

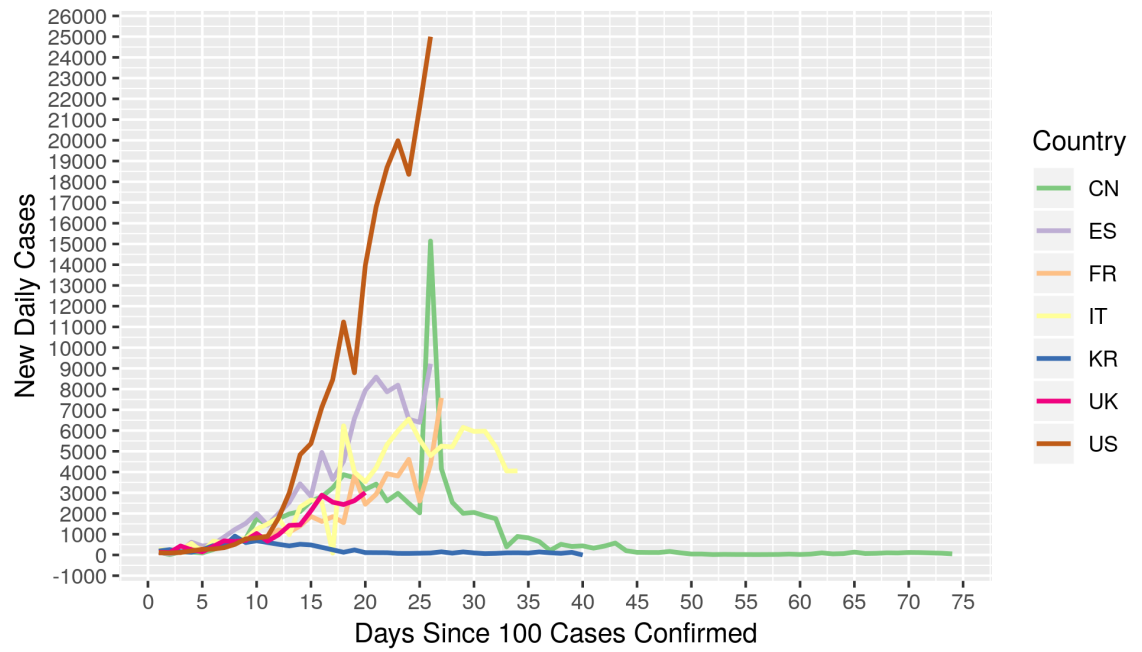
Covid Data Notes 2020-04-02

I reran my COVID-19 time series plots this evening from the ECDC's latest data set of counts of daily new confirmed cases and daily deaths, grouped by country.

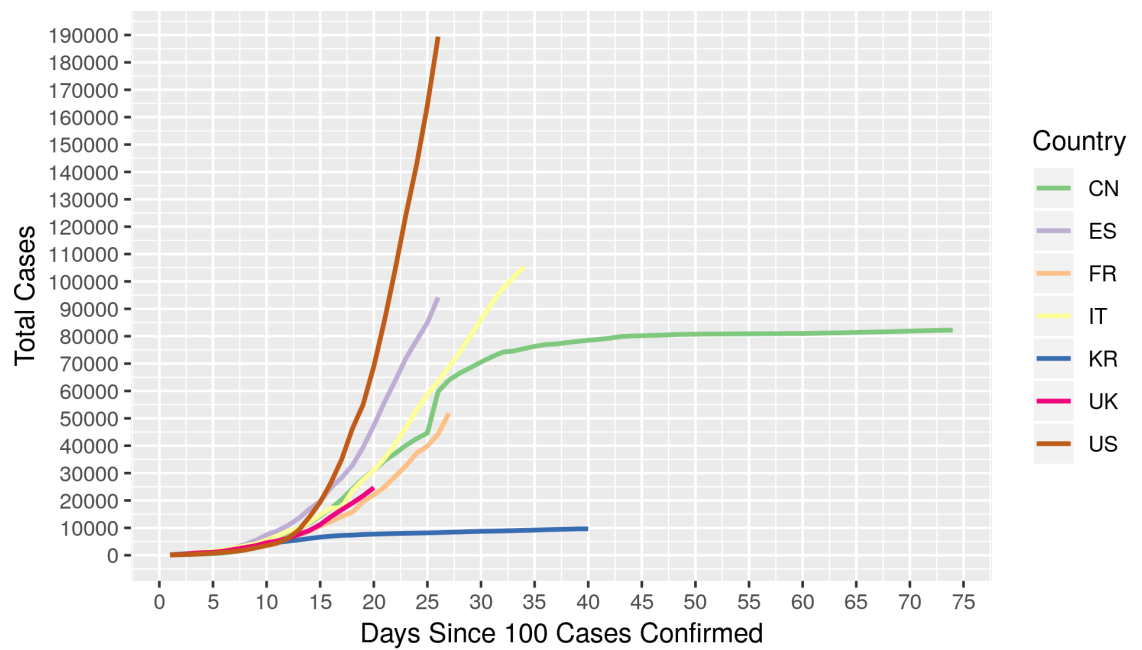
I thought I might post an update since some folks reached out and expressed some interest last time I generated the time series plots.

Confirmed Cases

New Daily COVID-19 Cases by Country, as of 2020-04-01



Total COVID-19 Cases by Country, as of 2020-04-01



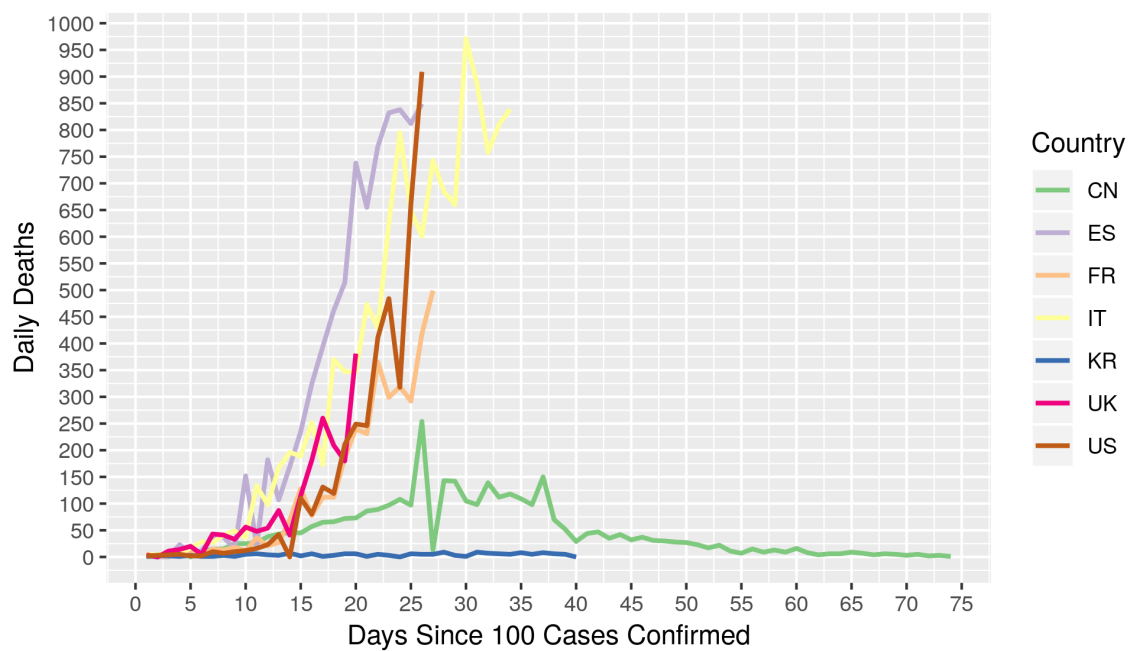
As I mentioned last time I generated time-series plots of confirmed COVID-19 cases, it seems to me that the counts of confirmed new cases are very likely under-reported, and I would imagine that it is difficult to determine how much lower they are than the number of actual covid infections.

Every couple days I see news reports that covid cases or deaths seem to be slowing down or stabilizing in Italy or in some other country, but I think it's premature to declare with confidence that new COVID-19 are slowing down in any of the countries in these charts other than China or South Korea. Unless China is grossly under-reporting cases, it seems that the peak of new daily transmissions has passed in China. There are still transmissions, and I believe there could be another outbreak if most Chinese workers return to work without stringent enforcement of social distancing measures in workplaces, but right now I think it could be reasonably argued that peak infections have passed in China.

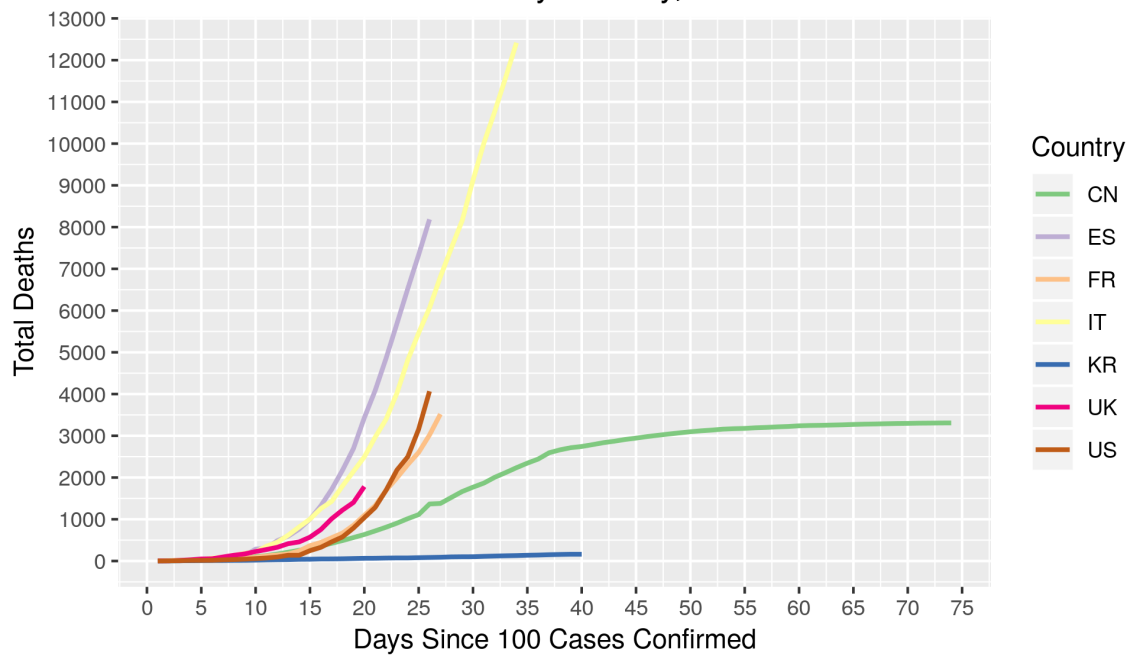
It seems that new cases are still growing in Europe and the USA, and I think it is way too early to reasonably conclude that new infections will soon slow down in Italy, Spain, France, the UK or the USA.

Deaths

Daily COVID-19 Deaths by Country, as of 2020-04-01



Total COVID-19 Deaths by Country, as of 2020-04-01



To me (again, I'm not a medical professional or epidemiologist), the number of daily COVID-19 deaths seems to be a more instructive data point than the number of new cases. I've read some reports that deaths may be under-reported, but it seems to me that if they are under-reported, it would be at a lesser rate than new cases.

Therefore, in the absence of universal testing or good data on counts of patients being hospitalized who are exhibiting symptoms that seem to indicate COVID-19, the numbers of daily deaths seem to me to be the best data point to analyze to determine whether infections rates are stabilizing.

I do think that it's important to keep in mind that the death rate is probably highly dependent on patients' access to ventilators and hospital care. When infection rates spike in a local area and the number of patients in the ICU exceeds the number of available ventilators, I would imagine that the death rate itself would rise and the total number of deaths would rise. This does not necessarily indicate that infection rates are still increasing, but I still think that the counts of reported daily deaths are useful for understanding whether infection rates are stabilizing.

Sadly, the number of daily deaths in Italy still seems pretty close to the peak in recent days, and the numbers of deaths in the UK, France, Spain and the USA seem to be trending upward. It does seem like overall numbers of daily deaths will continue to be high in Europe and in the USA through at least the end of April.

In the charts, it appears that France has had many fewer COVID-19 deaths since reaching 100 confirmed cases relative to Italy or Spain. However, I believe that it may be possible that Italy and Spain might have reached 100 cases sooner than they reported due to lower testing rates. Therefore, the counts of daily deaths in France could soon jump to daily counts currently seen in Italy and Spain. The number of new deaths in the USA jumped significantly in the past couple days.

Death Rate

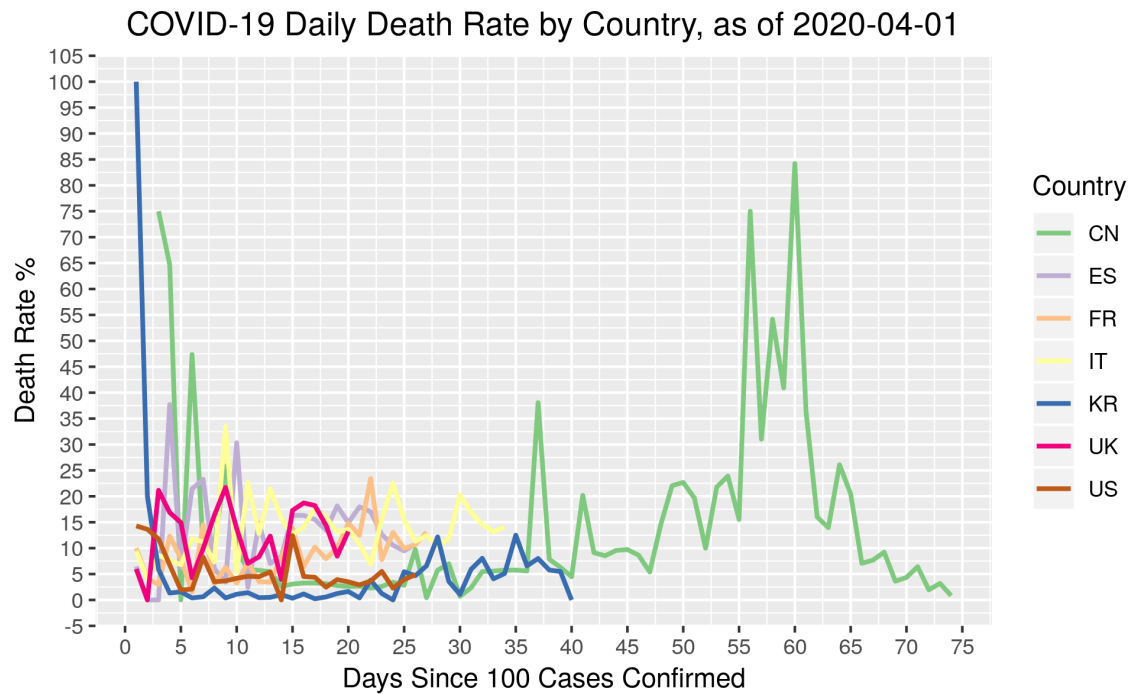


Figure 1: Total Deaths

From what I've read, high death rates either indicate that local hospital systems are overwhelmed and cannot rescue patients by using ventilators or they indicate that high numbers of infected patients are not getting tested. I am including this chart mostly because it helps me reason about how many cases are potentially being unreported.