

# COVID-19 CASES

AS OF SATURDAY 4/4/2020, 6:00PM HST

Statistics regarding daily new cases and active cases the nine countries that has the highest number of total cases, and South Korea

Source: <https://www.worldometers.info/coronavirus/>

Statistics regarding daily new cases are also included for Cyprus and Hawaii.

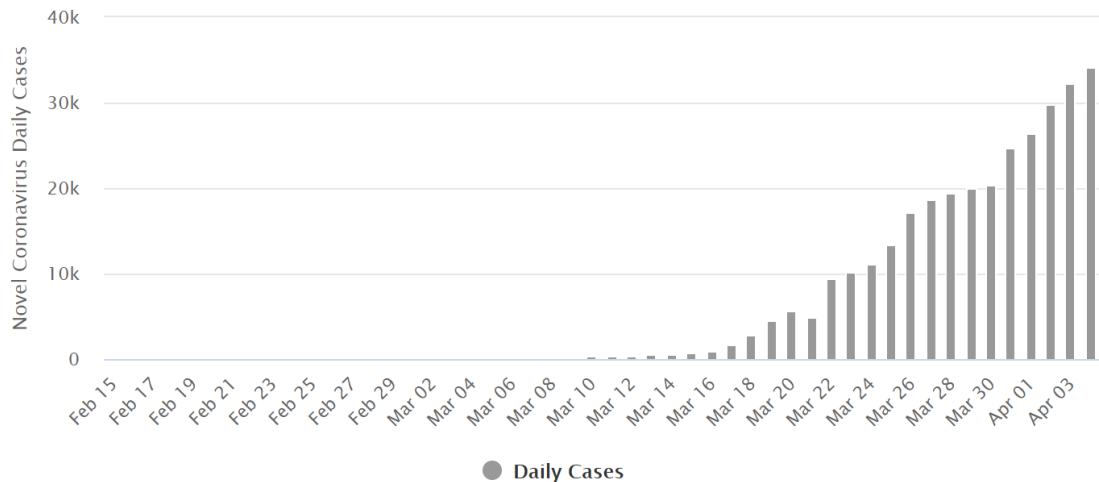
Source: <https://www.financialmirror.com/category/cyprus/>

Source: <https://health.hawaii.gov/news/covid-19-updates/>

# Daily New Cases in the United States

## Daily New Cases

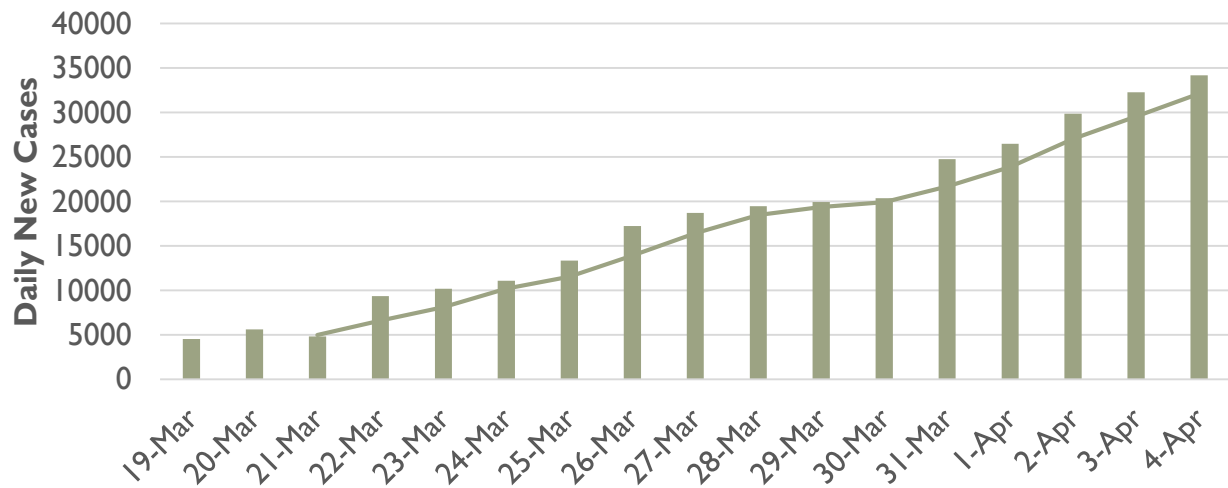
Cases per Day  
Data as of 0:00 GMT+0



# I. USA

## 3-Day Moving Average Trendline

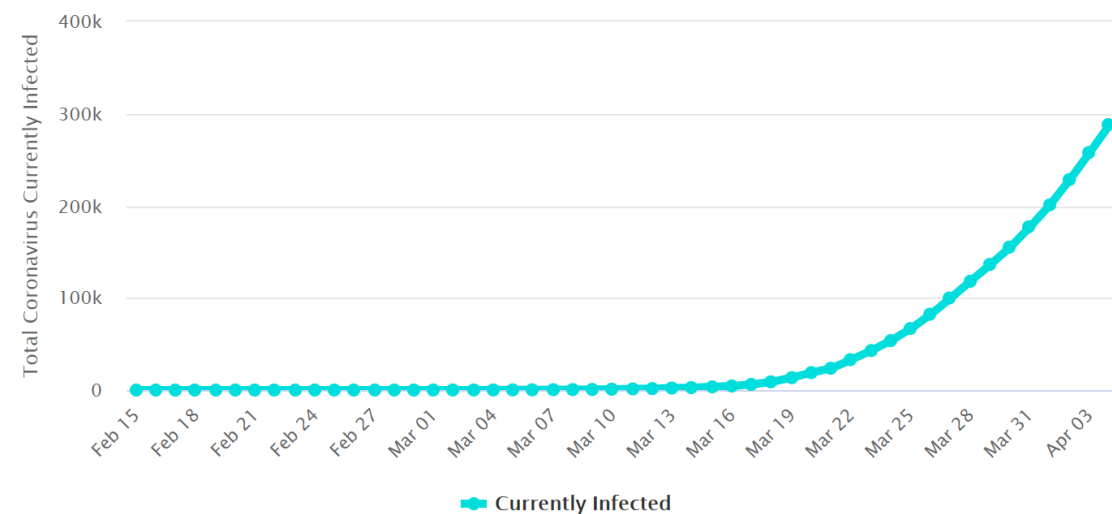
USA 3 per. Mov. Avg. (Daily New Cases)



# Active Cases in the United States

## Active Cases

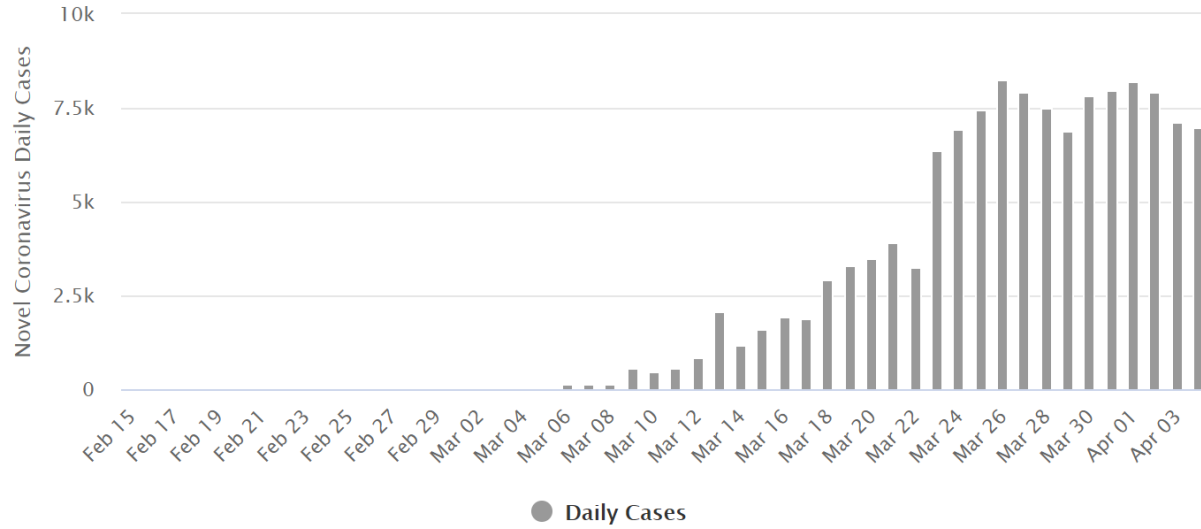
(Number of Infected People)



# Daily New Cases in Spain

## Daily New Cases

Cases per Day  
Data as of 0:00 GMT+0

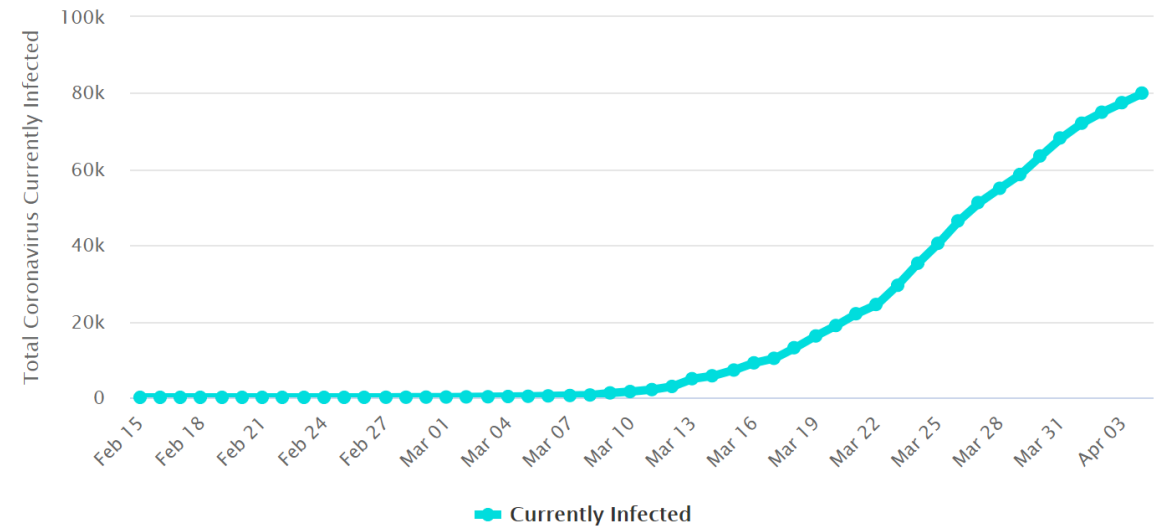


# 2. Spain

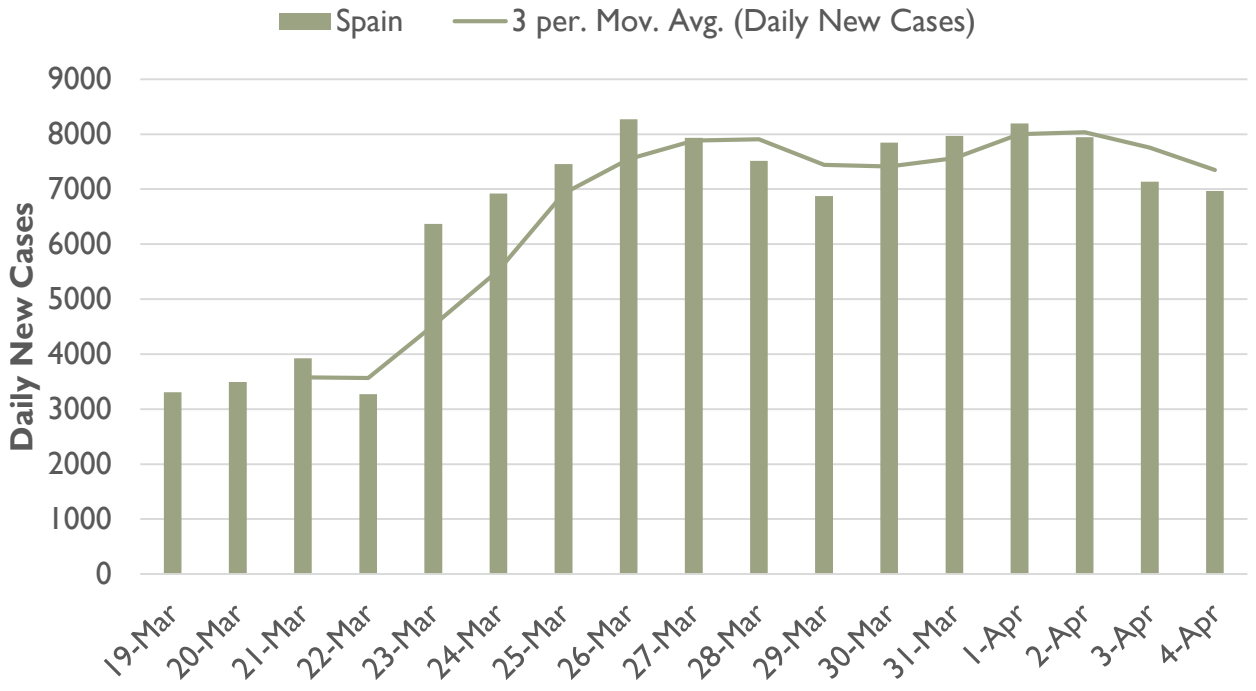
## Active Cases in Spain

### Active Cases

(Number of Infected People)

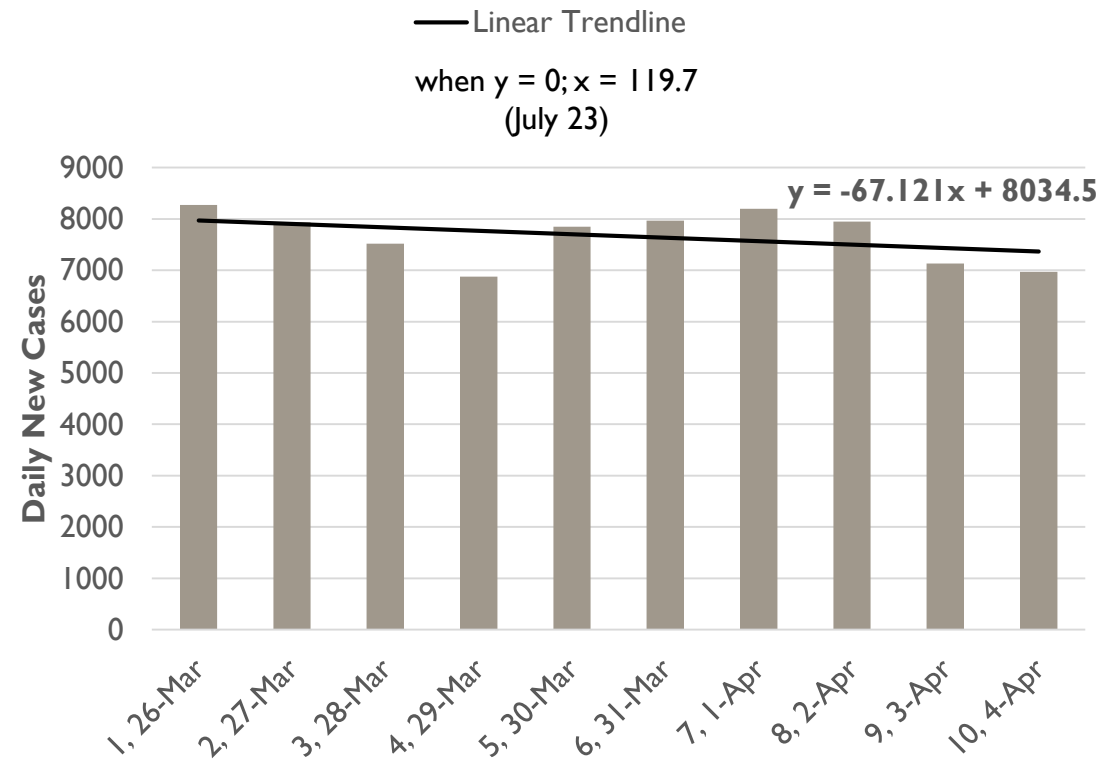


3-Day Moving Average Trendline



# Trendlines for Spain

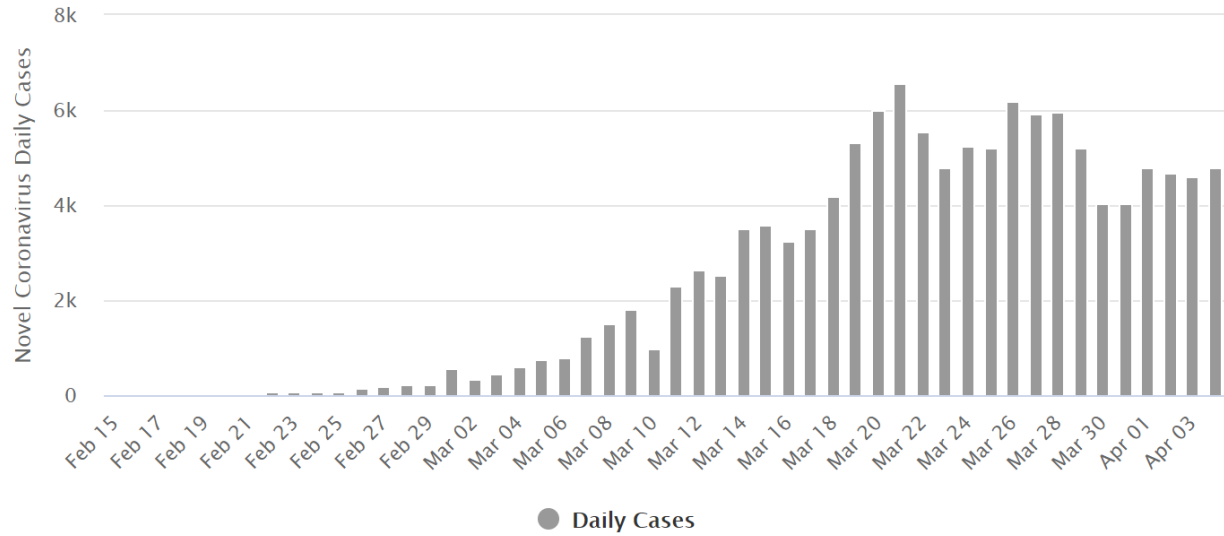
Spain Bar Chart of Daily New Cases from Peak till Today



# Daily New Cases in Italy

## Daily New Cases

Cases per Day  
Data as of 0:00 GMT+0

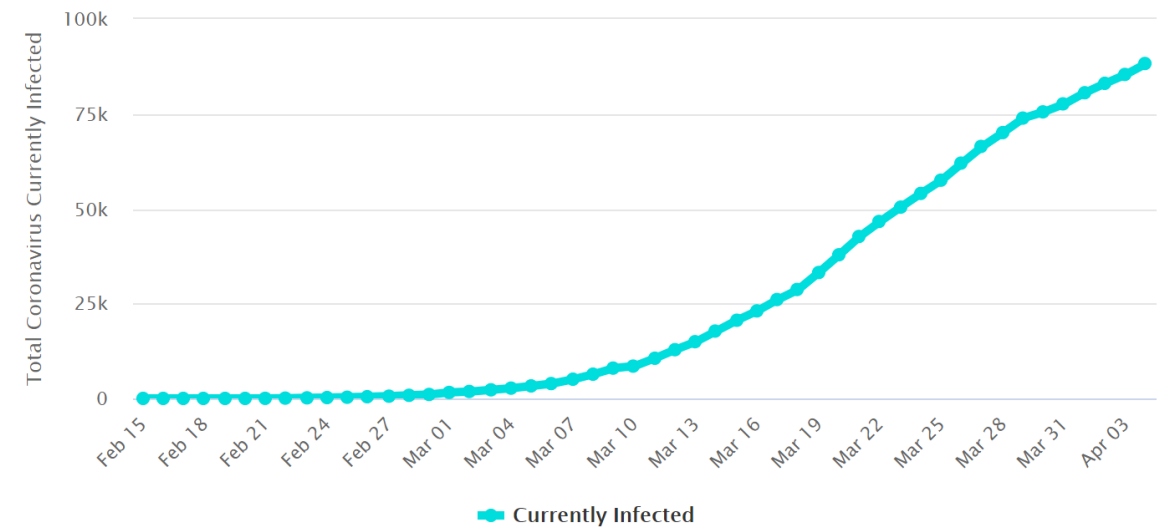


# 3. Italy

## Active Cases in Italy

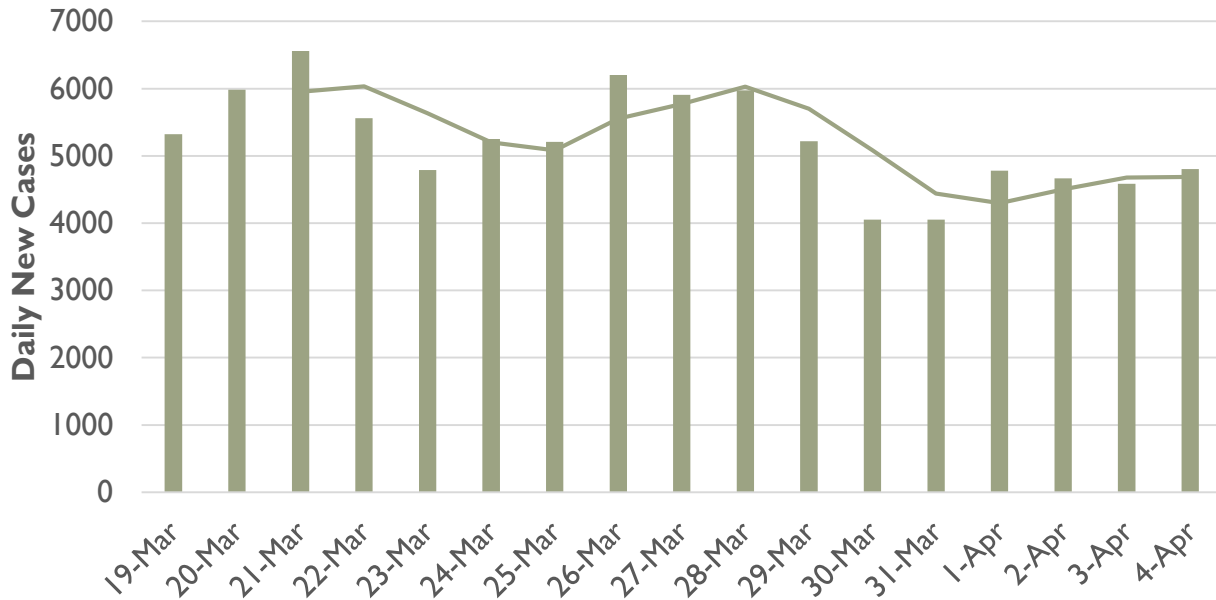
### Active Cases

(Number of Infected People)



3-Day Moving Average Trendline

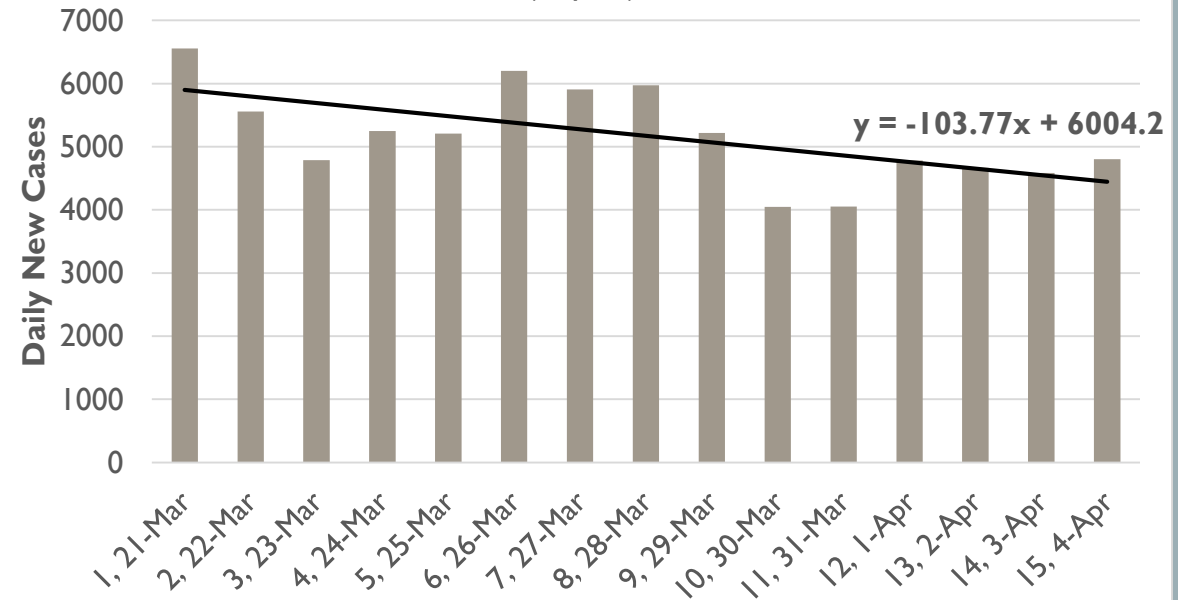
Italy 3 per. Mov. Avg. (Daily New Cases)



# Trendlines for Italy

Italy Bar Chart of Daily New Cases from Peak till Today

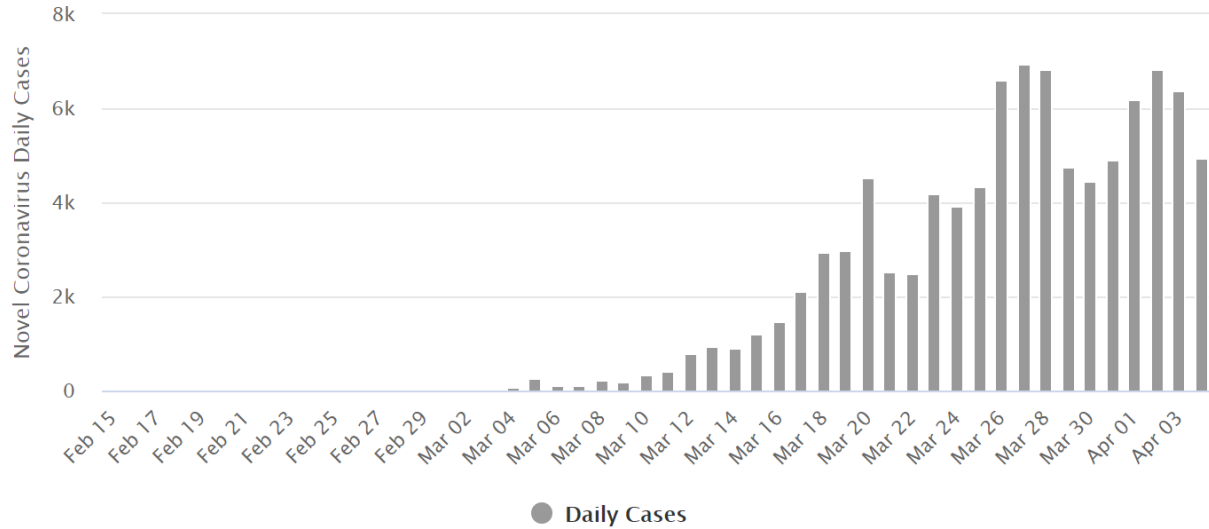
Linear Trendline  
when  $y = 0$ ;  $x = 57.8$   
(May 17)



# Daily New Cases in Germany

## Daily New Cases

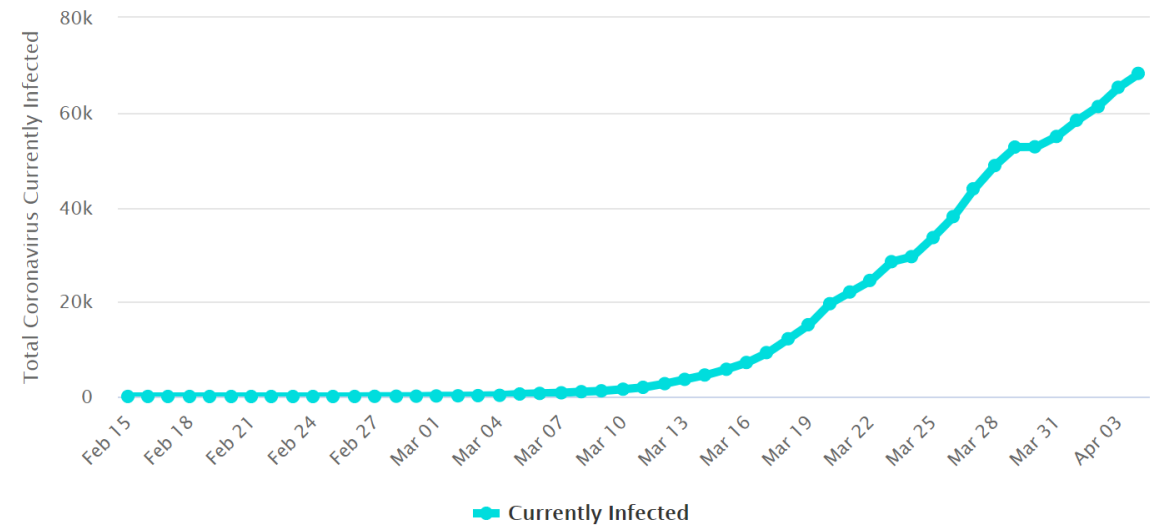
Cases per Day  
Data as of 0:00 GMT+0



# 4. Germany

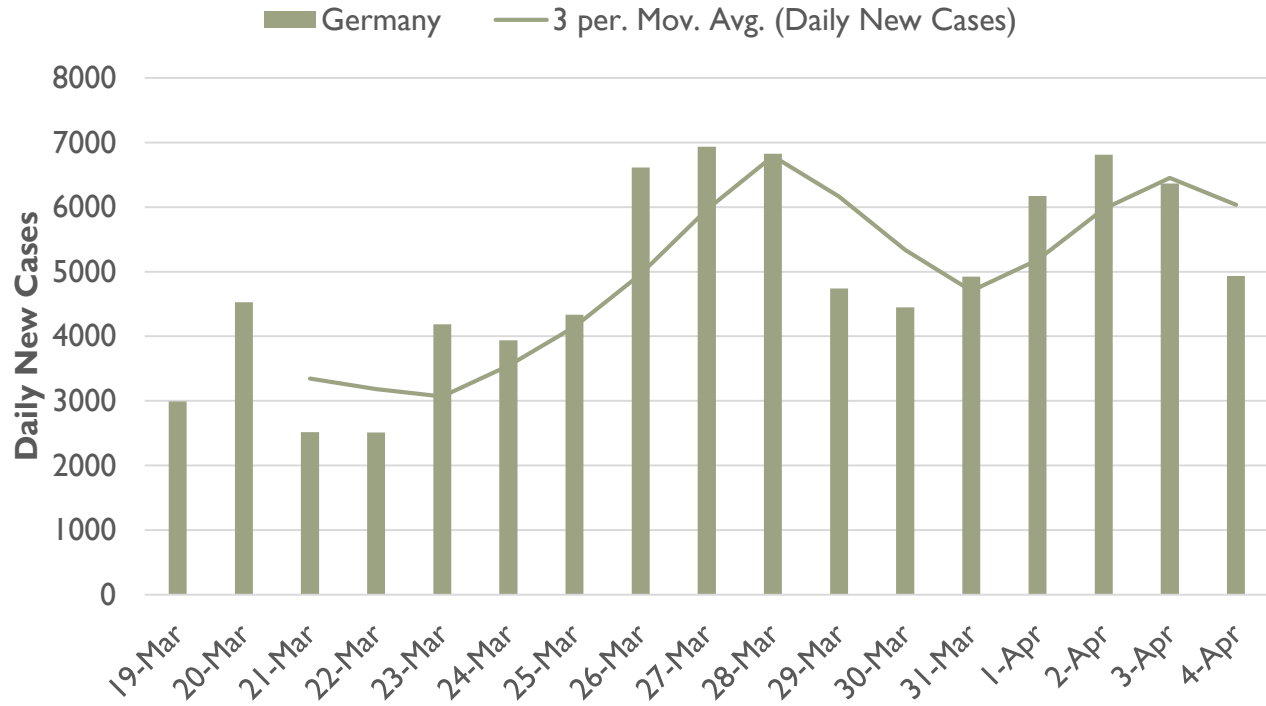
## Active Cases in Germany

Active Cases  
(Number of Infected People)

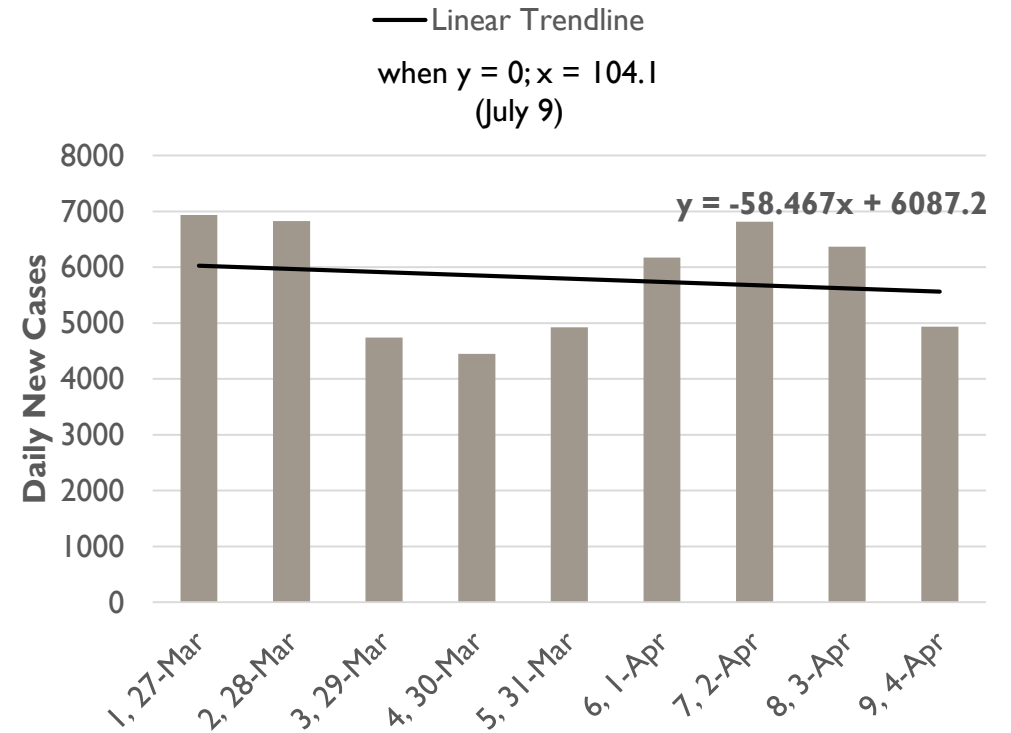


# Trendlines for Germany

3-Day Moving Average Trendline



Germany Bar Chart of Daily New Cases  
from Peak till Today

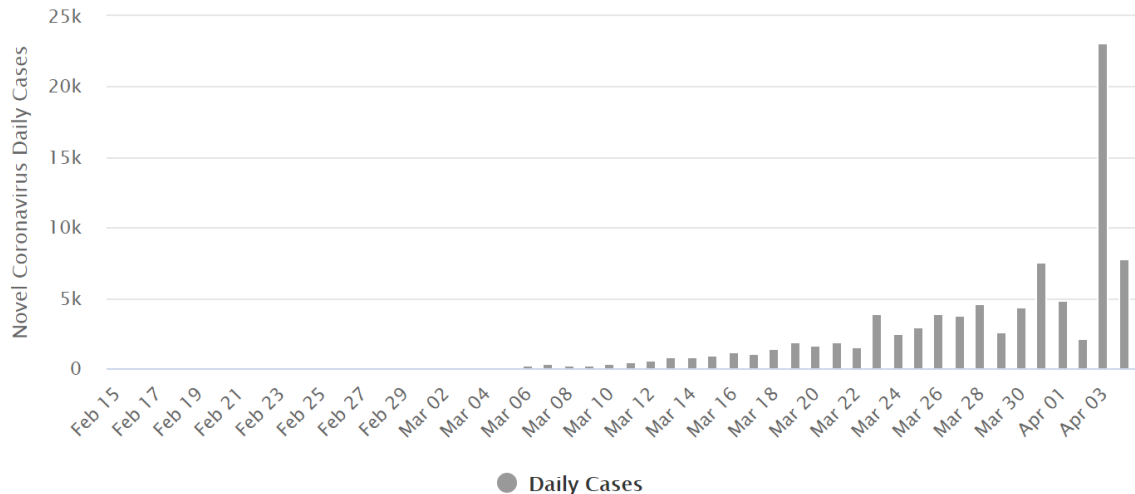




# Daily New Cases in France

## Daily New Cases

Cases per Day  
Data as of 0:00 GMT+0

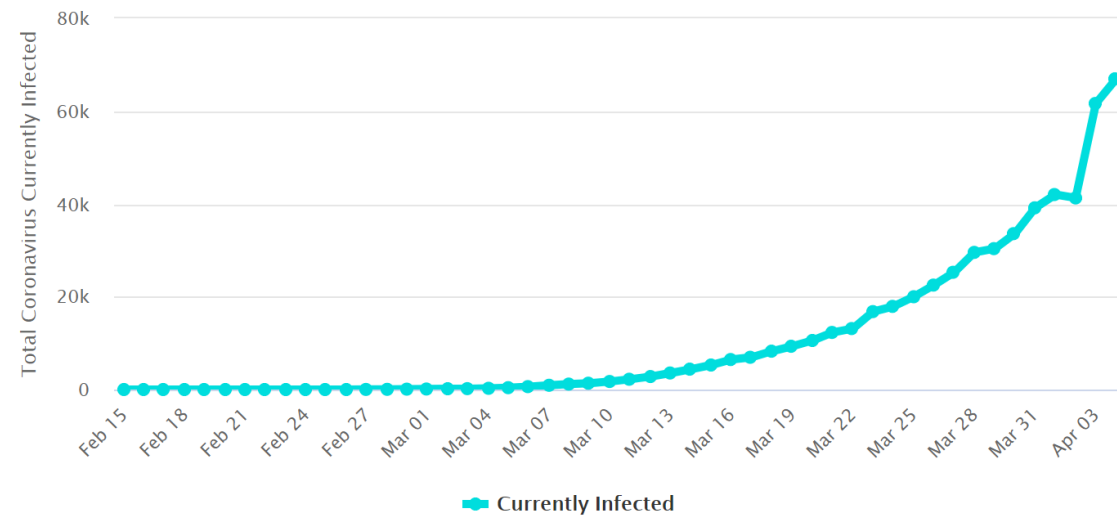


# 5. France

## Active Cases in France

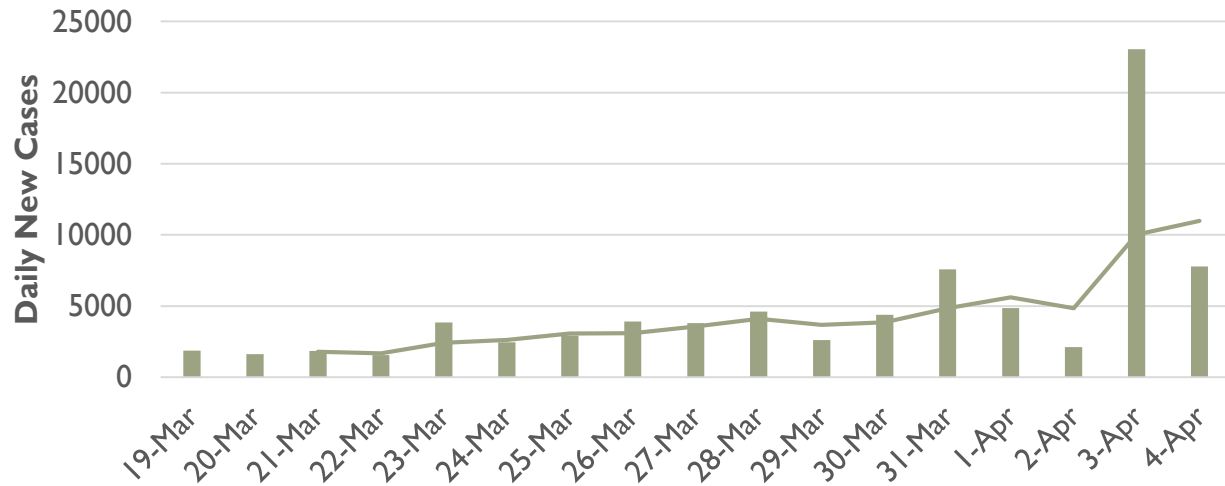
### Active Cases

(Number of Infected People)



## 3-Day Moving Average Trendline

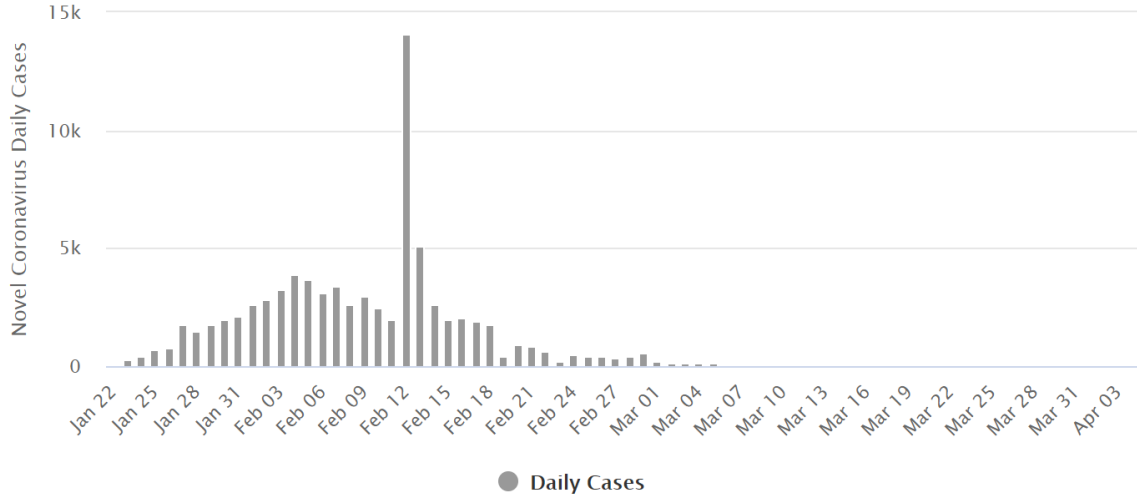
France 3 per. Mov. Avg. (Daily New Cases)



# Daily New Cases in China

### Daily New Cases

Cases per Day  
Data as of 0:00 GMT+0

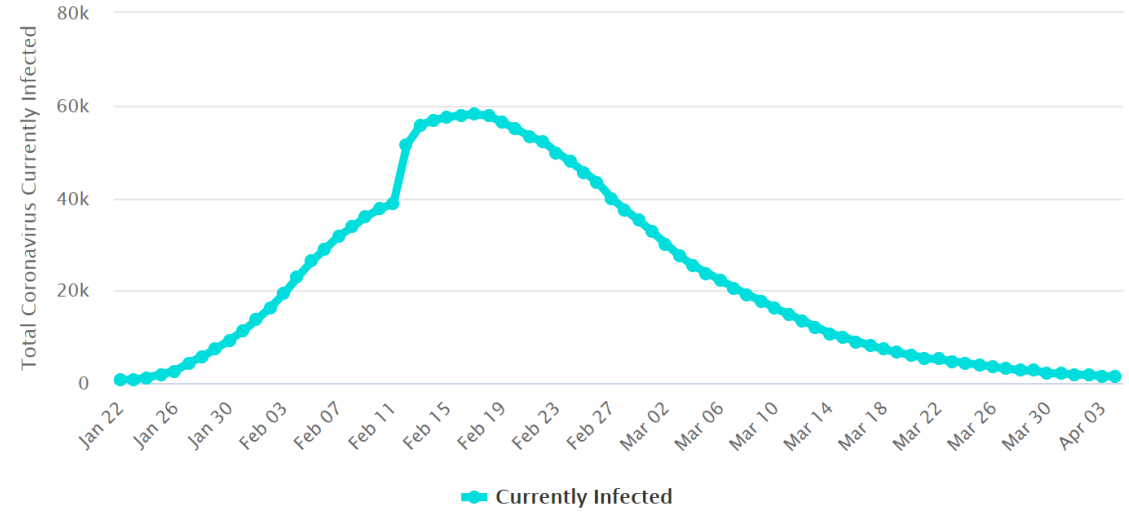


# 6. China

### Active Cases in China

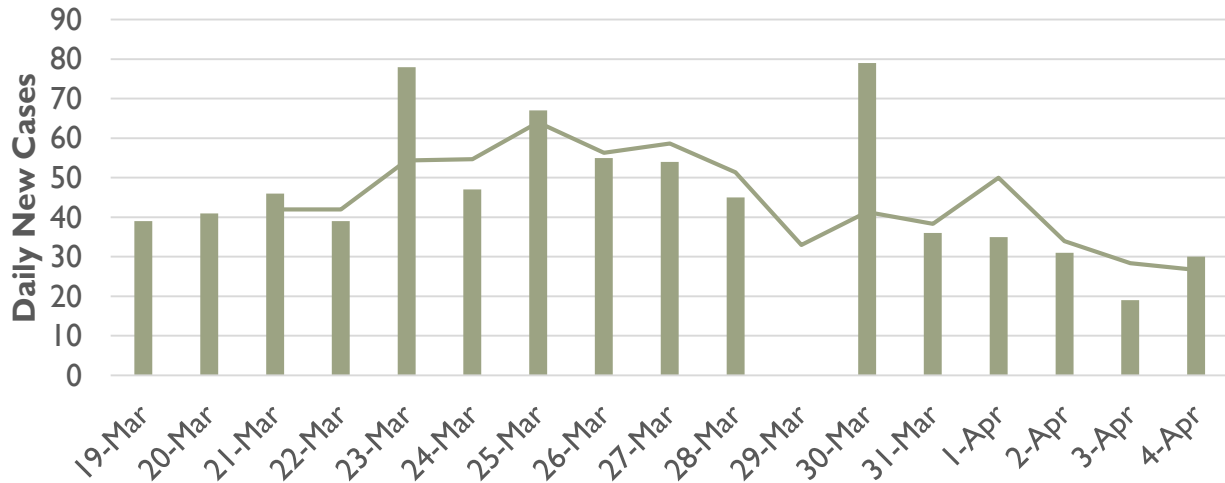
### Active Cases

(Number of Infected People)

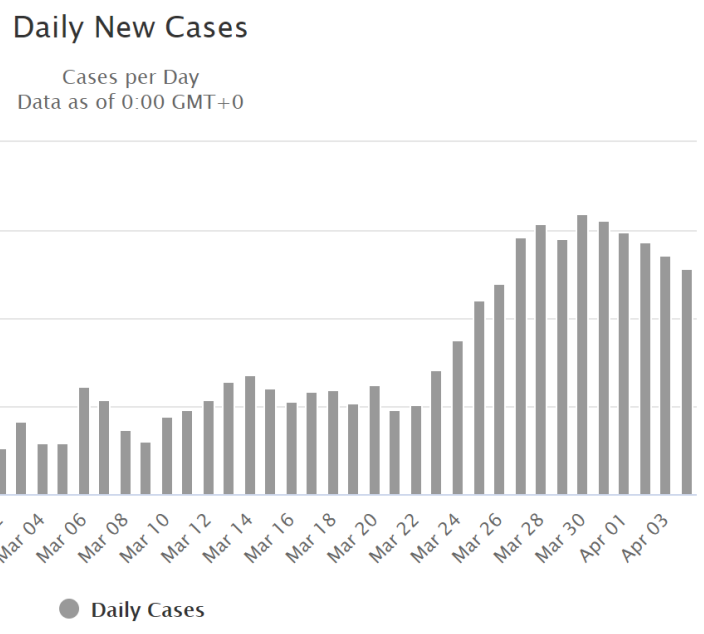


### 3-Day Moving Average Trendline

China 3 per. Mov. Avg. (Daily New Cases)

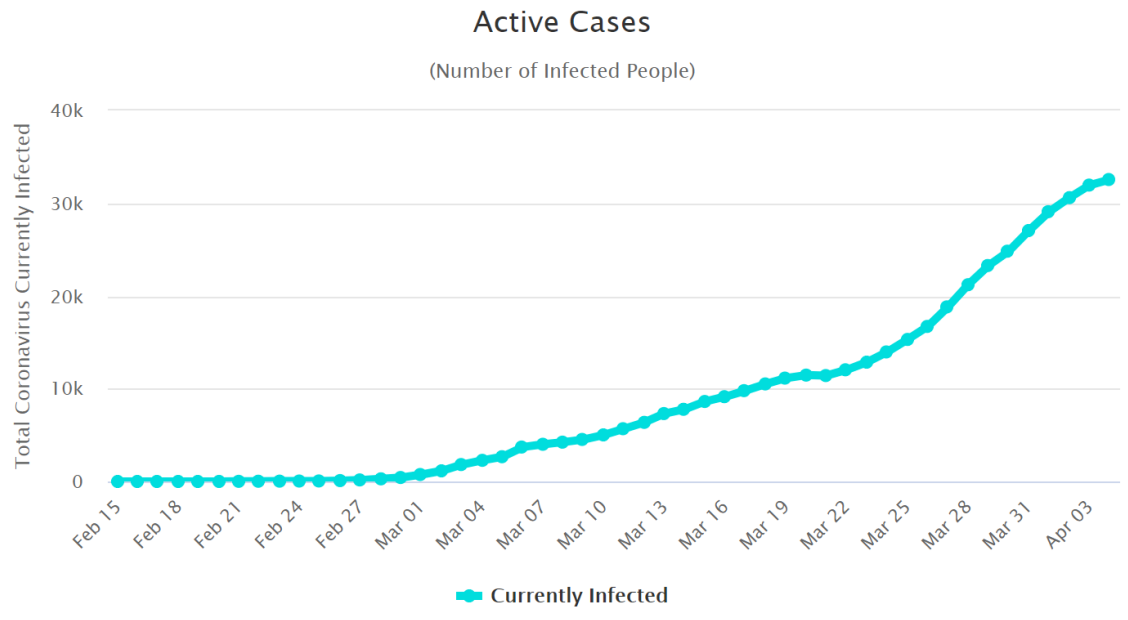


# Daily New Cases in Iran

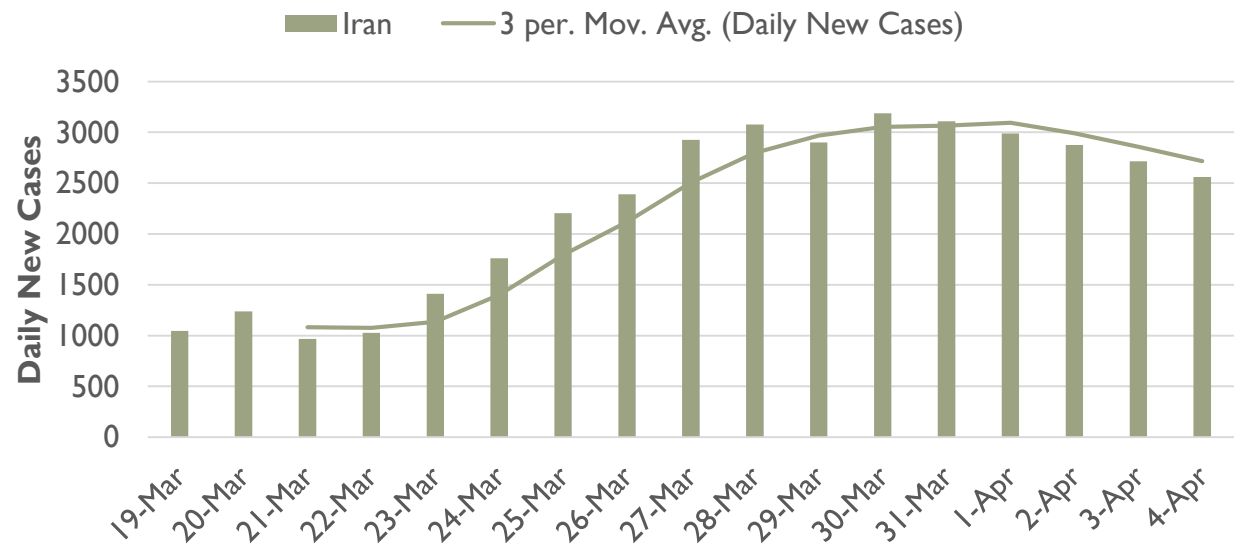


# 7. Iran

## Active Cases in Iran



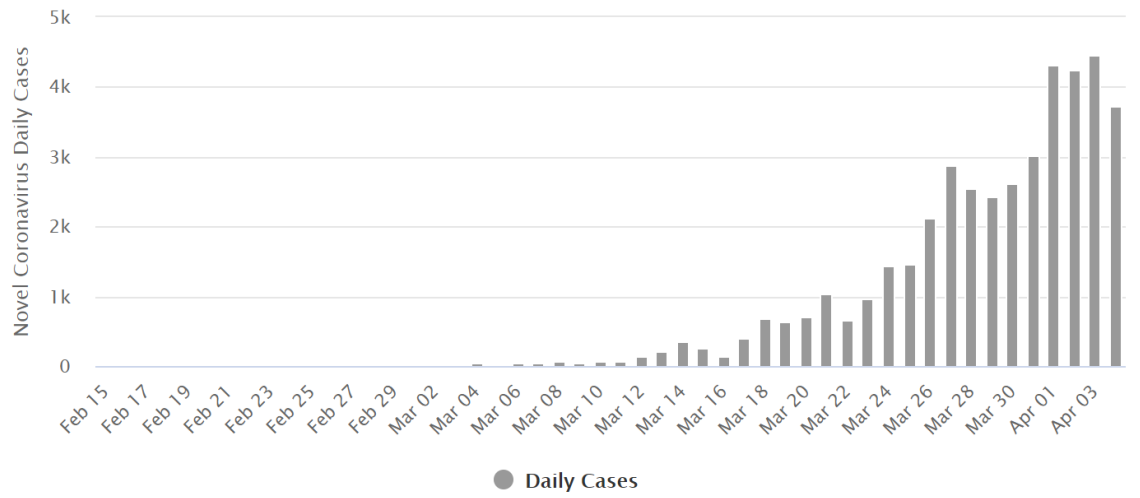
## 3-Day Moving Average Trendline



# Daily New Cases in the United Kingdom

## Daily New Cases

Cases per Day  
Data as of 0:00 GMT+0

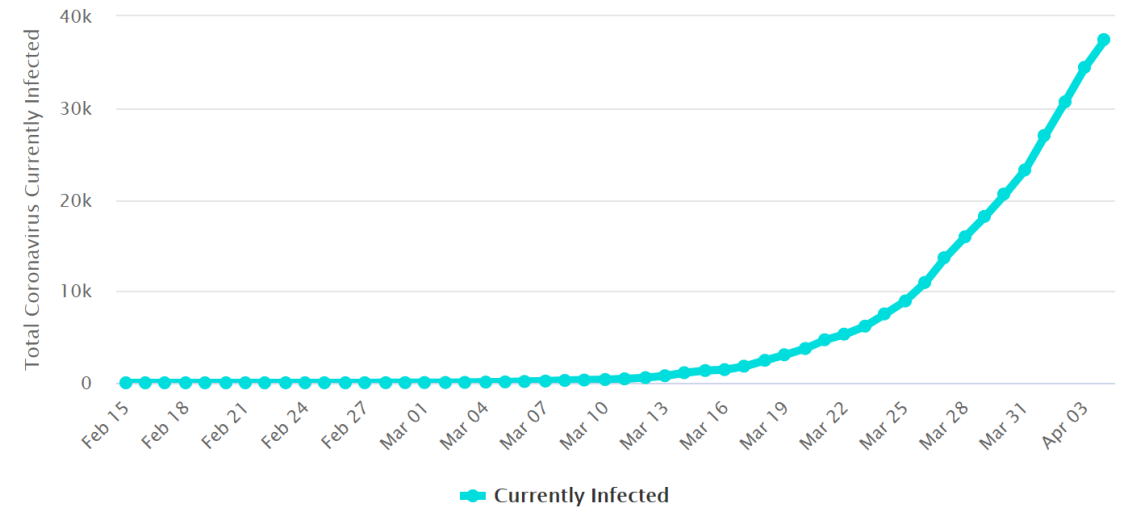


# 8. UK

## Active Cases in the United Kingdom

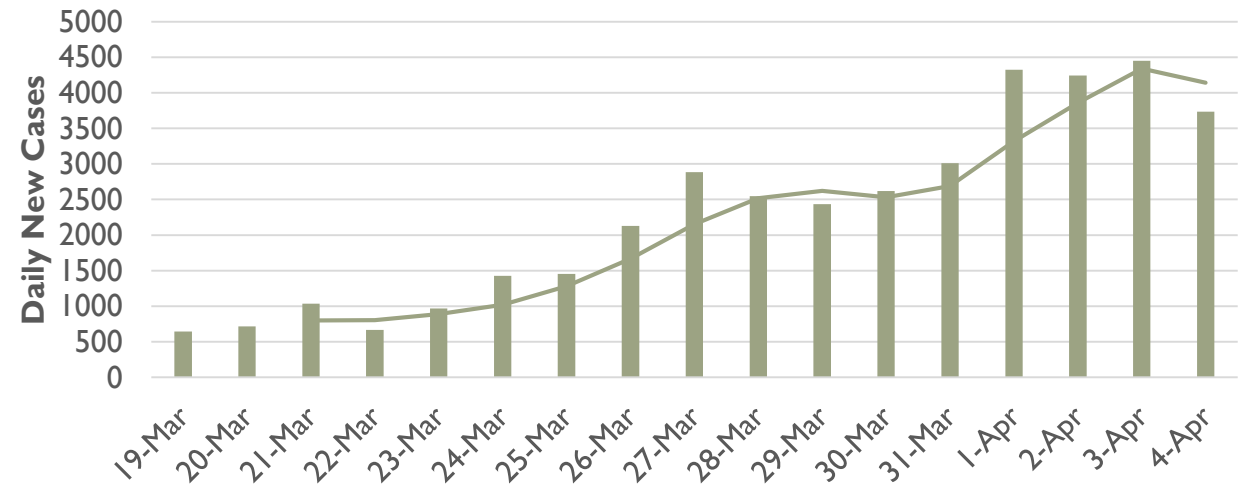
### Active Cases

(Number of Infected People)



## 3-Day Moving Average Trendline

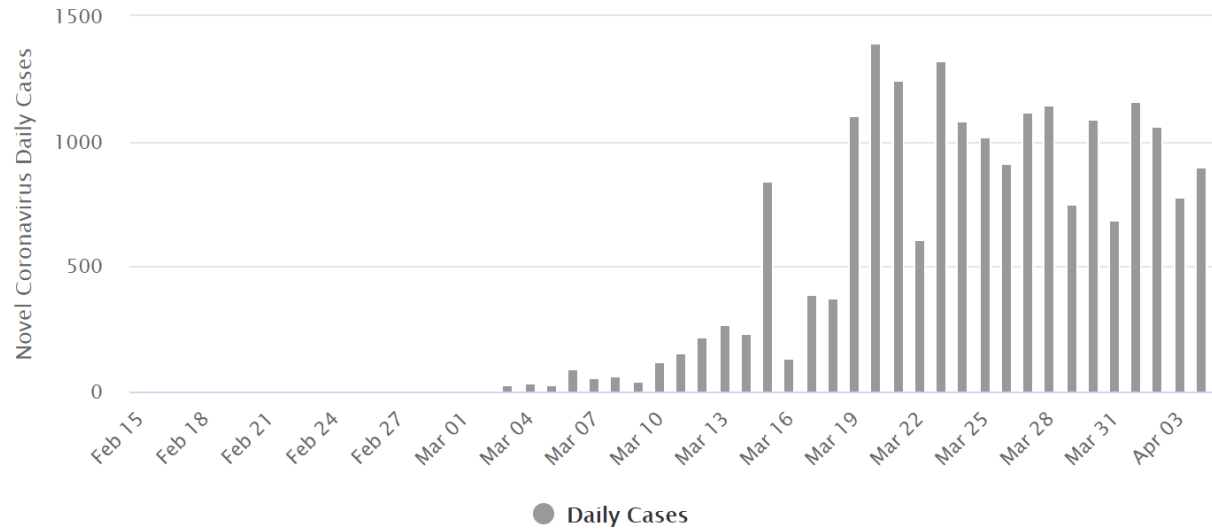
UK 3 per. Mov. Avg. (Daily New Cases)



# Daily New Cases in Switzerland

## Daily New Cases

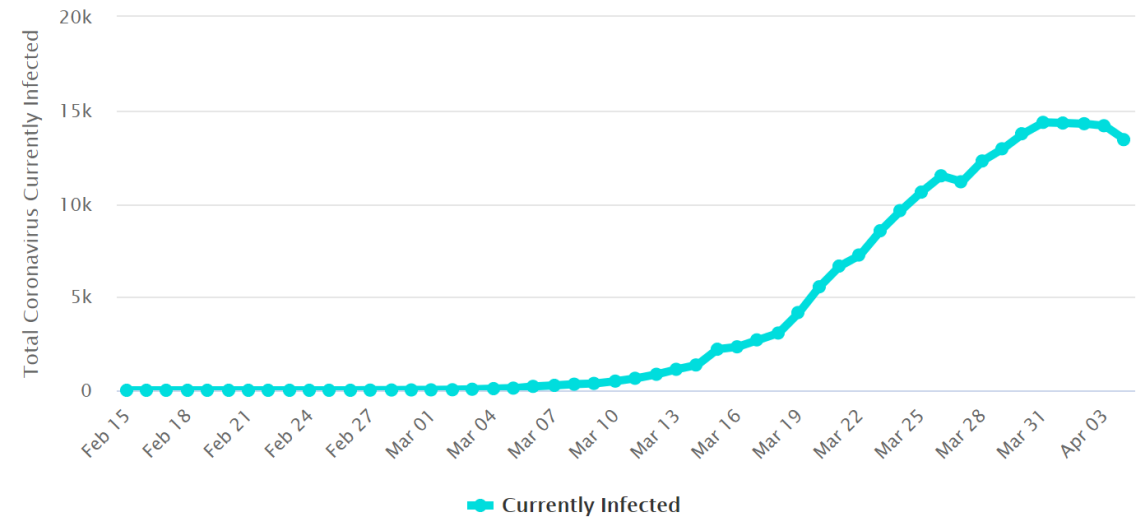
Cases per Day  
Data as of 0:00 GMT+0



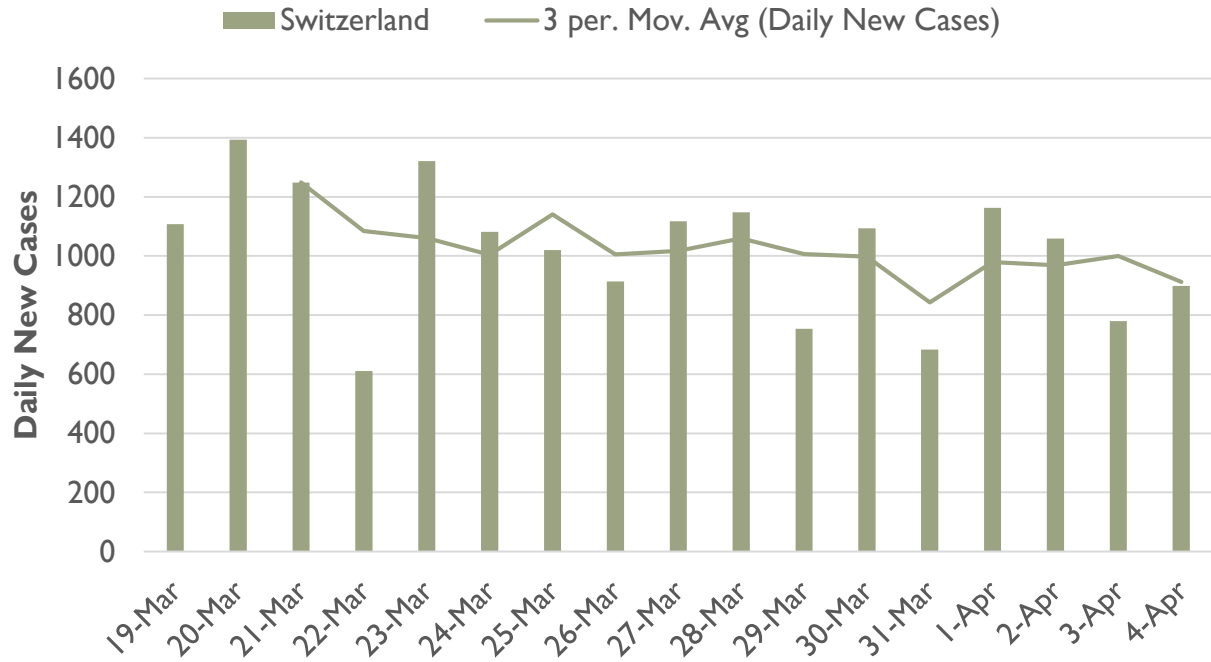
# 9. Switzerland

## Active Cases in Switzerland

Active Cases  
(Number of Infected People)

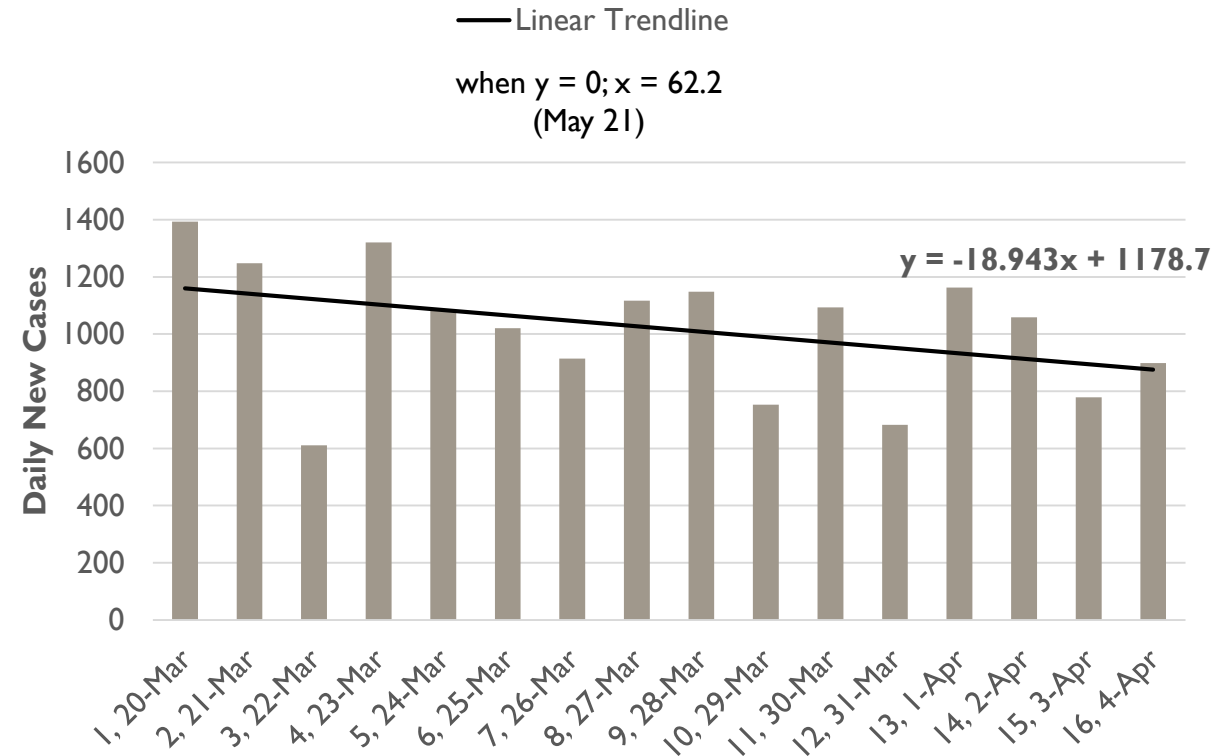


3-Day Moving Average Trendline

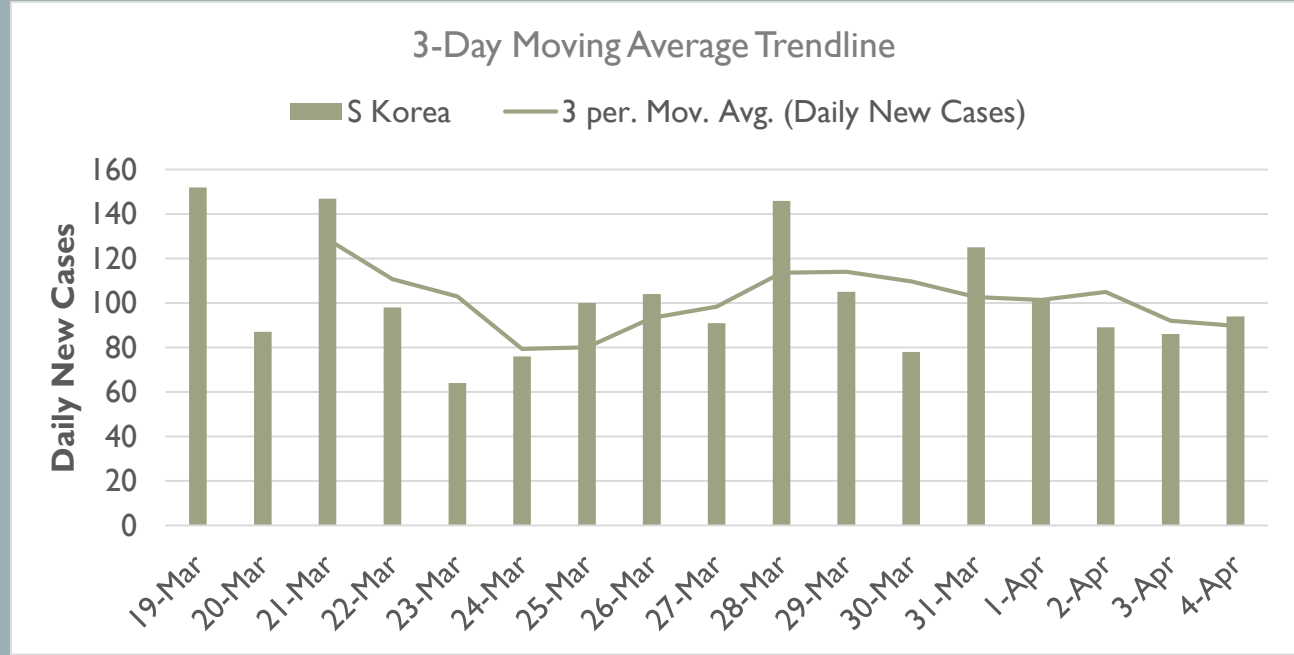
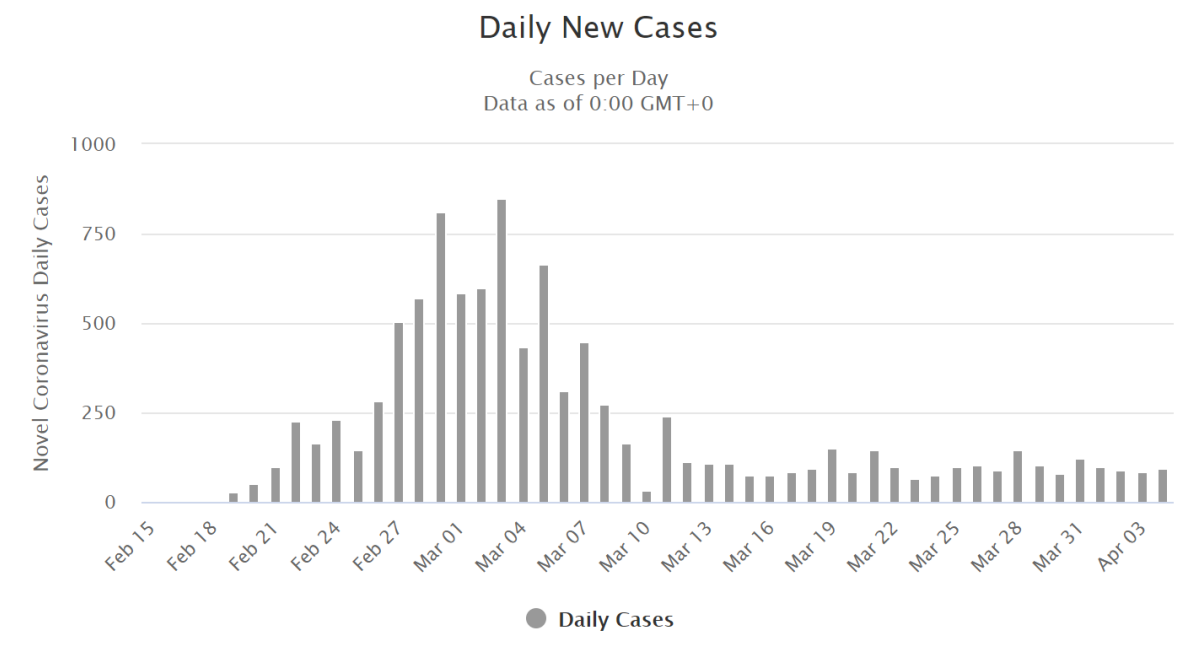


# Trendlines for Switzerland

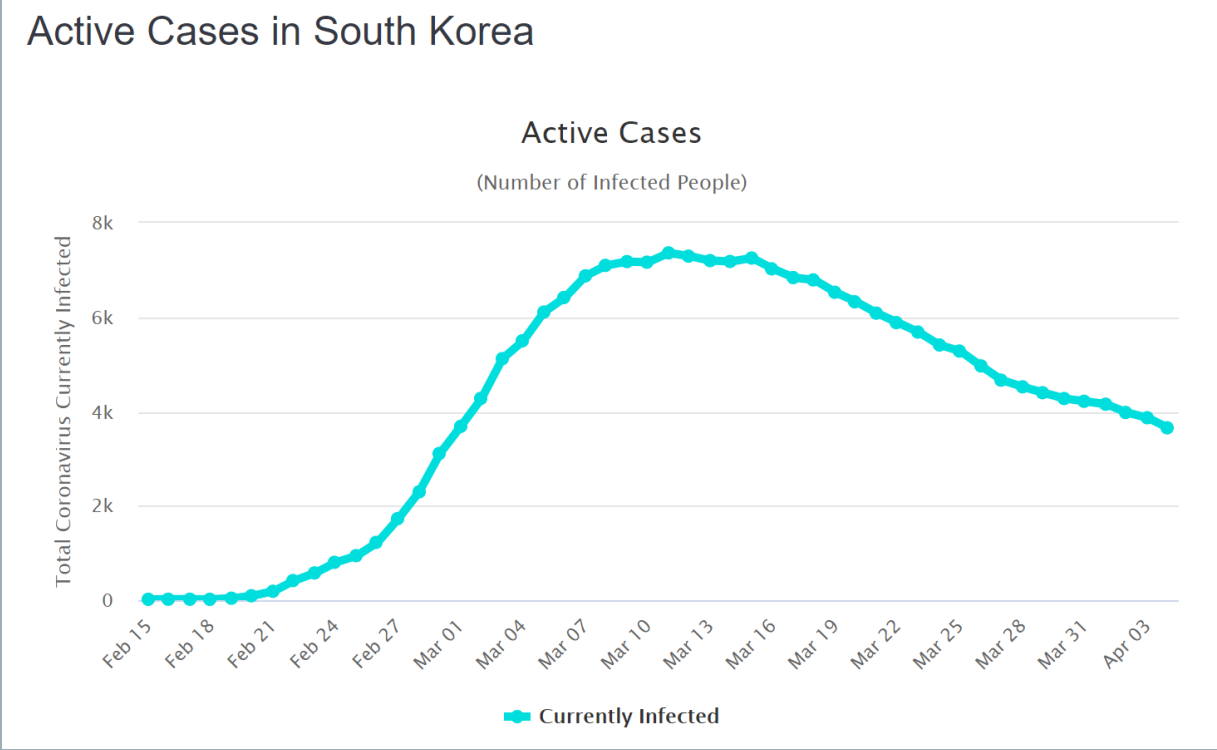
Switzerland Bar Chart of Daily New Cases from Peak till Today



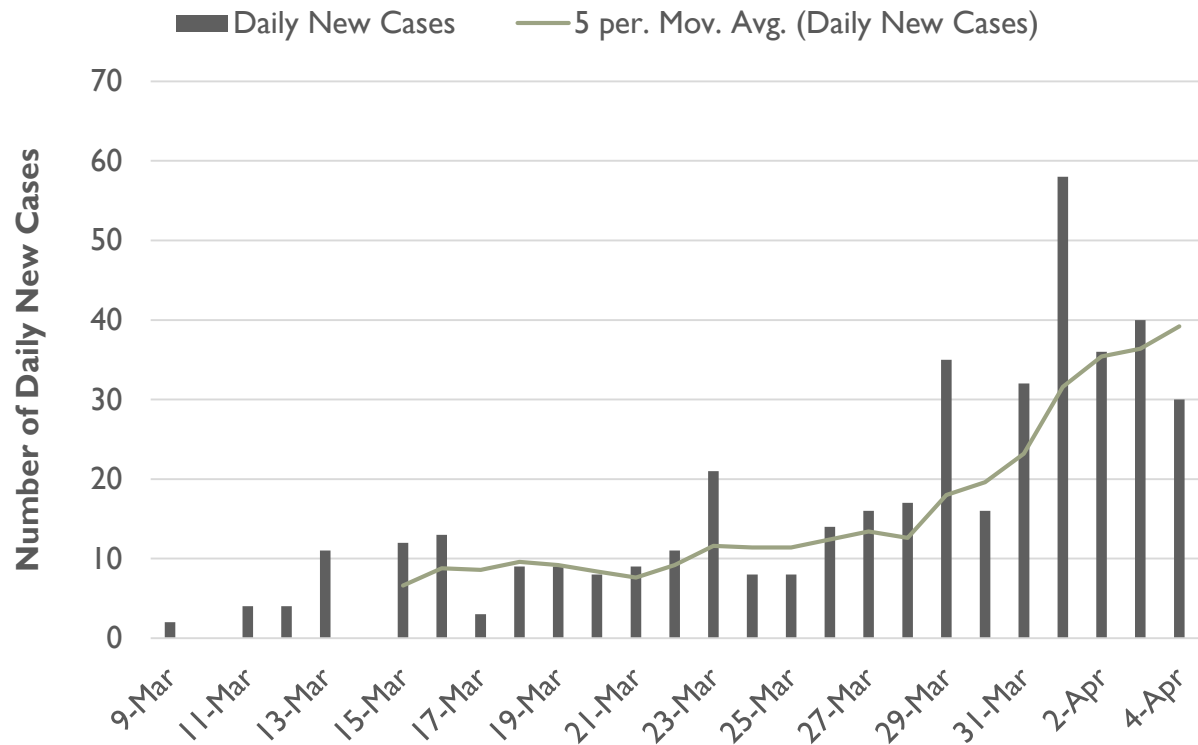
# Daily New Cases in South Korea



# South Korea



# Daily New Cases in Cyprus

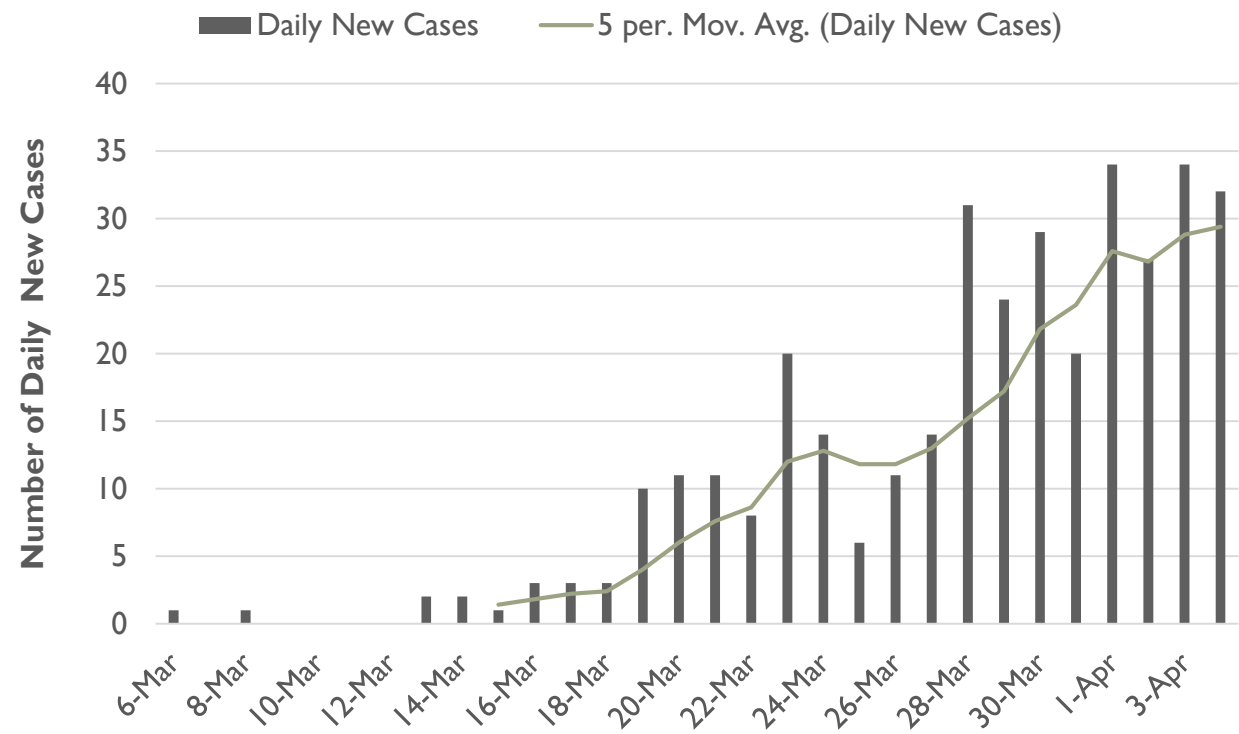


# Cyprus

Correlation,  $r$  (Between Cyprus and Hawaii) = 0.781  
 $r$  is significant at  $\alpha = 5\%$

# Hawaii

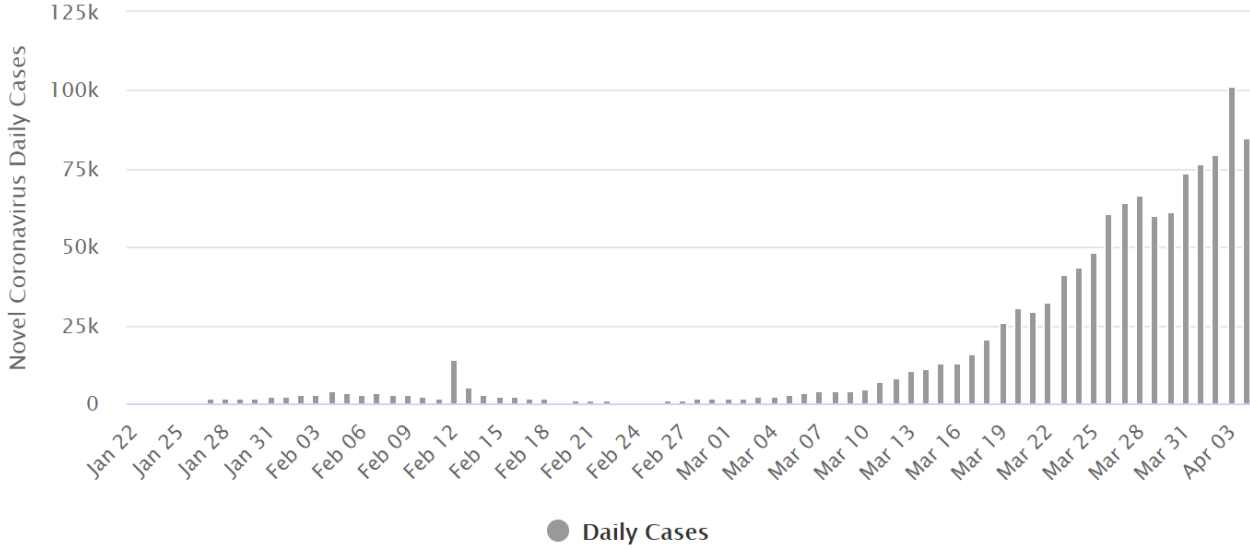
# Daily New Cases in Hawaii





## Daily New Cases

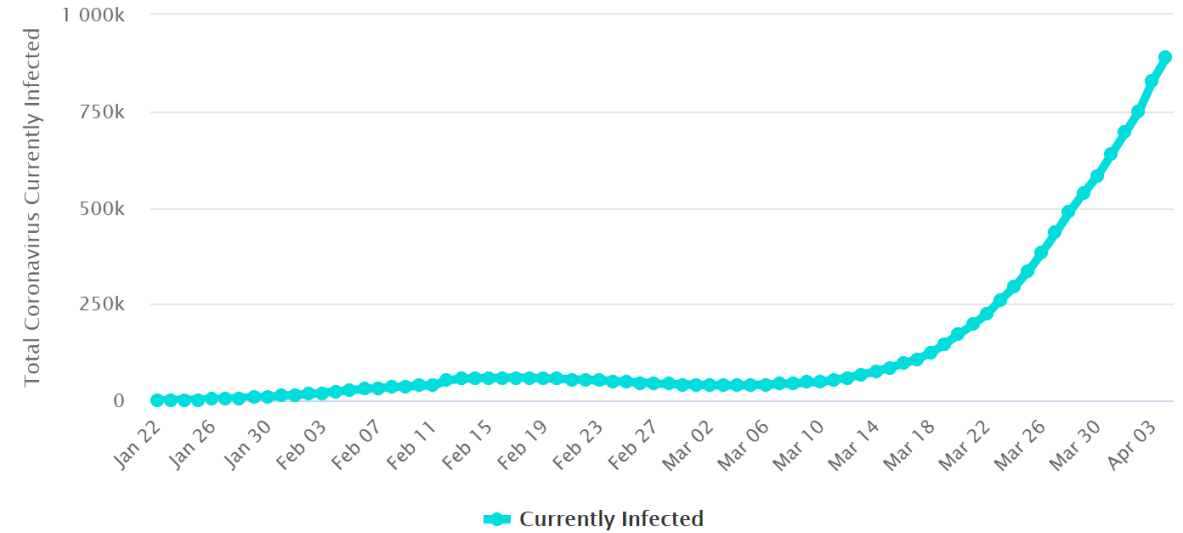
Cases per Day  
Data as of 0:00 GMT+0



# Worldwide

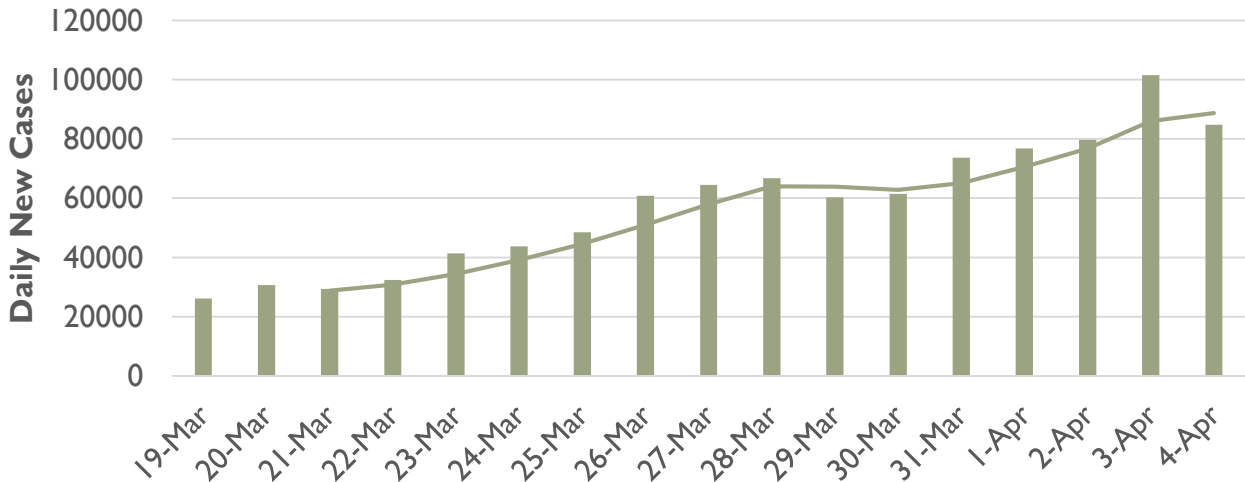
## Active Cases

(Number of Infected People)



## 3-Day Moving Average Trendline

Worldwide 3 per. Mov. Avg. (Daily New Cases)



**Table 1.a****GROWTH IN NEW CASES SINCE THE DAY BEFORE**

	3/19	3/20	3/21	3/22	3/23	3/24	3/25	3/26	3/27	3/28	3/29	3/30	3/31	4/1	4/2	4/3	4/4
USA	1.591	1.235	0.862	1.936	1.089	1.091	1.204	1.290	1.085	1.041	1.024	1.022	1.216	1.070	1.128	1.081	1.059
Spain	1.124	1.056	1.123	0.834	1.946	1.087	1.077	1.109	0.959	0.947	0.915	1.141	1.015	1.029	0.970	0.898	0.977
Italy	1.265	1.125	1.095	0.848	0.861	1.096	0.993	1.191	0.953	1.011	0.873	0.776	1.001	1.180	0.976	0.982	1.048
Germany	1.011	1.513	0.556	0.997	1.667	0.941	1.101	1.527	1.048	0.984	0.695	0.939	1.106	1.254	1.104	0.934	0.775
France	1.325	0.869	1.142	0.844	2.462	0.638	1.196	1.339	0.971	1.211	0.564	1.684	1.732	0.641	0.435	10.898	0.338
China	1.15	1.051	1.122	0.848	2.000	0.603	1.426	0.821	0.982	0.833	0.000	---	0.456	0.972	0.886	0.613	1.579
Iran	0.878	1.183	0.781	1.064	1.373	1.249	1.252	1.083	1.225	1.051	0.943	1.098	0.976	0.961	0.962	0.944	0.943
UK	0.951	1.110	1.450	0.643	1.454	1.476	1.018	1.466	1.355	0.882	0.956	1.076	1.149	1.437	0.981	1.049	0.839
Switzerland	2.968	1.258	0.896	0.490	2.162	0.819	0.943	0.896	1.222	1.028	0.656	1.452	0.625	1.703	0.911	0.736	1.154
S Korea	1.634	0.572	1.690	0.667	0.653	1.188	1.316	1.040	0.875	1.604	0.719	0.743	1.603	0.808	0.881	0.966	1.093
Cyprus	1.000	0.889	1.125	1.375	1.909	0.381	1.000	1.750	1.143	1.063	2.059	0.457	2.000	1.813	0.621	1.111	0.750
Hawaii	3.333	1.100	1.000	0.727	2.500	0.700	0.429	1.833	1.273	2.214	0.774	1.208	0.690	1.700	0.794	1.259	0.941
Worldwide	1.271	1.174	0.960	1.102	1.275	1.058	1.107	1.254	1.061	1.035	0.903	1.019	1.199	1.043	1.037	1.274	0.835

# Table 1.b

## AVERAGE GROWTH OF LAST FIVE DAYS

	3/23-27	3/24-28	3/25-29	3/26-30	3/27-31	3/28-4/1	3/29-4/2	3/30-4/3	3/31-4/4
USA	1.152	1.142	1.129	1.092	1.077	1.074	1.092	1.103	1.111
Spain	1.236	1.036	1.002	1.014	0.996	1.009	1.014	1.011	0.978
Italy	1.019	1.049	1.004	0.961	0.923	0.968	0.961	0.983	1.037
Germany	1.257	1.120	1.071	1.039	0.954	0.996	1.019	1.067	1.035
France	1.321	1.071	1.056	1.154	1.232	1.166	1.011	3.078	2.809
China	1.166	0.933	0.812	0.659	0.568	0.565	0.578	0.732	0.901
Iran	1.236	1.172	1.111	1.080	1.059	1.006	0.988	0.988	0.957
UK	1.354	1.239	1.135	1.147	1.084	1.100	1.120	1.138	1.091
Switzerland	1.208	0.982	0.949	1.051	0.996	1.093	1.069	1.085	1.026
S Korea	1.014	1.205	1.111	0.996	1.109	1.095	0.951	1.000	1.070
Cyprus	1.237	1.067	1.403	1.294	1.344	1.478	1.390	1.200	1.259
Hawaii	1.347	1.290	1.305	1.461	1.232	1.317	1.033	1.130	1.077
Worldwide	1.151	1.103	1.072	1.054	1.043	1.040	1.040	1.115	1.078

## Table 2

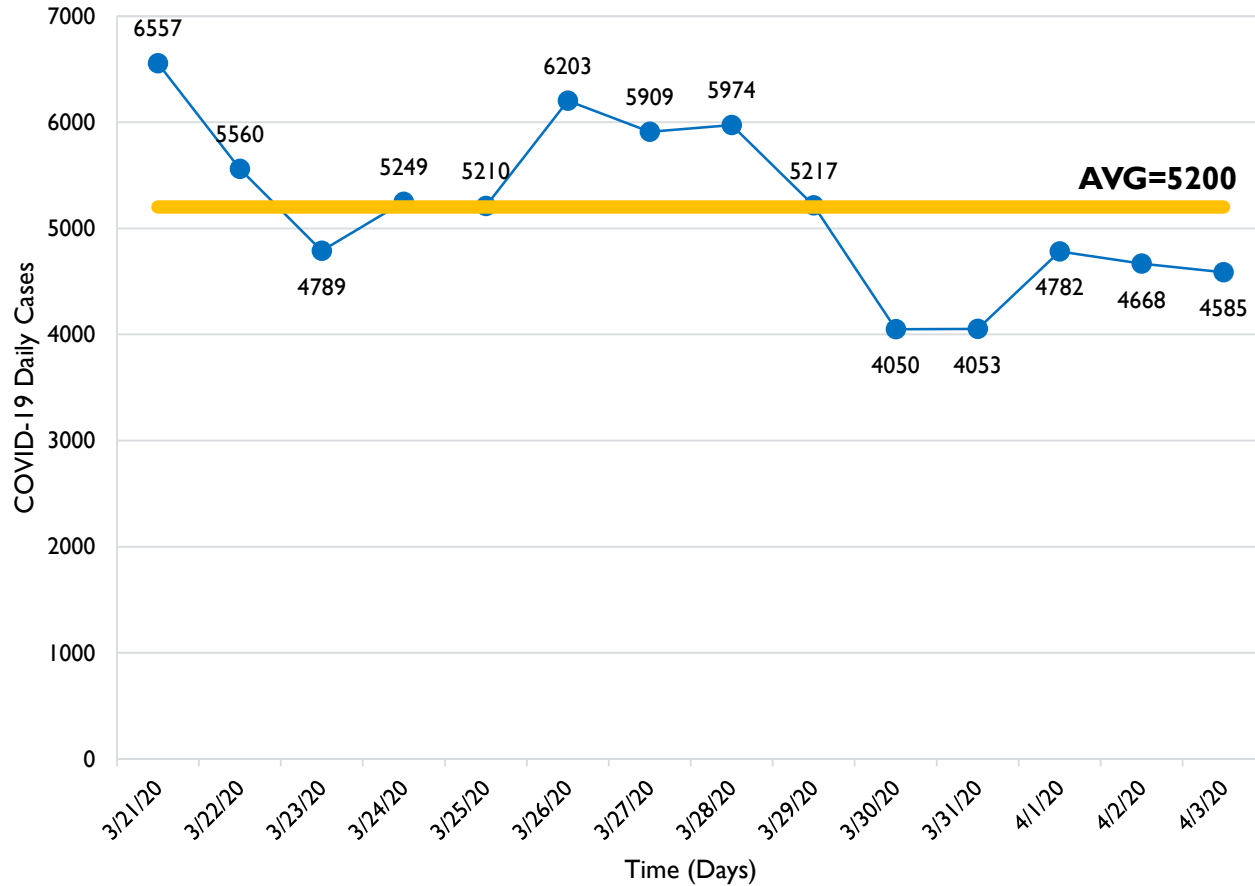
### **RATIO OF THE AVERAGE NEW CASES OF RECENT THREE DAYS TO MAX DAILY PEAK**

	3/22	3/23	3/24	3/25	3/26	3/27	3/28	3/29	3/30	3/31	4/1	4/2	4/3	4/4
USA	0.701	0.796	0.921	0.865	0.806	0.879	0.949	0.972	0.978	0.876	0.901	0.905	0.915	0.939
Spain	0.908	0.710	0.798	0.927	0.913	0.954	0.956	0.900	0.896	0.914	0.968	0.972	0.938	0.889
Italy	0.920	0.859	0.793	0.775	0.847	0.881	0.919	0.869	0.775	0.677	0.655	0.686	0.713	0.715
Germany	0.703	0.678	0.782	0.917	0.750	0.860	0.979	0.889	0.770	0.679	0.747	0.861	0.930	0.871
France	0.900	0.629	0.681	0.800	0.790	0.906	0.892	0.797	0.838	0.640	0.740	0.640	0.434	0.476
China	0.003	0.004	0.004	0.005	0.004	0.004	0.004	0.002	0.003	0.003	0.004	0.002	0.002	0.002
Iran	0.789	0.804	0.795	0.813	0.887	0.857	0.909	0.965	0.959	0.962	0.971	0.939	0.897	0.853
UK	0.777	0.859	0.715	0.883	0.784	0.747	0.873	0.909	0.878	0.893	0.767	0.892	0.975	0.931
Switzerland	0.778	0.761	0.721	0.819	0.722	0.730	0.761	0.722	0.716	0.605	0.703	0.695	0.718	0.655
S Korea	0.130	0.121	0.093	0.094	0.110	0.116	0.134	0.134	0.129	0.121	0.119	0.123	0.108	0.105
Cyprus	0.718	0.651	0.635	0.587	0.476	0.603	0.746	0.648	0.648	0.790	0.609	0.724	0.770	0.609
Hawaii	0.909	0.650	0.700	0.667	0.517	0.517	0.602	0.742	0.903	0.785	0.814	0.794	0.931	0.912
Worldwide	0.950	0.832	0.896	0.919	0.839	0.898	0.959	0.956	0.941	0.884	0.919	0.963	0.847	0.873

# COVID-19 CONTROL CHART ANALYSIS

# Italy

Control Chart of COVID-19 Daily Cases in Italy (3/21/20 - 4/3/20)

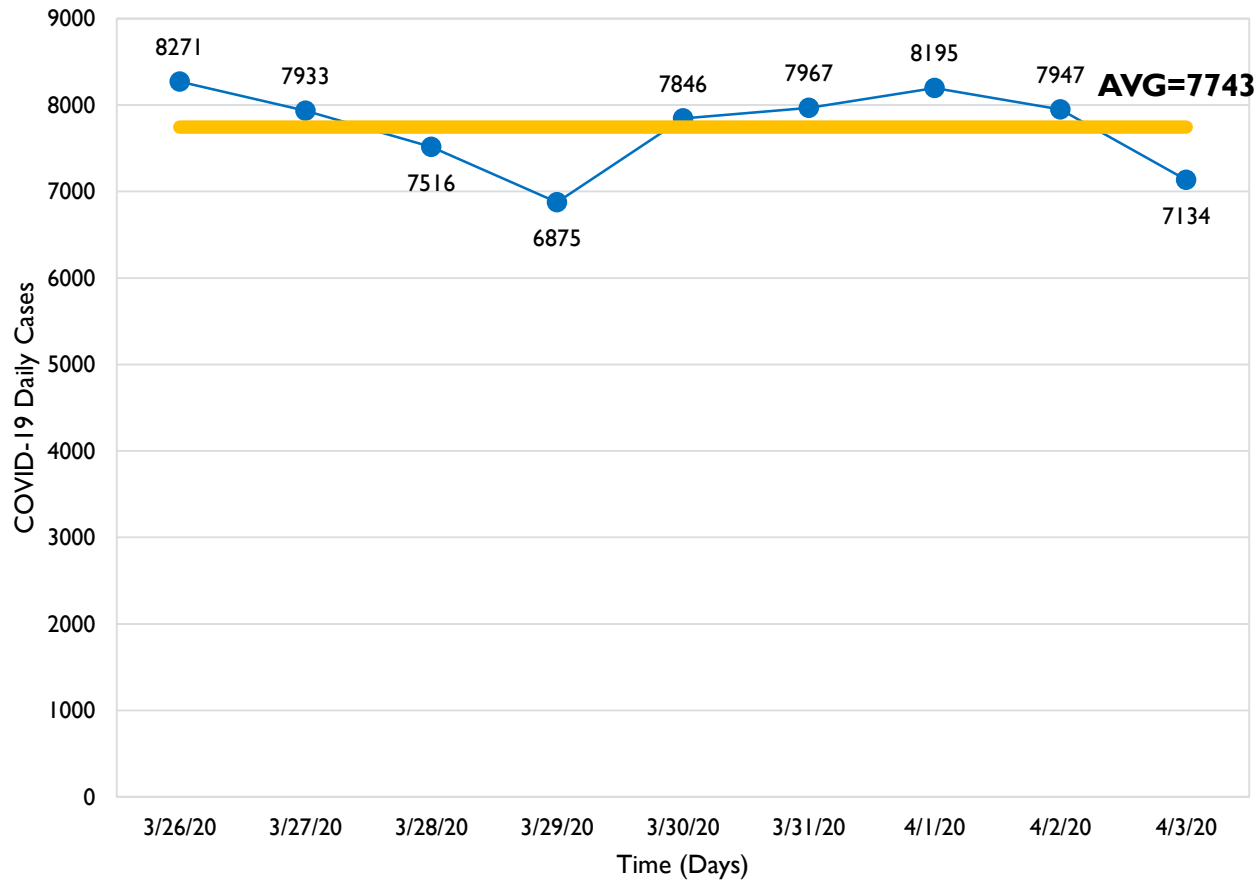


## Control Chart Analysis:

- Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
- Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  - Example: Last five days (from 3/30/20 to 4/3/20) are all below the control line, which suggests an 'out-of-control' pattern for COVID-19 cases in Italy. A good 'out-of-control' sign. The linear trend line has a downward slope.

# Spain

Control Chart of COVID-19 Daily Cases in Spain (3/26/20 - 4/3/20)

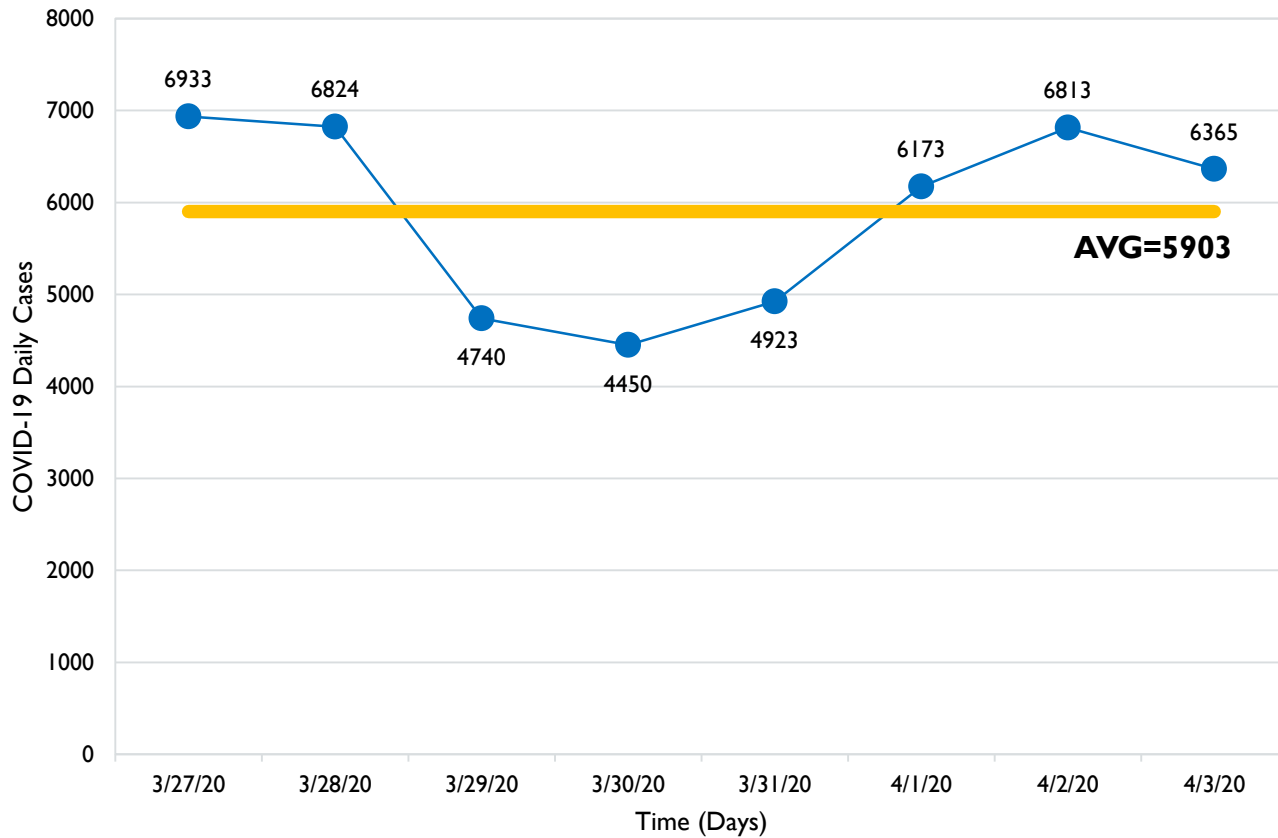


## Control Chart Analysis:

- Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
- Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  - Example: Four points (from 3/30/20 to 4/2/20) are above the control line, which suggests an 'out-of-control' pattern for COVID-19 cases in Spain (not too good). But, the linear trend line has a downward slope.

# Germany

Control Chart of COVID-19 Daily Cases in Germany (3/27/20 - 4/3/20)



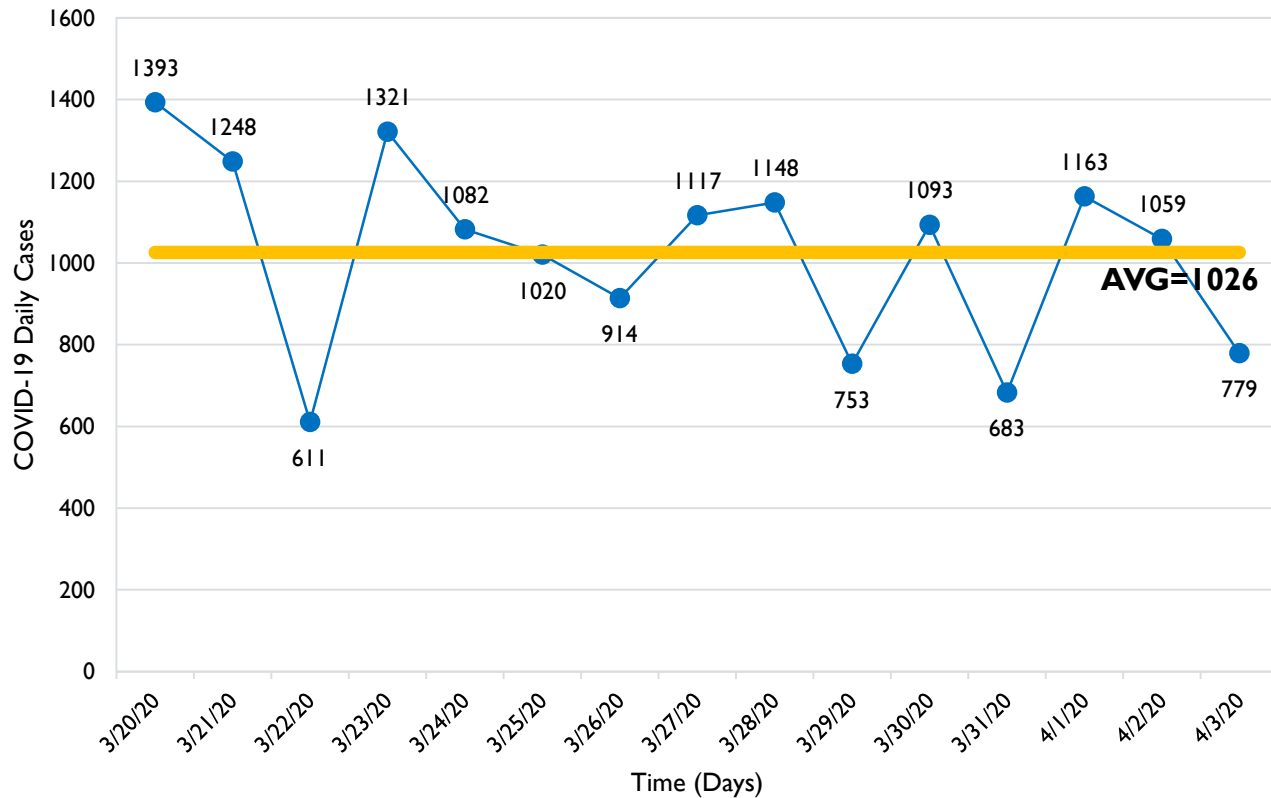
## Control Chart Analysis:

- Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
  - There is an 'out-of-control' pattern in both directions. But, the linear trend line has a downward slope.



# Switzerland

Control Chart of COVID-19 Daily Cases in Switzerland (3/20/20 - 4/3/20)



## Control Chart Analysis:

- Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
- Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  - Example: Four points (from 3/20/20 to 3/24/20) are above the control line, which suggests an 'out-of-control' pattern for COVID-19 cases in Switzerland (not good). But, the linear trend line has a downward slope.