Covid19

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

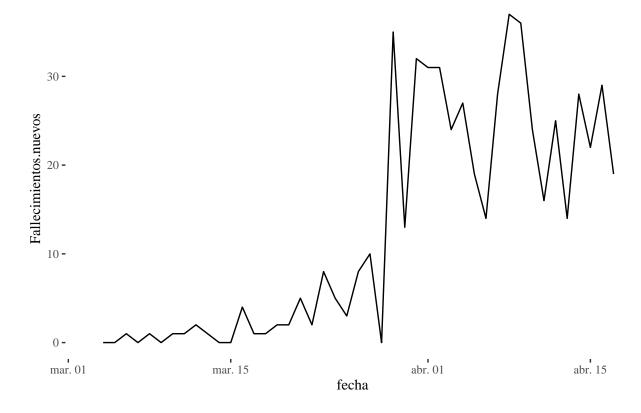
Queremos entender el virus, su comportamiento e incidencia por países y la visualización de datos de cada uno de ellos en el tiempo.

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 evolucion de fallecidos diarios en Aragón.

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

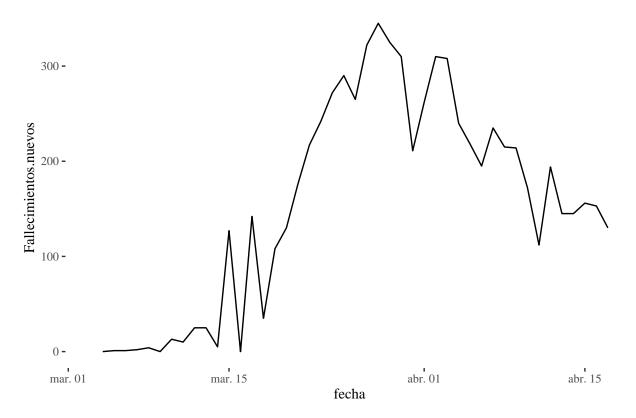
Evolucíon de fallecidos diarios en Aragón



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

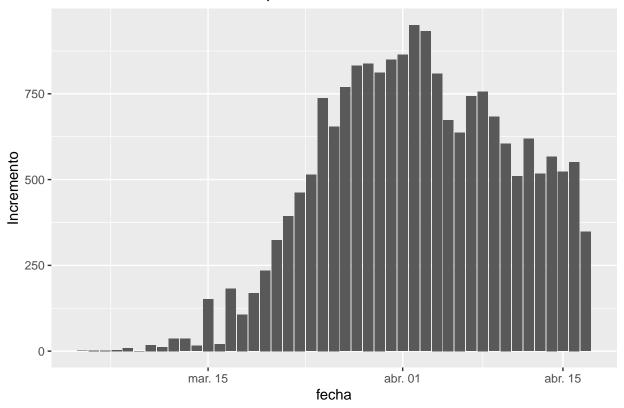
```
ggplot(covar,aes(x=fecha,y=Fallecimientos.nuevos),na.rm =TRUE)+geom_line()+theme_tufte()+
ggtitle( "Fallecimientos diarios nuevos en la Comunidad de Madrid")
```

Fallecimientos diarios nuevos en la Comunidad de Madrid



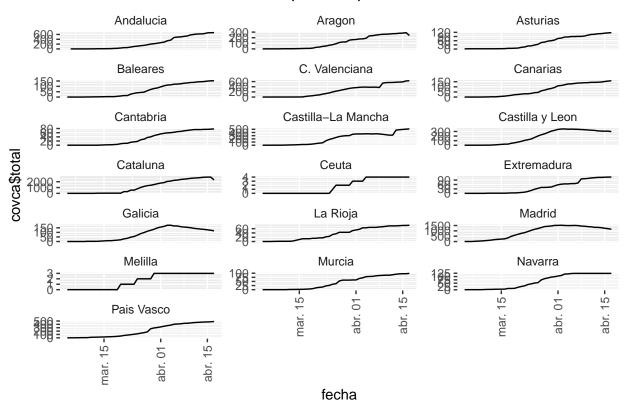
```
ccaa_covid19_fallecidos_long <- ccaa_covid19_fallecidos_long %% filter( CCAA == "Total")
ggplot(data=ccaa_covid19_fallecidos_long, aes(x = fecha,y = Incremento)) +
   geom_bar(stat="identity", position="dodge")+
   ggtitle( "Fallecimientos diarios en España")</pre>
```

Fallecimientos diarios en España



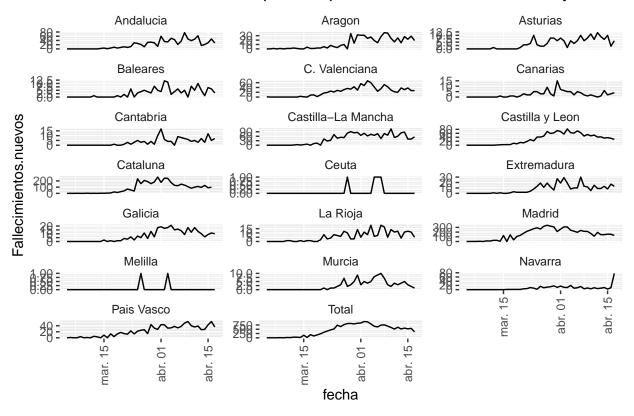
```
covca<-na.omit(covca)
ggplot(covca, aes(fecha,covca$total,group = 1)) +
   geom_line() +
   facet_wrap(vars(CCAA), scales = "free_y", ncol = 3, strip.position = "top") +
   theme(strip.background = element_blank(), strip.placement = "outside")+
   theme(axis.text.x=element_text(angle=90,hjust=1,vjust=0.5))+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

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")</pre>
```

Fallecimientos diarios comparativa por Comunidades Autónomas y Total

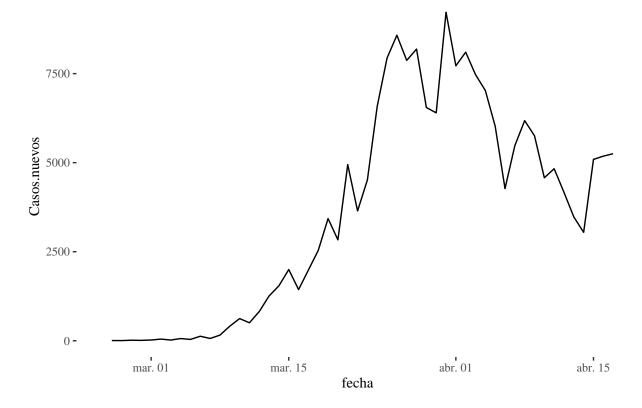


Ahora continuaremos con el analisis a nivel nacional.

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")
```

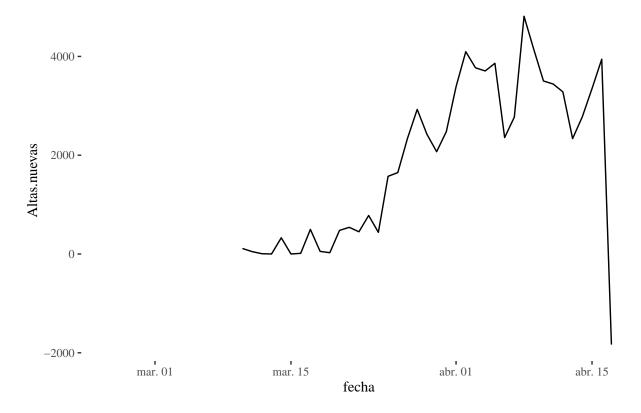
Nuevos casos diarios a nivel nacional



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")
```

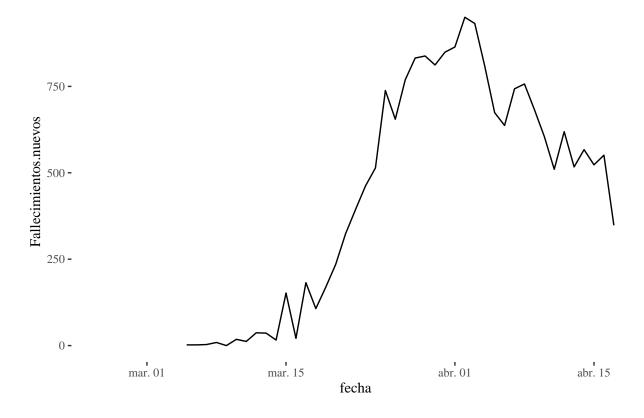
Nuevas altas diarias en España



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")
```

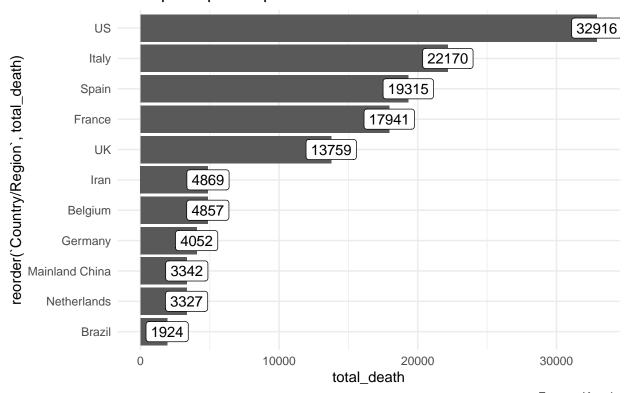
Nuevos fallecimientos por día España



Fallecidos por países.

```
corona28 <- corona_latest</pre>
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")
```

Principales países por total de casos fallecidos



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,]</pre>
```

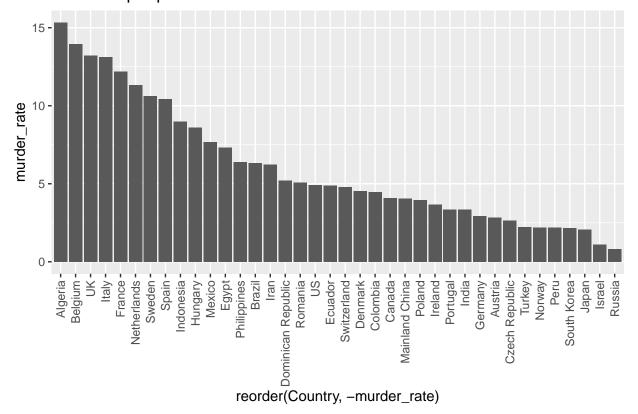
```
## # A tibble: 10 x 5
##
      Country
                  Confirmed Deaths Recovered murder rate
                                                     <dbl>
##
      <fct>
                       <dbl>
                              <dbl>
                                        <dbl>
##
    1 Algeria
                        2268
                                348
                                          783
                                                     15.3
    2 Belgium
                      34809
                               4857
                                         7562
                                                     14.0
   3 UK
                      104145 13759
                                          375
                                                     13.2
##
##
   4 Italy
                      168941
                              22170
                                        40164
                                                     13.1
                                                     12.2
##
  5 France
                      147091 17941
                                        33327
   6 Netherlands
                       29383
                               3327
                                          311
                                                     11.3
##
   7 Sweden
                       12540
                               1333
                                          550
                                                     10.6
    8 Spain
                      184948 19315
                                        74797
                                                     10.4
                                                      8.99
   9 Indonesia
                        5516
                                496
                                          548
## 10 Hungary
                        1652
                                142
                                          199
                                                      8.60
```

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

```
## # A tibble: 10 x 5
##
                       Confirmed Deaths Recovered murder rate
      Country
##
      <fct>
                           <dbl>
                                   <dbl>
                                              <dbl>
                                                           <dbl>
                           27938
                                     232
                                               2304
                                                           0.830
##
    1 Russia
##
    2 Israel
                           12758
                                     142
                                               2818
                                                           1.11
                                                           2.06
##
    3 Japan
                            8626
                                     178
                                                901
##
    4 South Korea
                           10613
                                     229
                                               7757
                                                           2.16
                                     274
                                                           2.19
##
    5 Peru
                           12491
                                               6120
##
    6 Norway
                            6896
                                     152
                                                 32
                                                           2.20
    7 Turkey
                           74193
                                    1643
                                               7089
                                                           2.21
    8 Czech Republic
                            6433
                                     169
                                                972
                                                           2.63
##
##
    9 Austria
                           14476
                                     410
                                               8986
                                                           2.83
## 10 Germany
                          137698
                                    4052
                                              77000
                                                           2.94
```

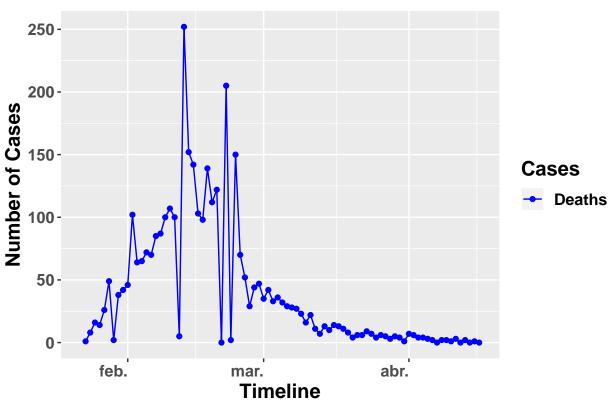
```
ggplot(data=filtered, aes(x=reorder(Country,-murder_rate), y=murder_rate)) +
    geom_bar(stat="identity", position="dodge")+ theme(axis.text.x=element_text(angle=90,hjust=1,vjust=
    ggtitle("Letalidad por país")
```

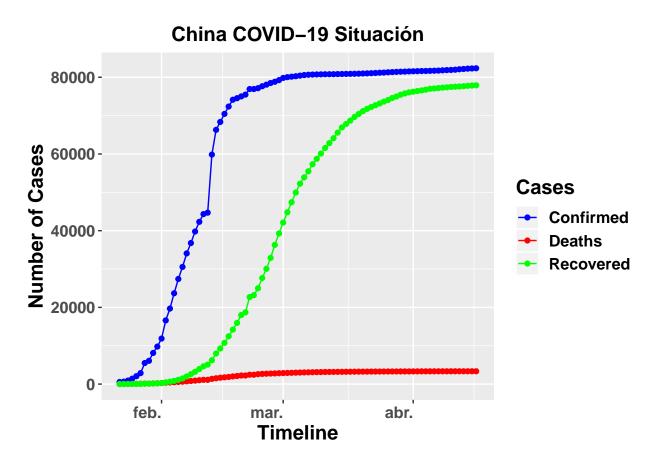
Letalidad por país



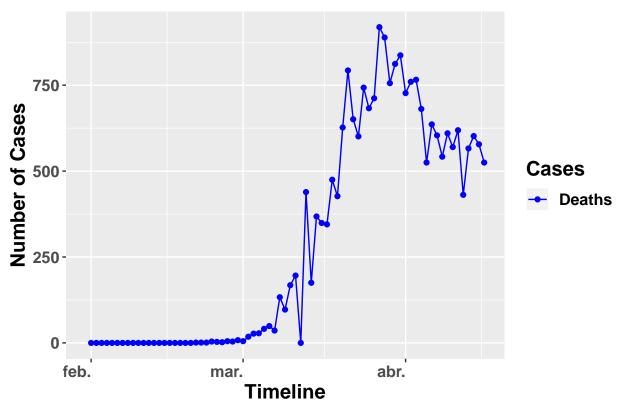
```
China <- filter(df,Country == "Mainland China") %>% group_by(Date) %>% summarise(Confirmed = sum(Confirmed), Deaths = sum(Deaths), Recovered = sum(Recovered)) %>% gather(key = Cases, value = Count, c(Confirmed,Deaths,Recovered))
```

Fallecimientos diarios nuevos en China

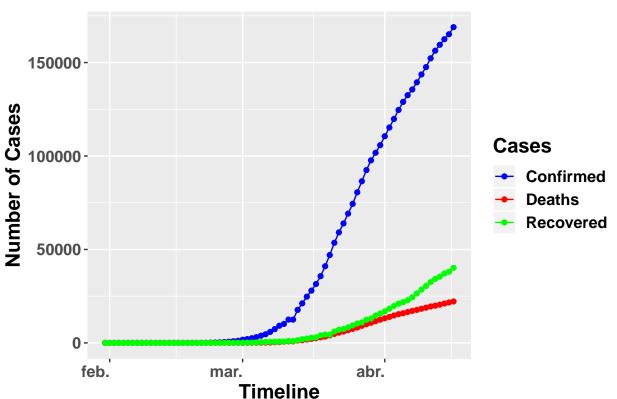




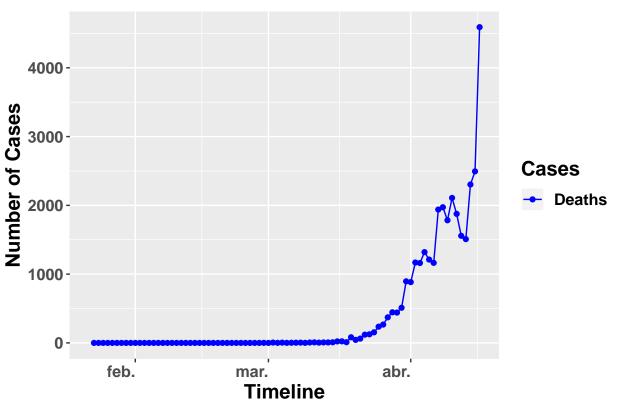
Fallecimientos diarios nuevos en Italia

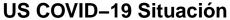


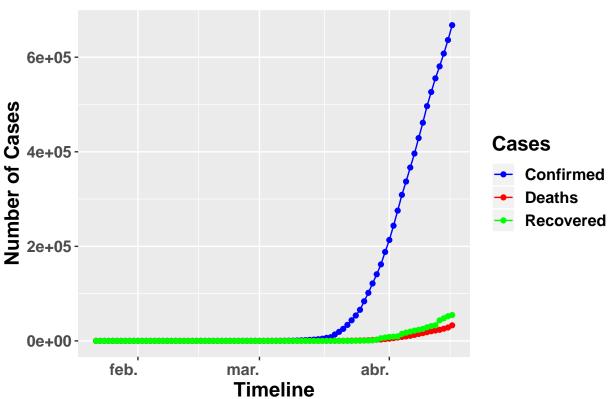
Italia COVID-19 Situación

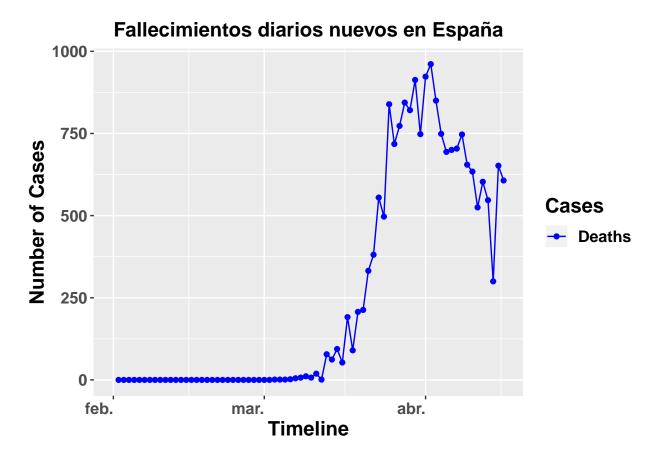


Fallecimientos diarios nuevos en US

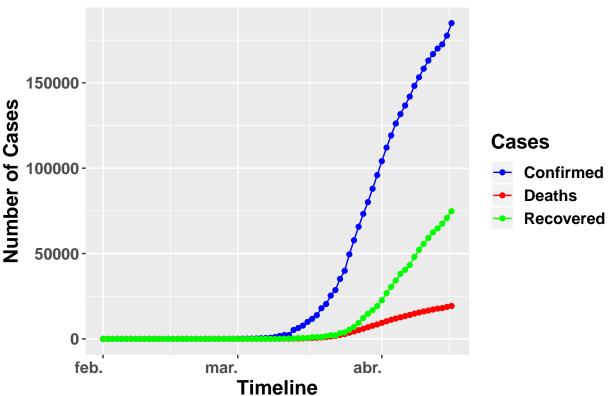


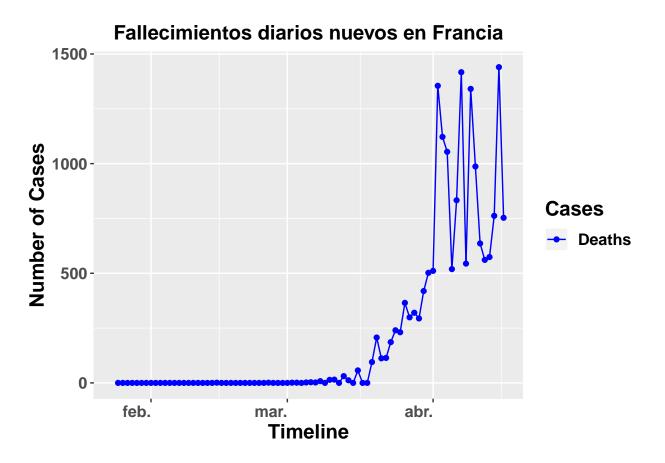




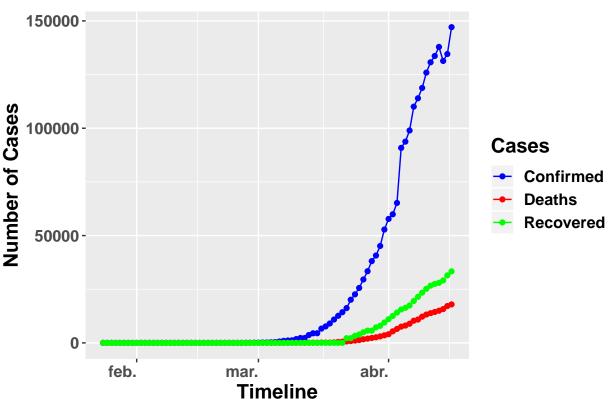




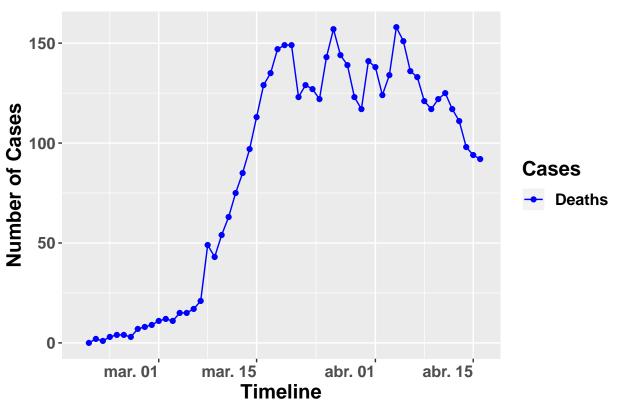




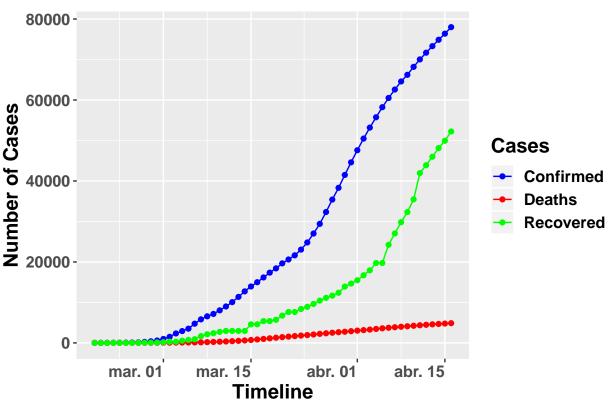






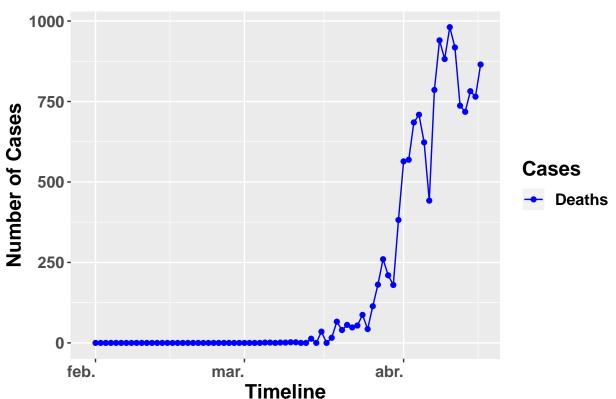




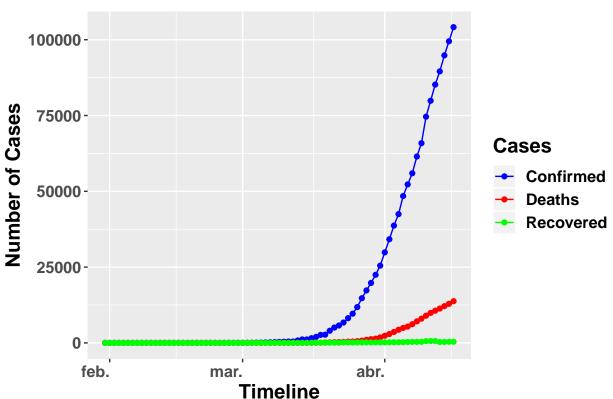


```
UK <- filter(df,Country == "UK") %>% group_by(Date) %>%
summarise(Confirmed = sum(Confirmed) , Deaths = sum(Deaths), Recovered = sum(Recovered)) %>%
gather(key = Cases, value = Count, c(Confirmed,Deaths,Recovered))
```

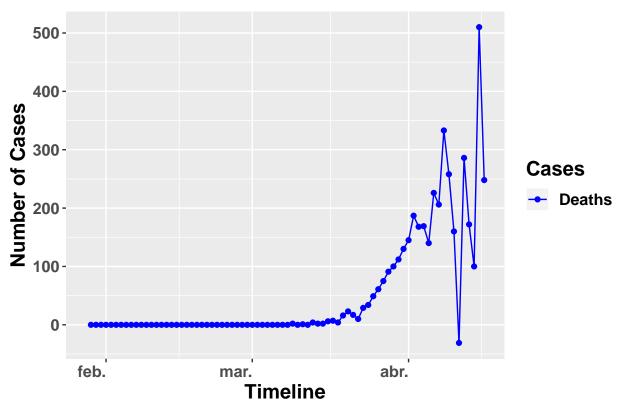




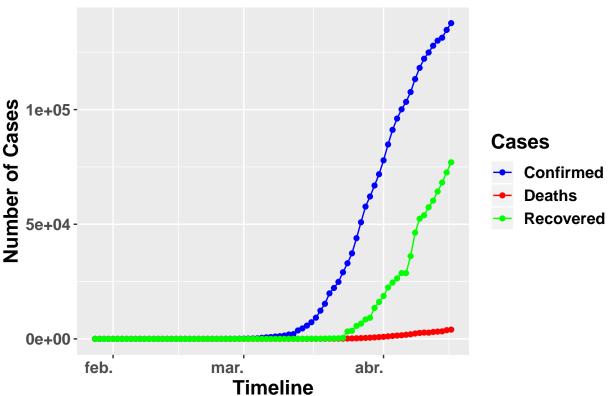




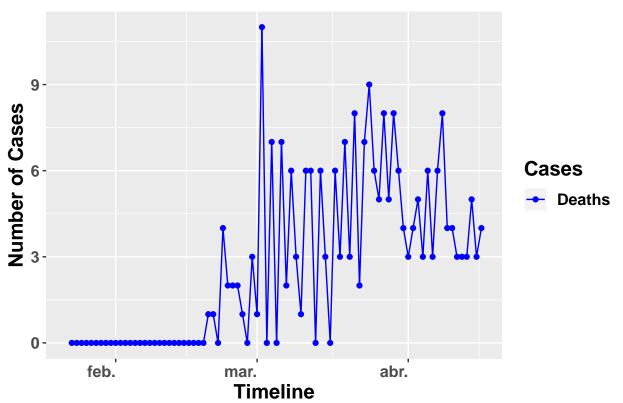
Fallecimientos diarios nuevos en Alemania



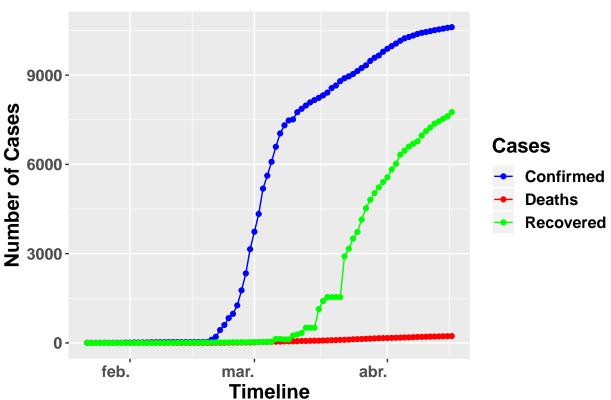
Germany's COVID-19 Status

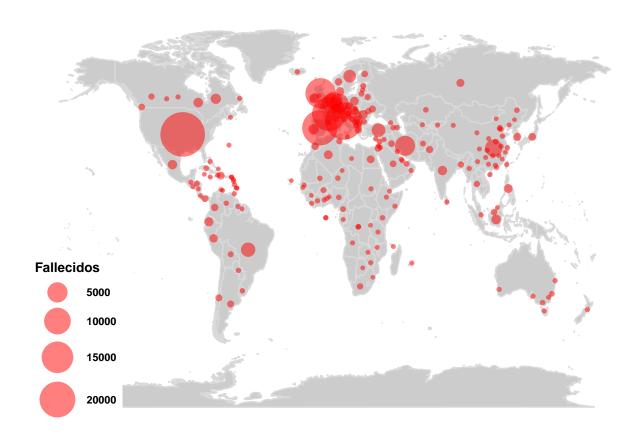


Fallecimientos diarios nuevos en Corea del Sur



Corea del Sur COVID-19 Situación





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