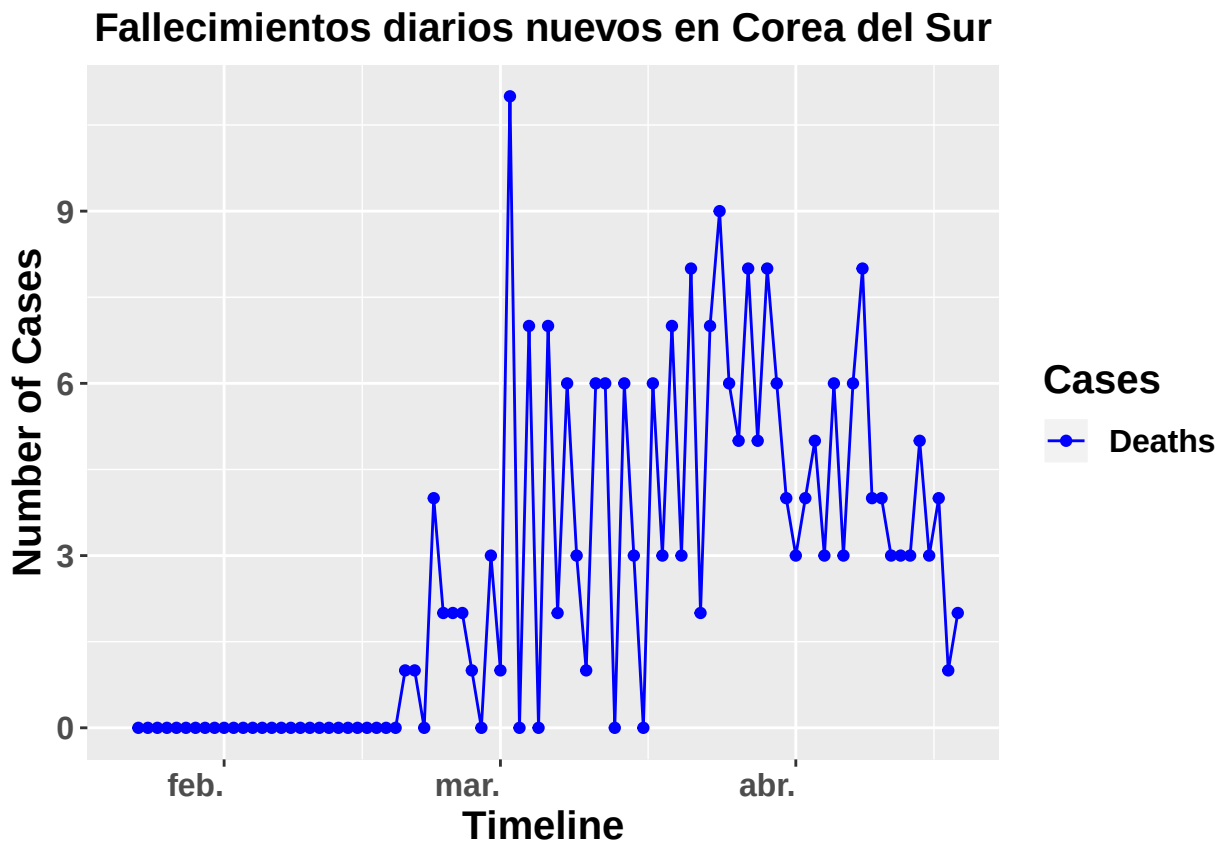



```
#Line Plot
Germany_plot <- ggplot(Germany, aes(x= Date, y= Count ,fill = Cases, color = Cases , group=Cases ))+
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","r
           labs(x="Timeline", y="Number of Cases",title = "Germany's COVID-19 Status", fill = 'Cases')+
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

Germany_plot
```

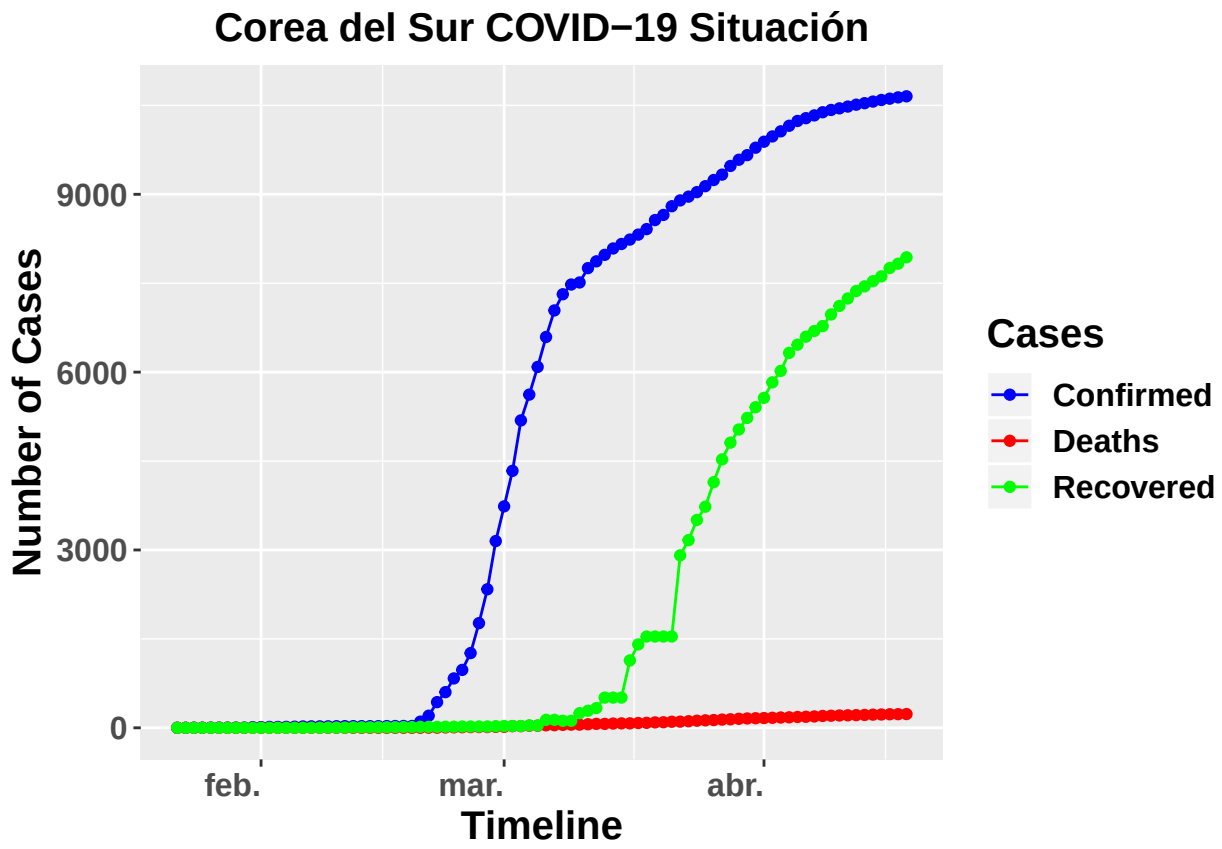



```
South_Korea <- filter(df,Country == "South Korea") %>% group_by(Date) %>%
summarise(Confirmed =  sum(Confirmed) , Deaths = sum(Deaths), Recovered = sum(Recovered)) %>%
gather(key = Cases, value = Count, c(Confirmed,Deaths,Recovered))
```

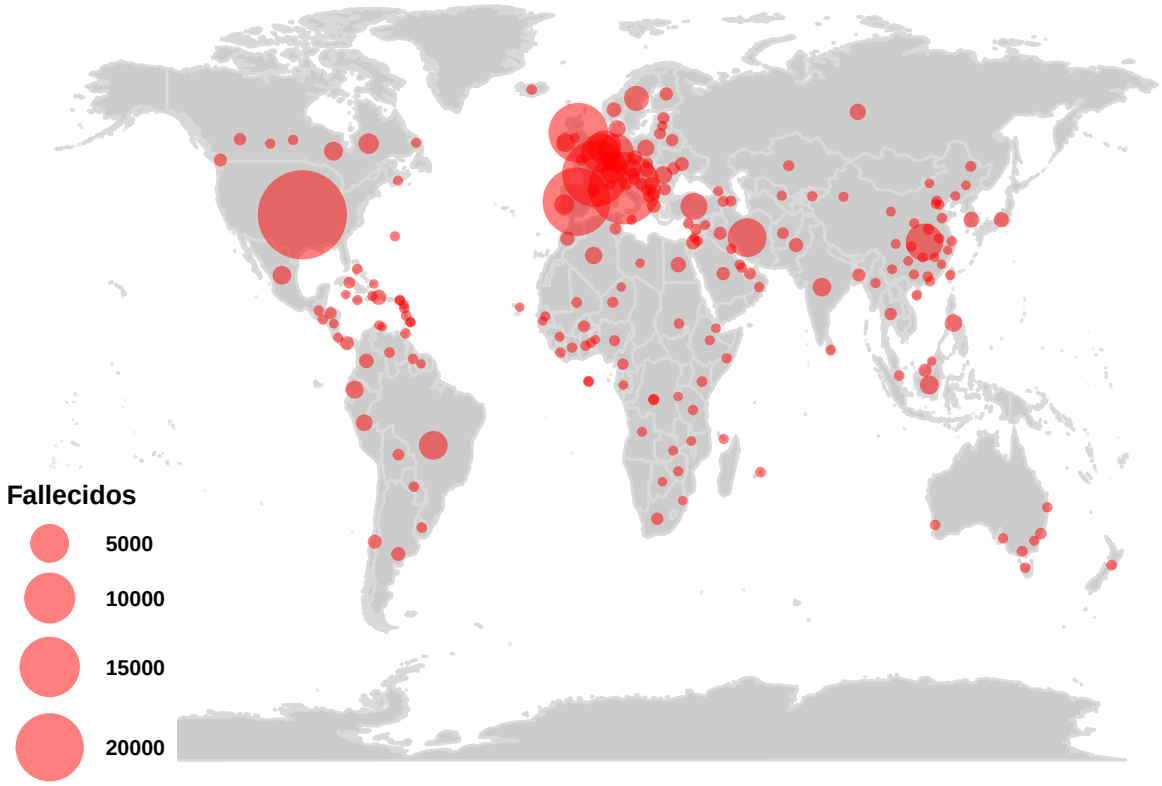
```
South_Korea2 <- filter(South_Korea, Cases =="Deaths",)
South_Korea2$Fallecimientos.nuevos <- c( NA, diff(South_Korea2$Count))

South_Korea_plot2<- ggplot(South_Korea2, aes(x= Date, y= Fallecimientos.nuevos ,fill = Cases, color = Ca
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","re
           labs(x="Timeline", y="Number of Cases",title = "Fallecimientos diarios nuevos en Corea del Su
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

South_Korea_plot2
```




```
#Line Plot
South_Korea_plot <- ggplot(South_Korea, aes(x= Date, y= Count ,fill = Cases, color = Cases , group=Cases
           geom_line(aes(colour = Cases))+geom_point()+
           scale_fill_manual(values = c("blue","red","green"))+scale_colour_manual(values = c("blue","r
           labs(x="Timeline", y="Number of Cases",title = "Corea del Sur COVID-19 Situación", fill = 'Ca
           theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 15),
                 text = element_text(hjust = 1,face = "bold", size = 15),
                 axis.title.x = element_text(hjust = 0.5),
                 axis.title.y = element_text(hjust = 0.5))

South_Korea_plot
```




```
data <- filter(df_deaths,df_deaths[,ncol(df_deaths)]>0)
world <- ggplot() +
  borders("world", colour = "gray85", fill = "gray80") +theme_map()
map_death <- world +
  geom_point(aes(x = data$Long, y = data$Lat, size = as.integer(unlist(data[,ncol(df_deaths)]))),
             data = data,
             colour = 'red', alpha = .5) +
  scale_size_continuous(range = c(1, 15),
                        breaks = c(5000, 10000, 15000, 20000)) +
  labs(size = 'Fallecidos')+   theme( plot.title = element_text(hjust = 0.5 , face = "bold", size = 10)
        text = element_text(hjust = 1,face = "bold", size = 10))
map_death
```


Fallecidos
5000
10000
15000
20000

Links

Gracias especialmente a datadista por mantener base de datos actualizada del

Ministerio de Sanidad.

Enlaces a bases de datos.

https://www.kaggle.com/sudalairajkumar/novel-corona-virus-2019-dataset/download/uMF6QnlPB7ScS6BxTw1I%2Fversions%2FXDJvWcErFIHv3R7zGrDD%2Ffiles%2Fcovid_19_data.csv?datasetVersionNumber=56

https://www.kaggle.com/sudalairajkumar/novel-corona-virus-2019-dataset/download/uMF6QnlPB7ScS6BxTw1I%2Fversions%2FXDJvWcErFIHv3R7zGrDD%2Ffiles%2Ftime_series_covid_19_confirmed.csv?datasetVersionNumber=56

https://www.kaggle.com/sudalairajkumar/novel-corona-virus-2019-dataset/download/uMF6QnlPB7ScS6BxTw1I%2Fversions%2FXDJvWcErFIHv3R7zGrDD%2Ffiles%2Ftime_series_covid_19_deaths.csv?datasetVersionNumber=56

https://www.kaggle.com/sudalairajkumar/novel-corona-virus-2019-dataset/download/uMF6QnlPB7ScS6BxTw1I%2Fversions%2FXDJvWcErFIHv3R7zGrDD%2Ffiles%2Ftime_series_covid_19_recovered.csv?datasetVersionNumber=56

https://raw.githubusercontent.com/datadista/datasets/master/COVID%2019/ccaa_covid19_fallecidos_long.csv

https://raw.githubusercontent.com/datadista/datasets/master/COVID%2019/nacional_covid19.csv

https://raw.githubusercontent.com/datadista/datasets/master/COVID%2019/ccaa_covid19_uci_long.csv

- Map tracks coronavirus outbreak in near real time
- Coronavirus COVID-19 Global Cases by Johns Hopkins CSSE
- Coronavirus disease (COVID-19) outbreak - WHO
- coronavirus R package provides a tidy format dataset
- An AI Epidemiologist Sent the First Warnings of the Wuhan Virus