

## **COVID-19 Weekly Newsletter**

Issue N° 161, Sunday, 2022-01-16

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Vaccinations / US States focus / NY Area update / Today's images: Northumbrian sunsets / [Notes]

### **Global overview:** [0]

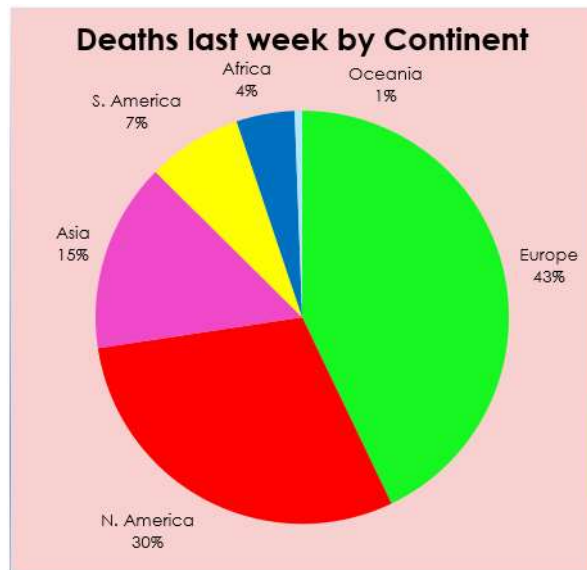
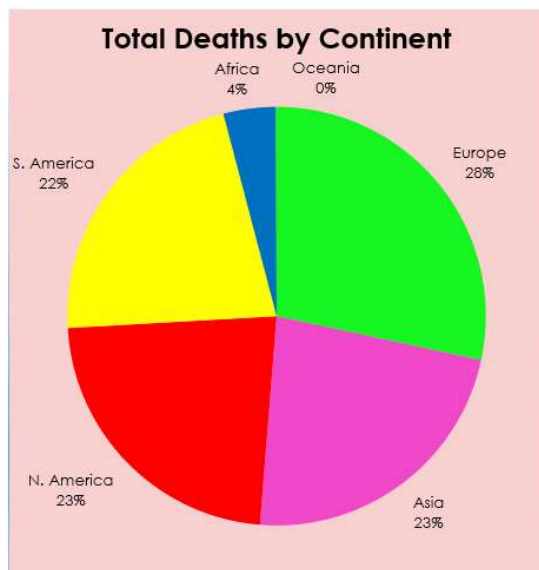
Since last time:

- The global daily death rate has been rising since 30<sup>th</sup> Dec.
- The US accounts for a lot of the rise.
- Case rates in Europe are now slowing, especially in UK.



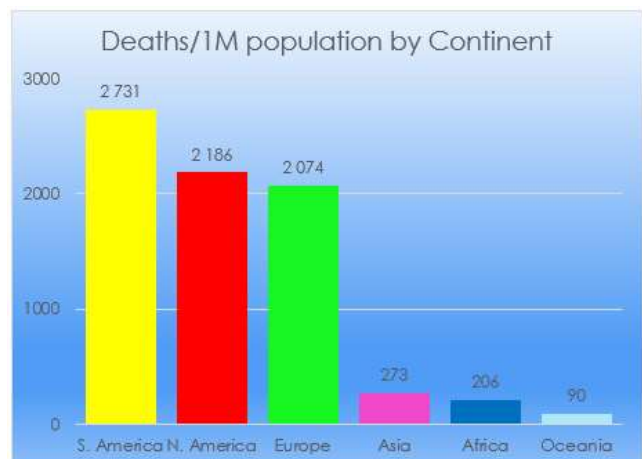
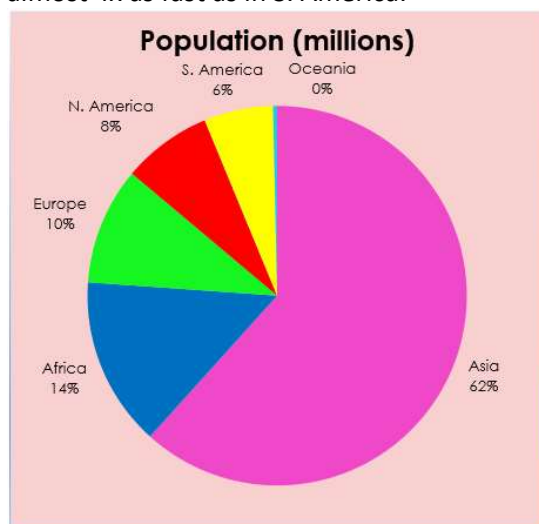
This is how deaths are distributed between the continents:

- Weekly deaths in Europe are dropping as a proportion 43% this week, down from 45% last week.
- The N. America share (read US share) has expanded from 28% to 30%.
- Unlike the previous week, more deaths occurred this week in S. America than in Africa.



Per-capita: Europe & N. America continue to catch up on S. America.

The growth rates of the European & N. American metrics are roughly equal this week, and growing almost 4x as fast as in S. America.



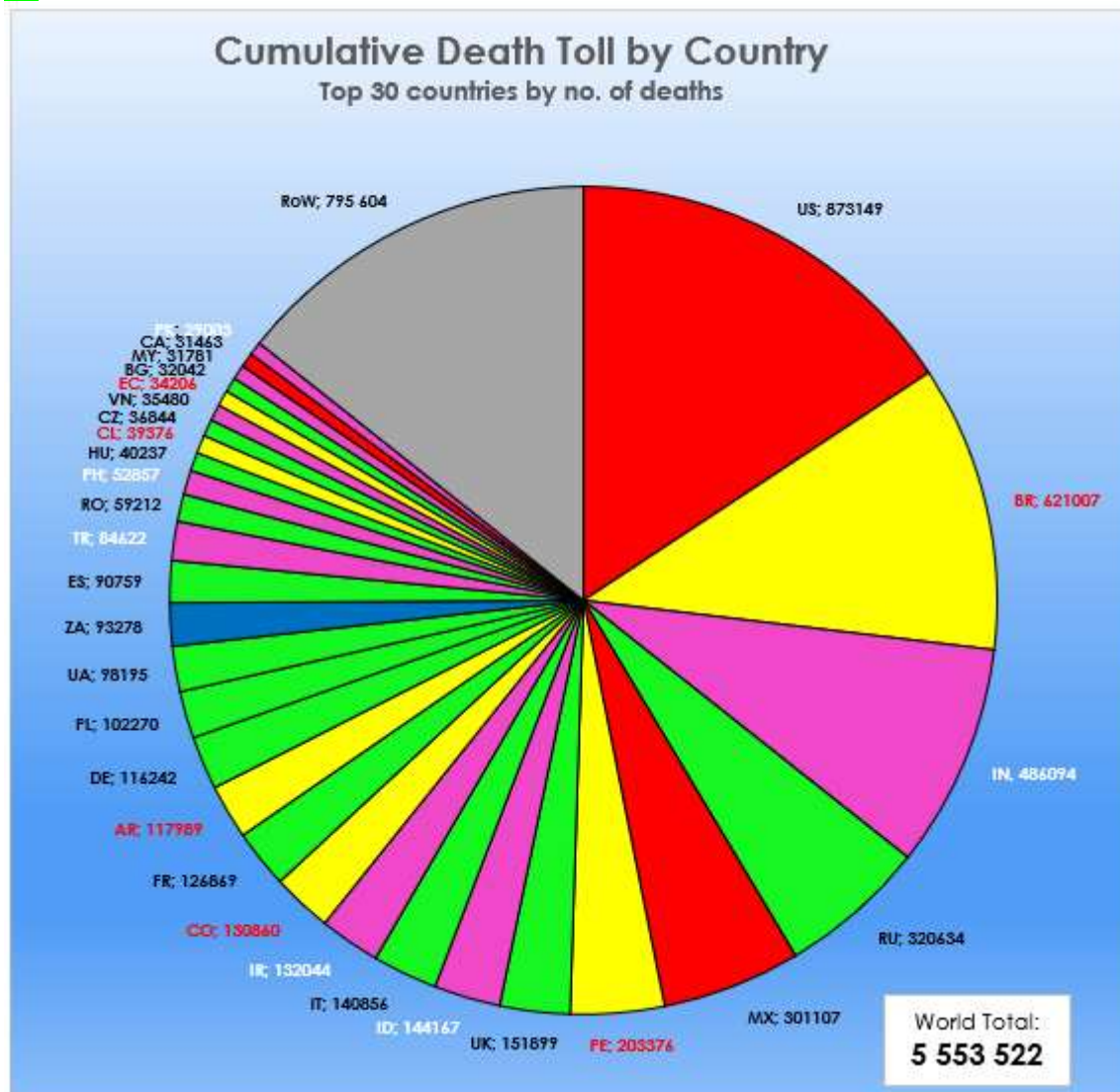
Note: These data represent the 124 countries with >1000 COVID-19 deaths. The other countries are not included in the figures.

The Top 10 countries contributing to the global death toll over the past week are:

| Top 10 Avg Daily Death Tolls |       |
|------------------------------|-------|
| USA                          | 1 803 |
| Russia                       | 748   |
| Poland                       | 364   |
| India                        | 329   |
| Italy                        | 281   |
| UK                           | 263   |
| Germany                      | 227   |
| France                       | 217   |
| Vietnam                      | 195   |
| Turkey                       | 156   |
| Top10                        | 4 583 |
| World                        | 7 302 |
|                              | 63%   |

US dominates. Turkey displaces S. Africa from the Top 10.

Cumulative death tolls for the top 30 countries [0]: **N. America**, **S. America**, **Europe**, **Asia**, **Africa**, **Oceania**  
**BG** moves up the rankings:

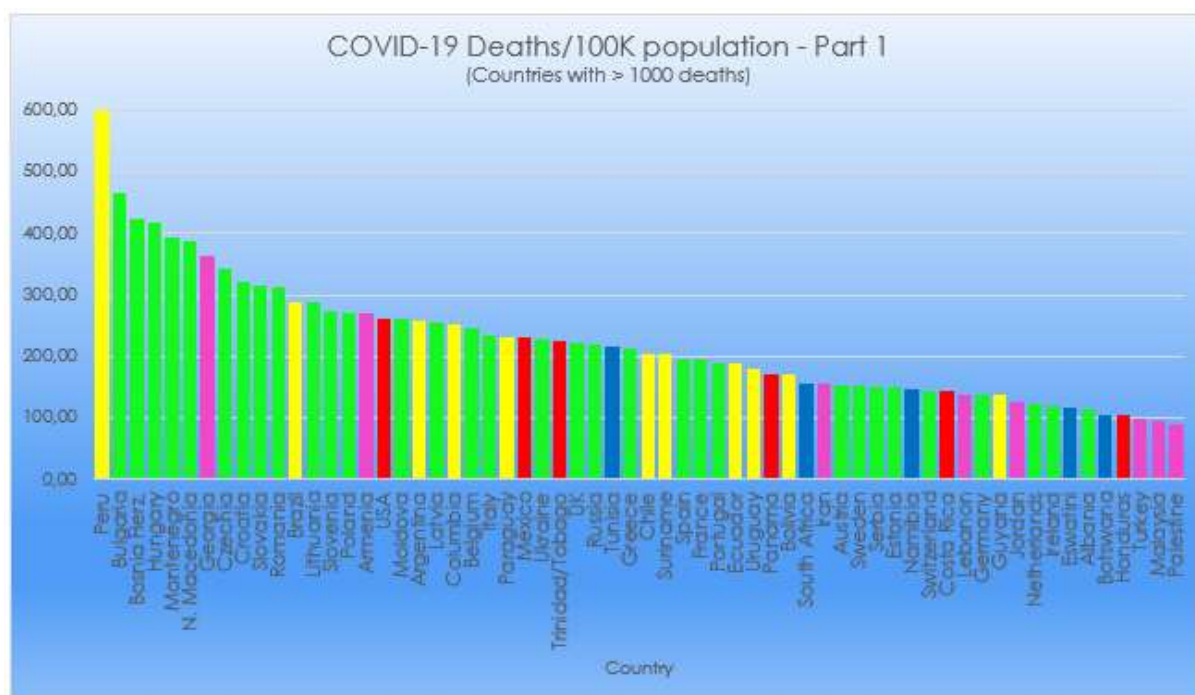


Upward movement of rankings of other >1000-death countries:

**GR**, **KR**, **ZM**, **UG**, **IT**, **AU**, **RW** & **GH**. (again)

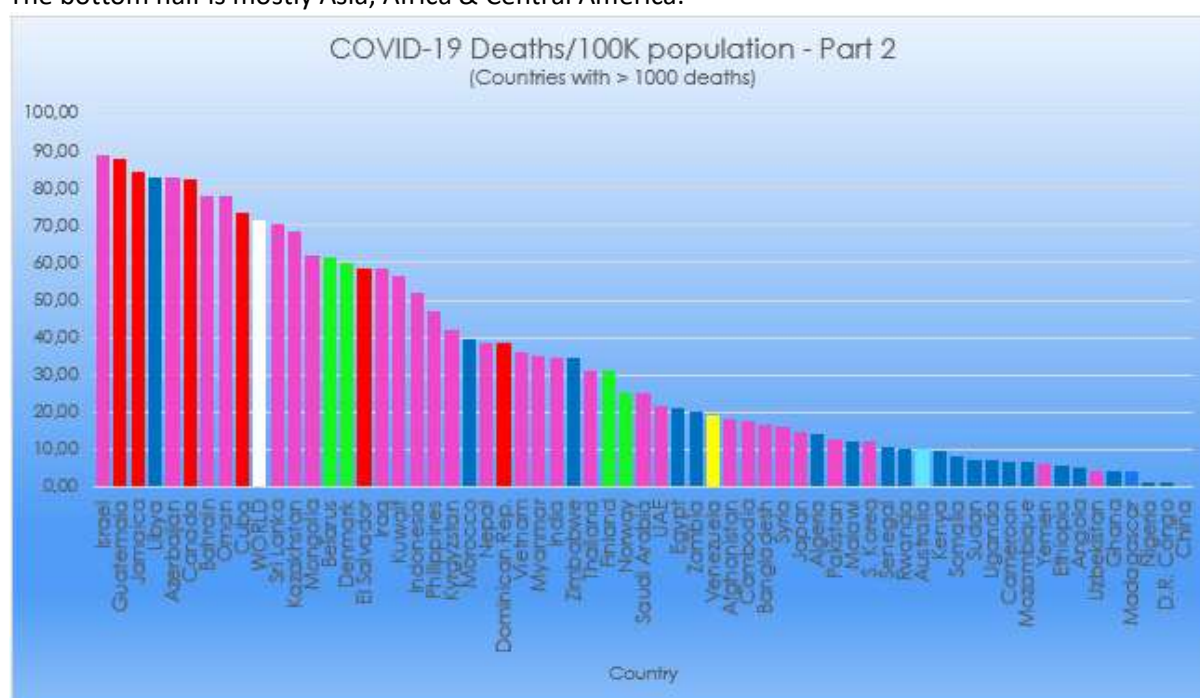
Per-capita death rates for all 124 countries with >1000 deaths:

It's Europe & the Americas which dominate the first half of the plot:



Moving left: **PL**, **US**, **LV**, **TI**, **RU**, **ZA**, **NA**, **CH** & **BW**. (again)

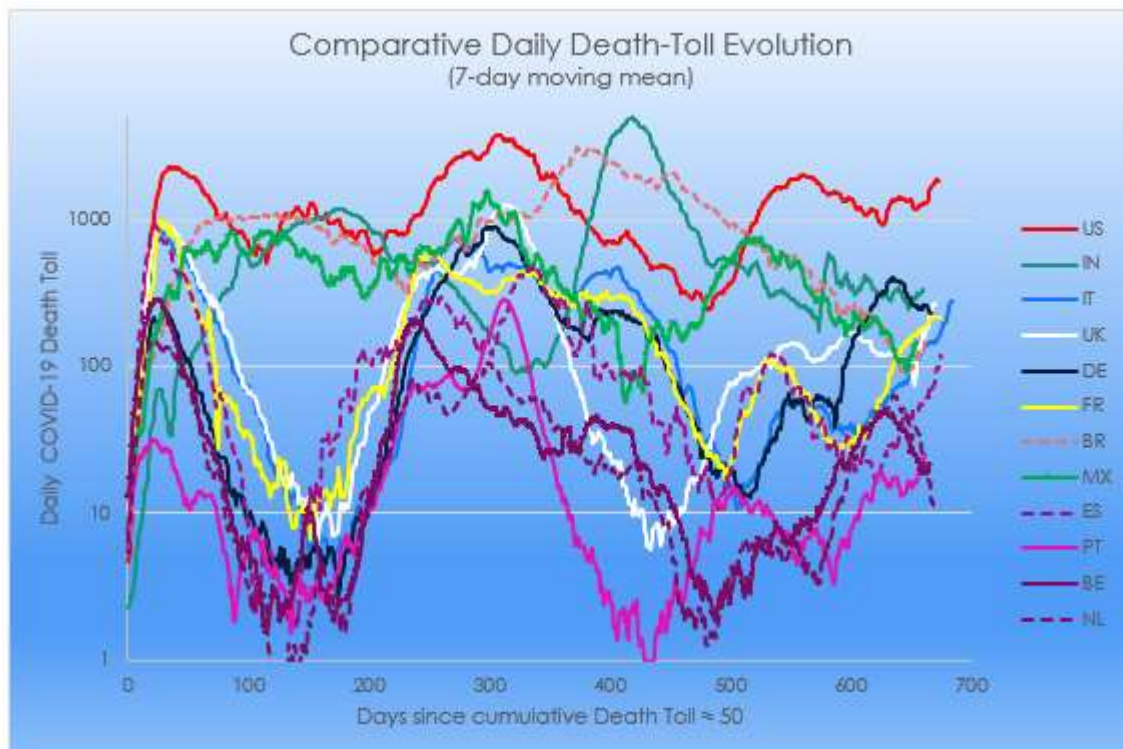
The bottom half is mostly Asia, Africa & Central America:



Moving left: **DK**, **VN**, **NO**, **AU** & **MZ**. (again)

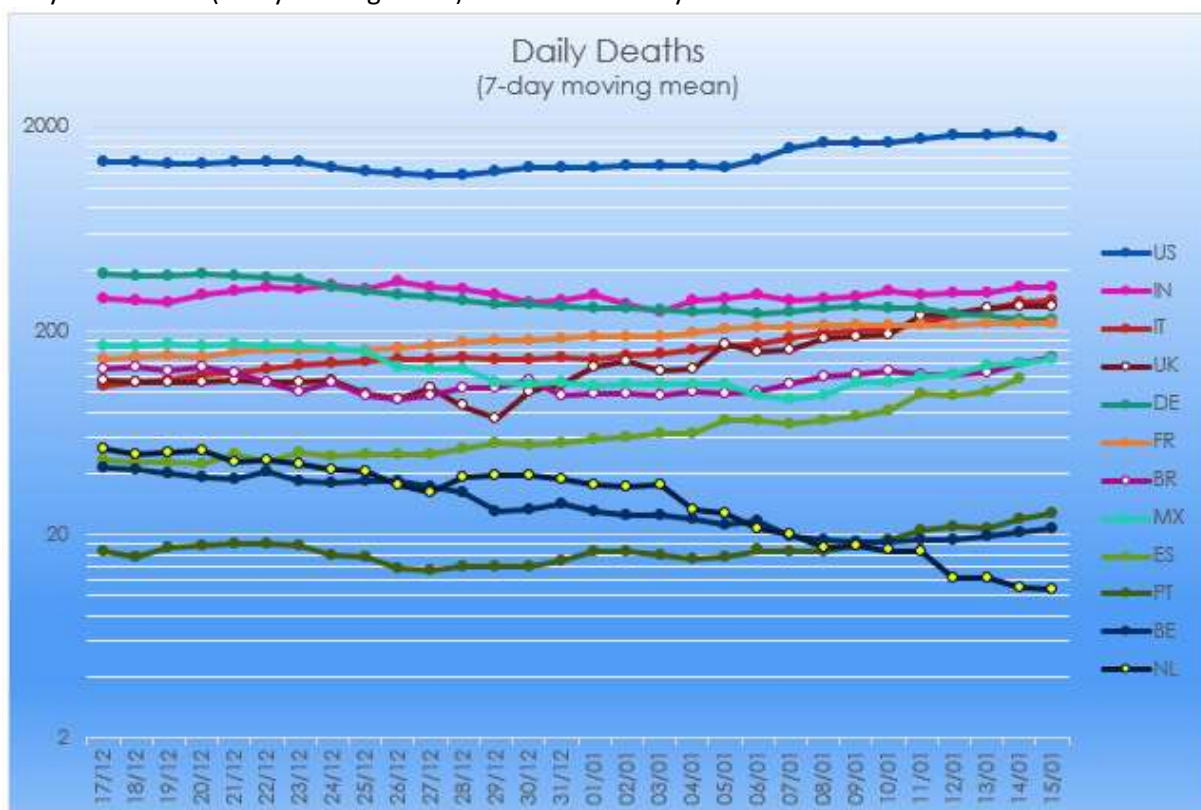
**National comparisons** (selected countries)

Here is the evolution in daily deaths rates (7-day moving mean) since each country's "Day0" [1]:



(Log y scale!)

Daily death rates (7-day moving mean) for the last 30 days:



(Log y scale!)

Comments apply to both of the above graphs:

- US rates continuing to rise, as are those in IT, UK, BR, ES & PT.
- Rates in IN, DE, FR & BE relatively flat recently.

- NL rates dropping.

#### Note on line graphs:

Please note that the key on the right of graphs like those above lists the entries in decreasing order of the value of the latest data points presented.

This applies to ALL line graphs in this newsletter.

#### Tendencies: Comparison of time scales [2]

Double digits, triple+shortening, triple, quadruple

- Another week of deterioration. Only NL & DE improving.
- Worst case is now US.

This is how doubling times have been evolving since mid-June 2020:



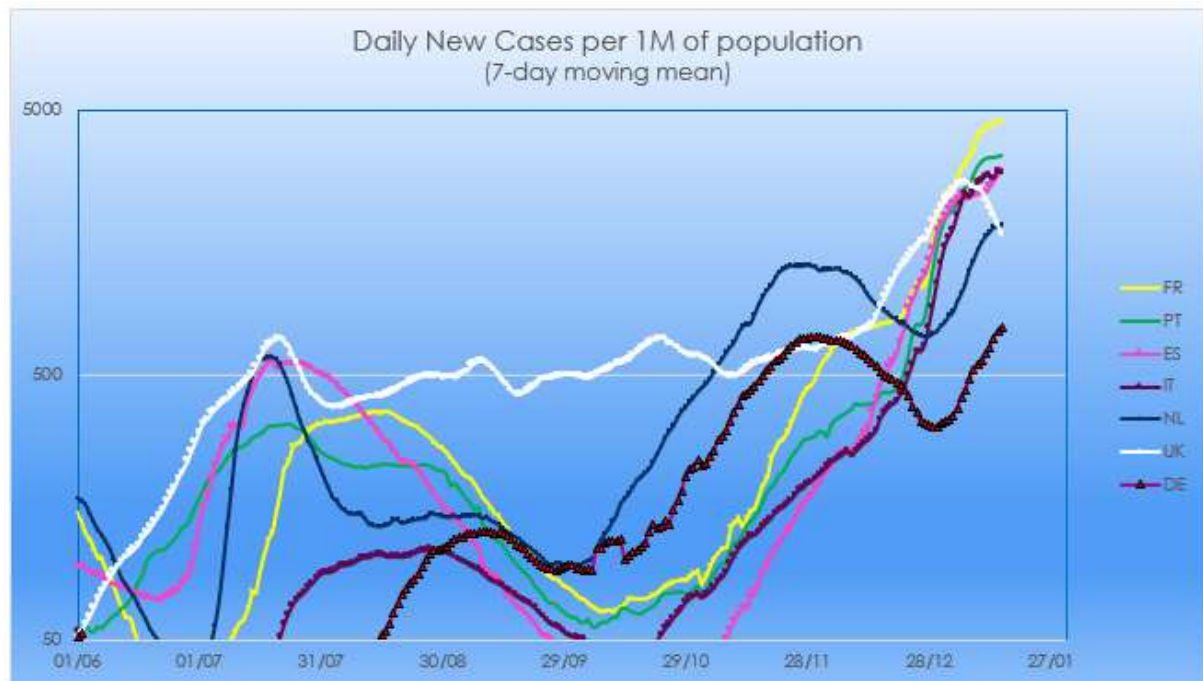
(Log y scale. Remember: Shorter doubling times equate to a faster evolution of the disease.)

DE & NL graphs rising; all the others dropping.

#### EU Test Comparisons

**Warning:** National data on testing are not really comparable between countries, but do reveal trends in individual countries [6].

Change of scale in the following graph to show recent evolution more clearly: time axis runs from 1<sup>st</sup> June 2021.



(This is now a log plot!)

Remarkable changes continue!

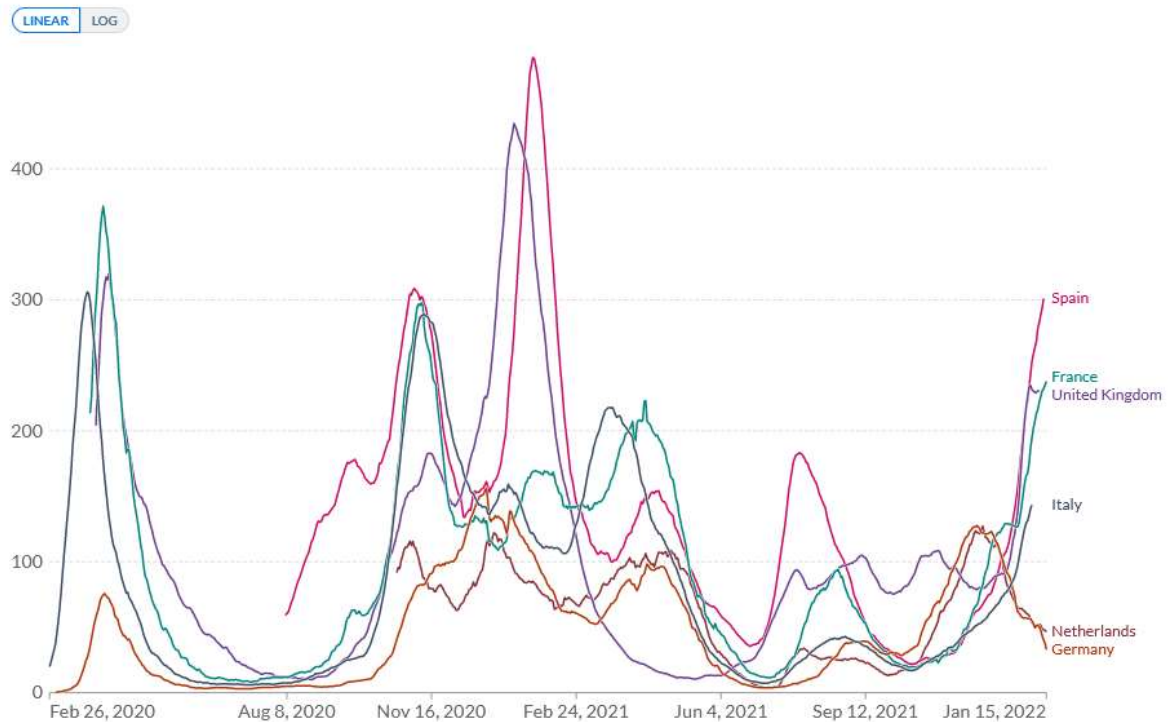
- UK rates are now falling rapidly.
- The rates of increase in other countries are slowing.
- FR has highest per-capita infection rates, followed by PT, ES & IT.

This is how the infection rates translate into weekly per-capita hospital admissions:

### Weekly new hospital admissions for COVID-19 per million people

Weekly admissions refer to the cumulative number of new admissions over the previous week.

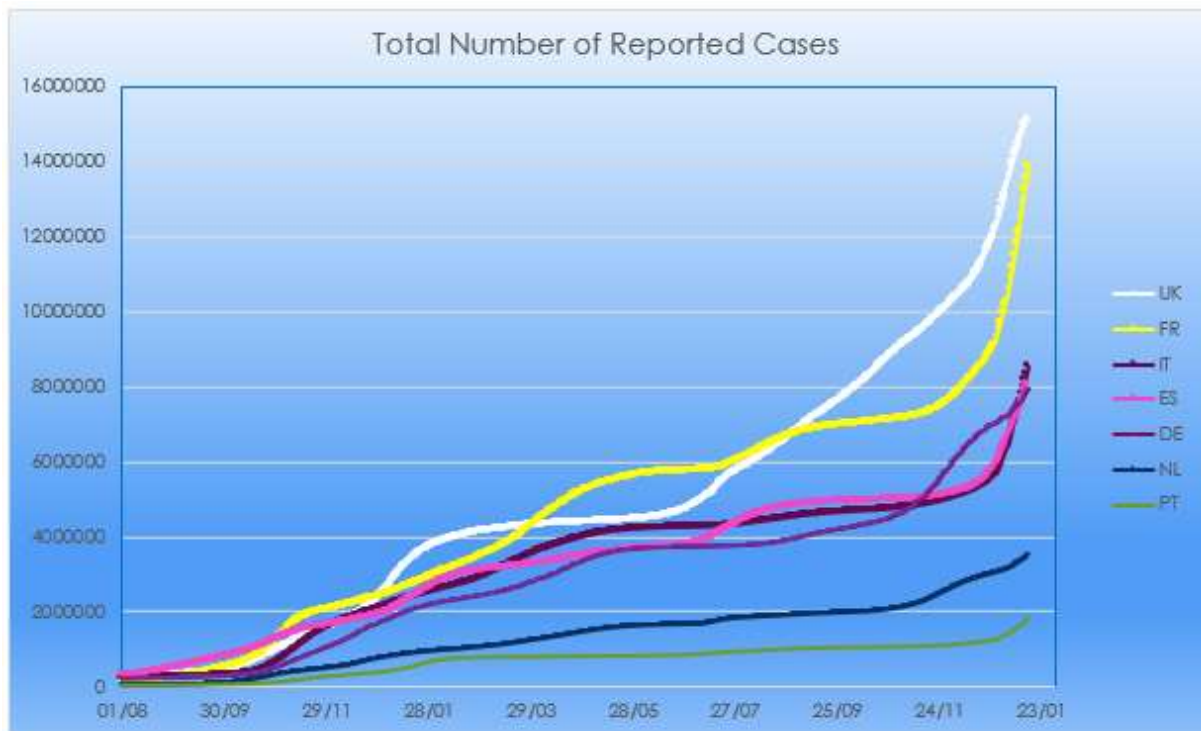
Our World  
in Data



Source: Official data collated by Our World in Data

CC BY

This is what the evolution in case rates looks like (absolute numbers, not per capita):



(Time axis: from 1<sup>st</sup> August 2020 to present.)

Italy & Spain move ahead of Germany.

#### **Vaccinations against COVID-19 [4]**

Note: The denominator in the metrics displayed below is the total population of the country, and not the population eligible for vaccination

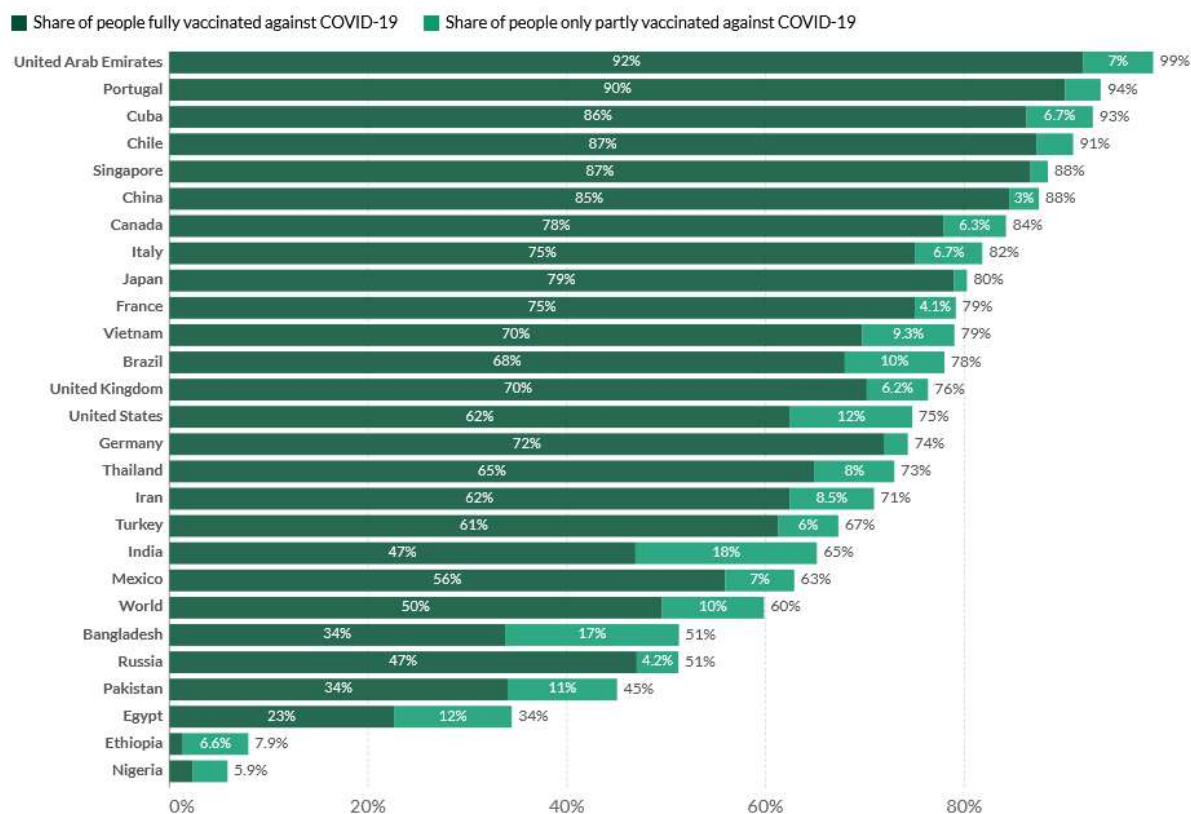
(the latter is the denominator most frequently used in data published by national authorities).

**59.9%** of the world population has received at least one dose of a COVID-19 vaccine.

**9.36 billion doses** have been administered globally, and **32.69 million** are now administered each day.

Only **9.5%** of people in low-income countries have received at least one dose.

## Share of people vaccinated against COVID-19, Jan 15, 2022



Source: Official data collated by Our World in Data  
 Note: Alternative definitions of a full vaccination, e.g. having been infected with SARS-CoV-2 and having 1 dose of a 2-dose protocol, are ignored to maximize comparability between countries.

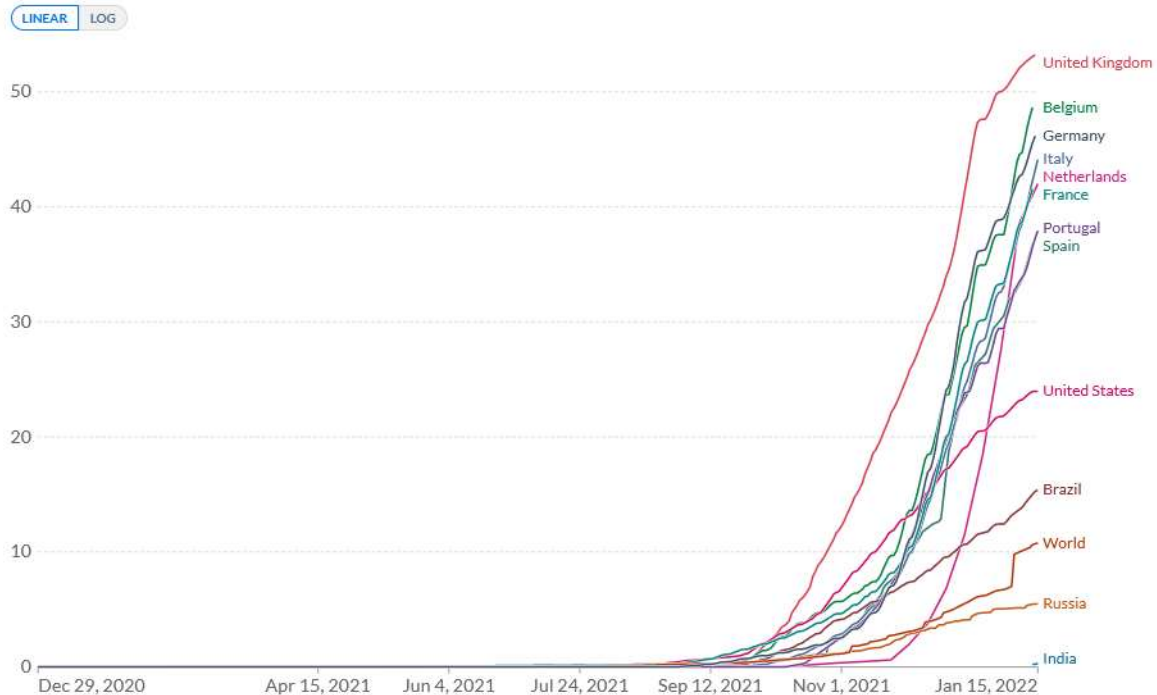
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Countries improving their position in the above graphic: **PT**, **BR** & **UK**.

## COVID-19 vaccine boosters administered per 100 people

Total number of vaccine booster doses administered, divided by the total population of the country. Booster doses are doses administered beyond those prescribed by the original vaccination protocol.

Our World in Data

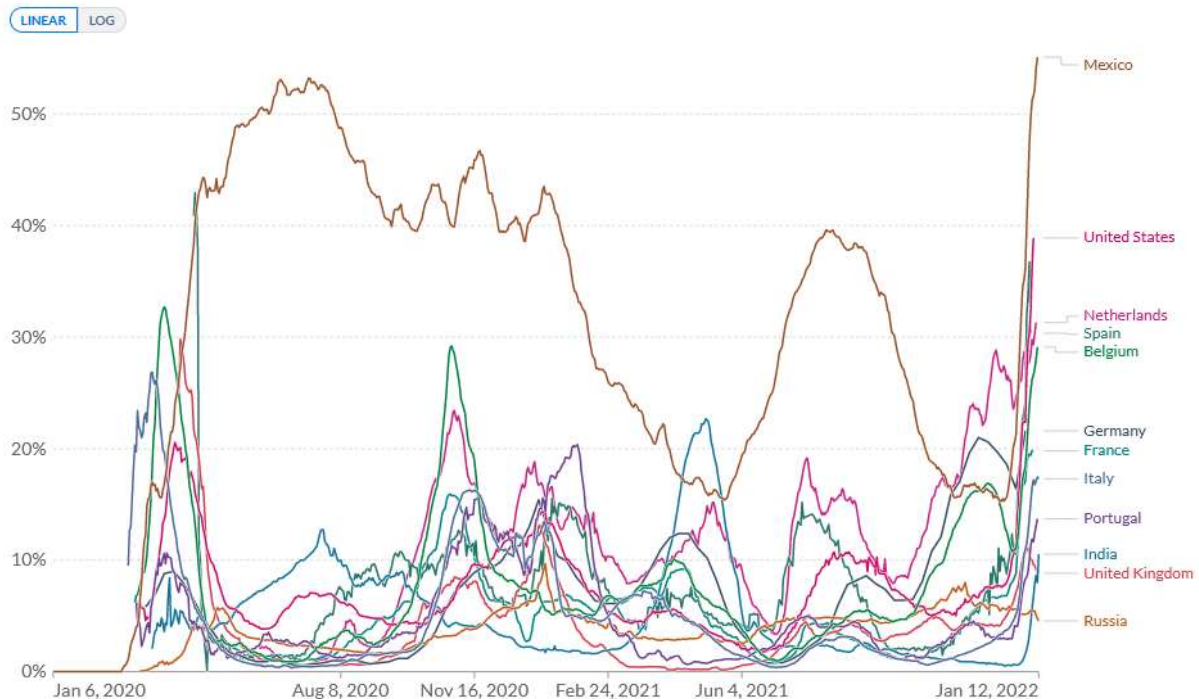


**UK** continues to lead. **BE** & **NL** have improved their ranking in the last week.

## The share of daily COVID-19 tests that are positive

7-day rolling average. The number of confirmed cases divided by the number of tests, expressed as a percentage.

Our World in Data



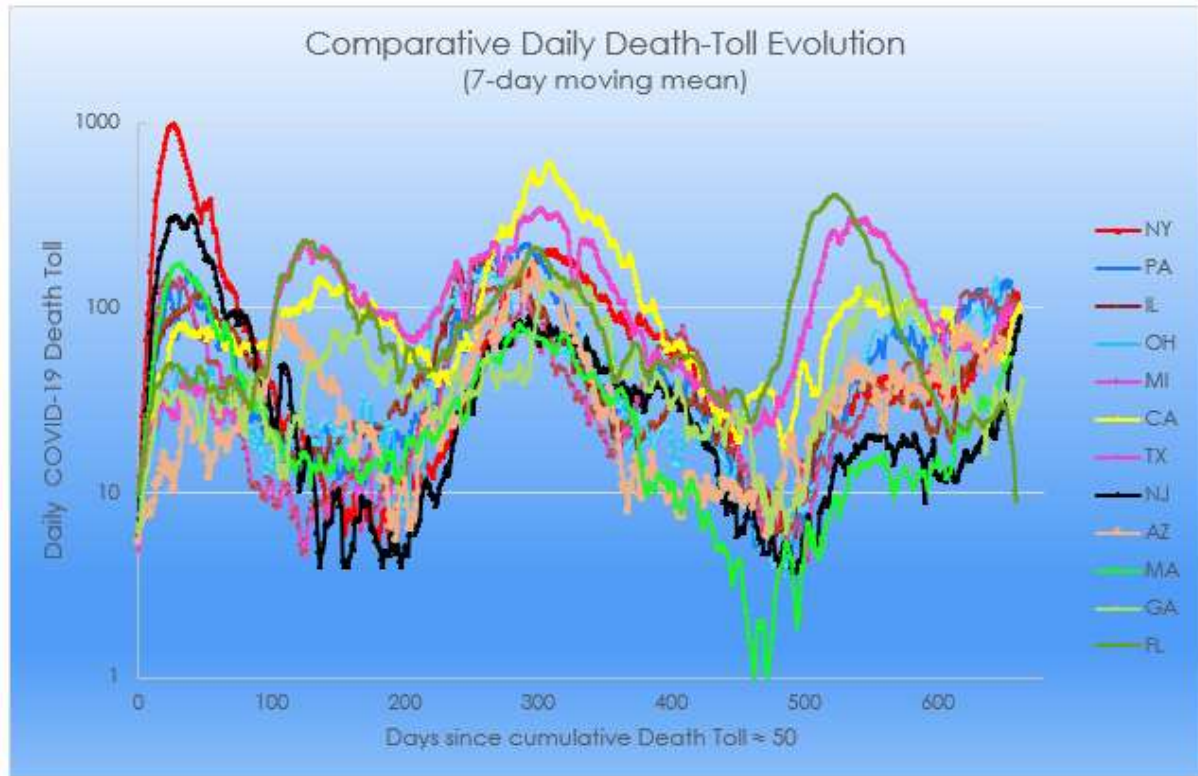
Currently, 2 **US** tests in 5 are positive (big increase); 1 **FR** test in 5 is positive; 1 **UK** test in 10 is positive (last two – no change).

(P.S. My test on Friday was negative! I was alerted by FR contact-tracing app that I'd been in contact with an infected person.)

### US States Focus

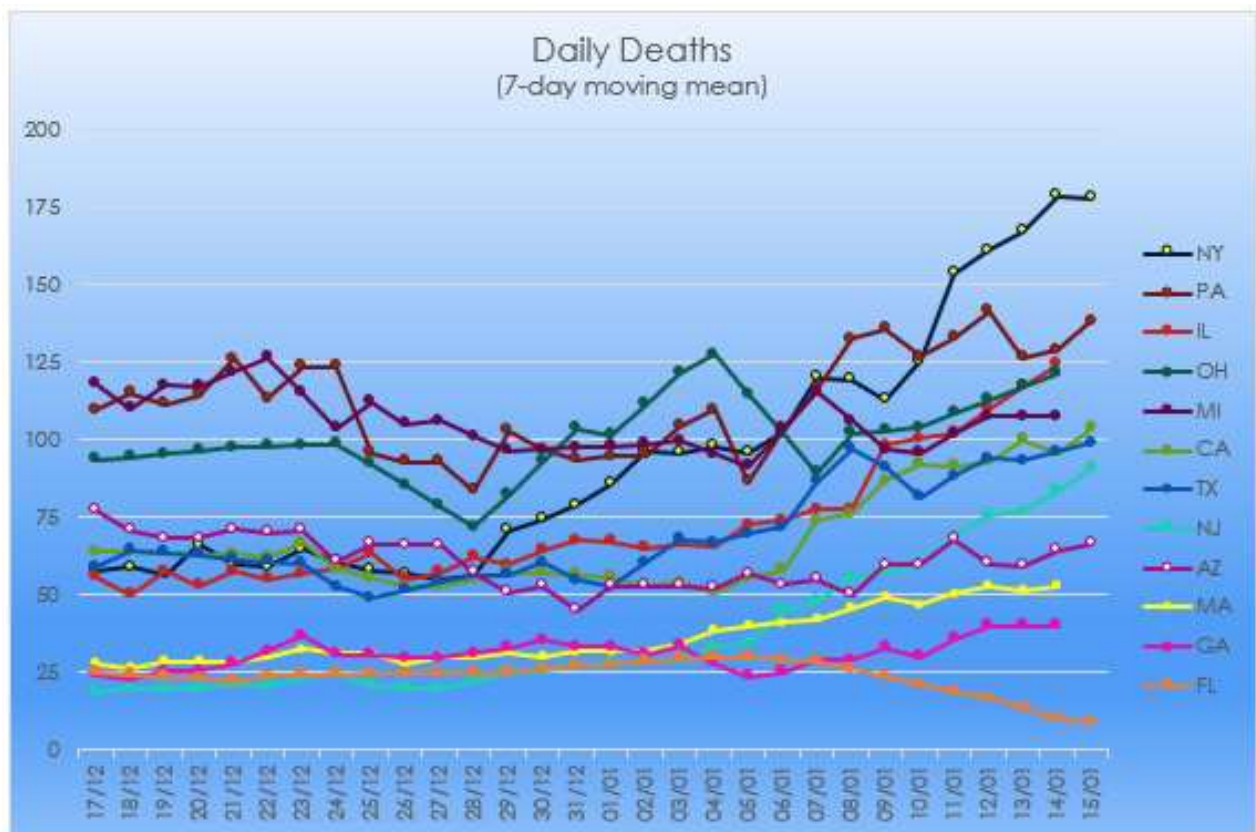
(Was Top 12 states by cumulative deaths, but TN has now entered the Top 12 displacing MA.  
Since I do not have TN historical data, we'll continue to monitor the original Top 12 only.)

### Comparative Daily Death Toll evolution



(Log scale!)

Comparative Daily Death Toll evolution over the past 30 days:



(Linear y scale)

Rising rates for all 12 states, except FL.

Particularly strong progression for NY & NJ.

The Top 10 states contributing to the national death toll over the past week are:

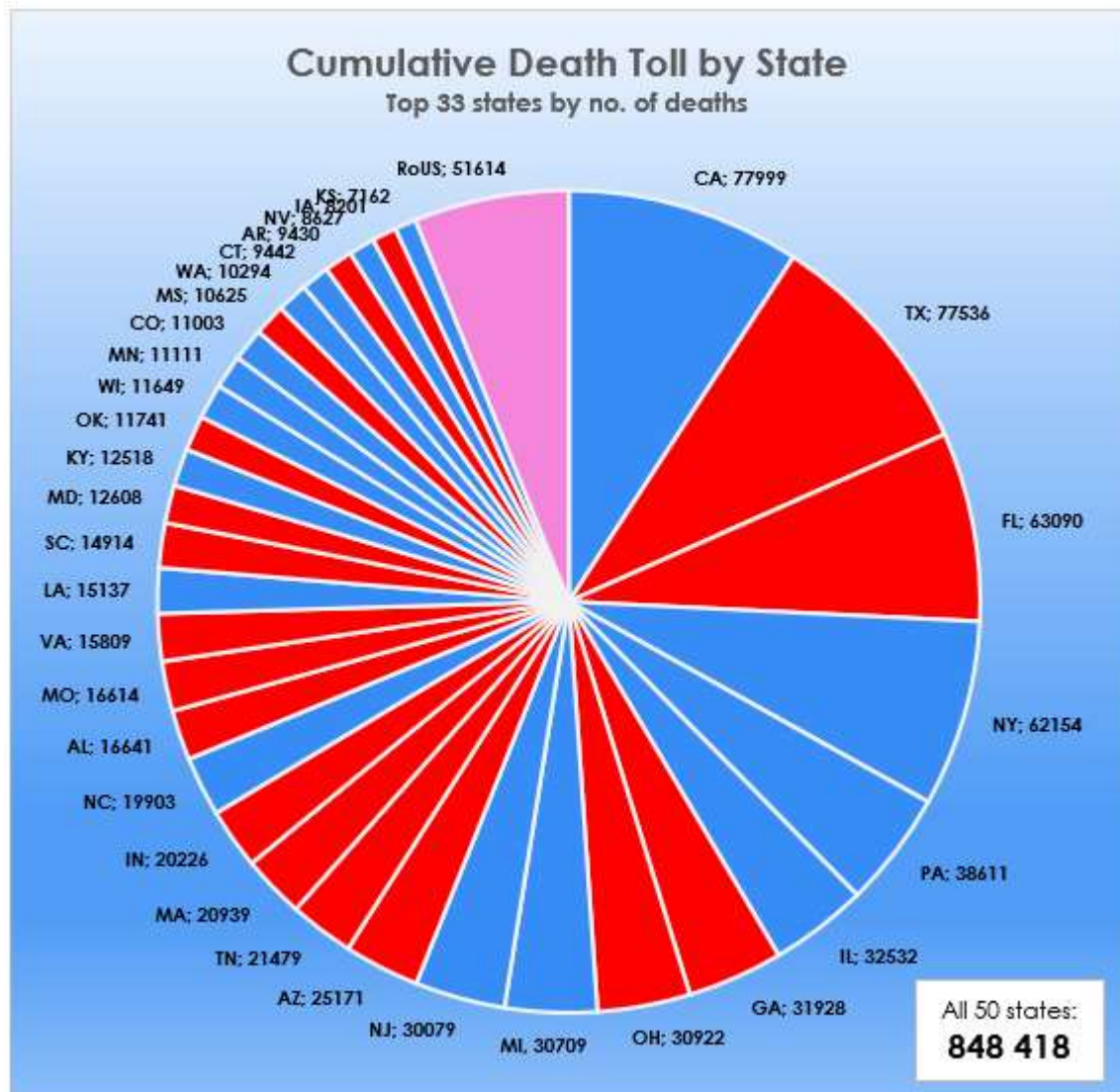
| Top 10 Avg Daily Death Tolls |       |
|------------------------------|-------|
| New York                     | 178   |
| Pennsylvania                 | 138   |
| Illinois                     | 125   |
| Ohio                         | 121   |
| Michigan                     | 108   |
| California                   | 104   |
| Texas                        | 99    |
| New Jersey                   | 91    |
| Indiana                      | 87    |
| Arizona                      | 67    |
| Top10                        | 1 051 |
| USA                          | 1 945 |
|                              | 54%   |

Same 10 states as last week, with changes in ranking.

Cumulative death toll for the top 33 US states:

(Colours identify the party affiliation of the state Governors.)

IN overtakes NC; MD & KY overtake NJ; CT overtakes AR:

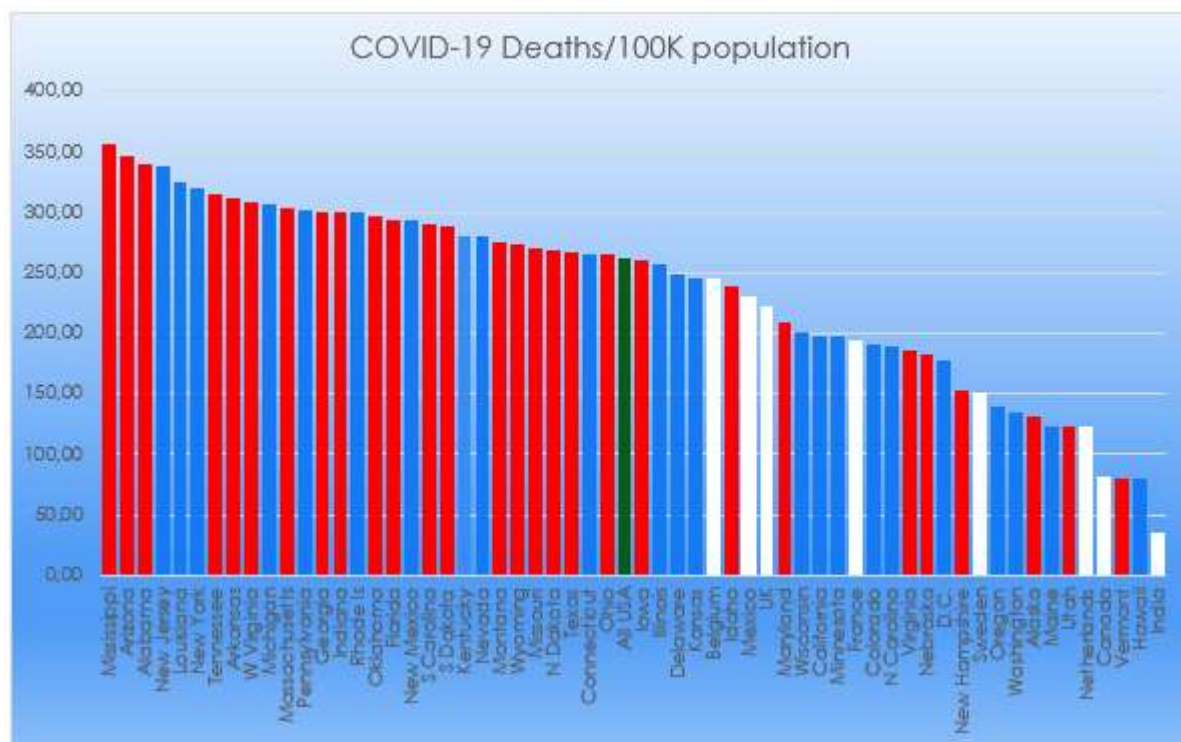


Also moving up the rankings: NH

Note: The 50 states death toll is less than the USA death toll reported in the Global Overview.

This is because the latter figure includes US territories like Puerto Rico, Guam, the US Virgin Islands, the Northern Marianas as well as certain "federal" groups (Prisoners, Navajo nation, Veterans, ...).

Per capita (for all 50 states):



Moving left: TN, PA, IN, NM, MO, DE, ME & VT. (again)

HI is now the state with the lowest per-capita death rate (was VT).

#### Tendencies: Comparison of time scales [2]

Double digits, triple+shortening, triple, quadruple

| State | 1st death | Days since 1st death | "Day0"    | Days since "Day0" | Doubling time (7-day fits) |          |          |          |
|-------|-----------|----------------------|-----------|-------------------|----------------------------|----------|----------|----------|
|       |           |                      |           |                   | 15 Jan                     | 08 Jan   | 01 Jan   | 25 Dec   |
| AZ    | 20 Mar 20 | 666                  | 04 Apr 20 | 651               | 269 days                   | 289 days | 280 days | 202 days |
| CA    | 04 Mar 20 | 682                  | 24 Mar 20 | 662               | 479 days                   | 556 days | 699 days | 768 days |
| FL    | 06 Mar 20 | 680                  | 27 Mar 20 | 659               |                            |          |          |          |
| GA    | 14 Mar 20 | 672                  | 20 Mar 20 | 666               | 436 days                   | 602 days | 488 days | 584 days |
| IL    | 17 Mar 20 | 669                  | 28 Mar 20 | 658               | 162 days                   | 218 days | 283 days | 327 days |
| MA    | 20 Mar 20 | 666                  | 29 Mar 20 | 657               | 213 days                   | 234 days | 306 days | 332 days |
| MI    | 18 Mar 20 | 668                  | 25 Mar 20 | 661               | 131 days                   | 145 days | 134 days | 114 days |
| NJ    | 10 Mar 20 | 676                  | 24 Mar 20 | 662               | 191 days                   | 294 days | 556 days | 780 days |
| NY    | 14 Mar 20 | 672                  | 20 Mar 20 | 666               | 202 days                   | 316 days | 406 days | 562 days |
| OH    | 18 Mar 20 | 668                  | 31 Mar 20 | 655               | 156 days                   | 190 days | 139 days | 170 days |
| PA    | 18 Mar 20 | 668                  | 30 Mar 20 | 656               | 158 days                   | 156 days | 191 days | 171 days |
| TX    | 16 Mar 20 | 670                  | 30 Mar 20 | 656               | 474 days                   | 538 days | 690 days | 834 days |

Note about FL: The reported data are very volatile and published day-to-day values keep changing erratically.

Deterioration for all states, except PA.

Worst case: Still MI.

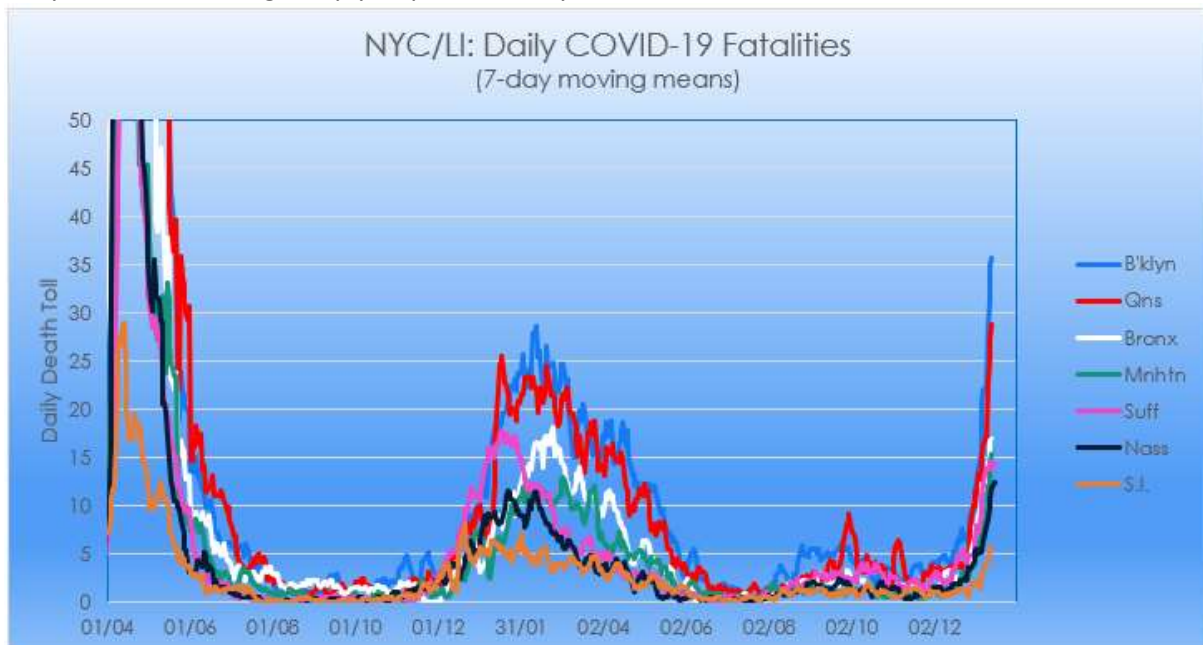
This is how doubling time have been evolving since mid-June 2020:



(Log plot! – Remember, longer doubling times are preferable.)  
General decline in doubling times is possibly accelerating.

#### **NY Area update**

Daily death rates rising sharply, esp. for Brooklyn & Queens:



Next update next Sunday (or, perhaps, next Monday).

Keep well & keep safe!

David

**Today's images:** Some superb sunset shots taken in a couple of Northumberland locations by **Judy**.  
3 photos taken in & around Bamburgh:





2 photos taken on the Holy Island of Lindisfarne:





Please keep sending me your images for this space...

### **Notes**

[0] The national COVID-19 data are taken from the [worldometer website](#) which reproduces the data collected from Official Websites of Ministries of Health of other Governmental Institutions and Government authorities' social media accounts.

- Different countries use different criteria in recording COVID-19 deaths, often distinguishing between *probable* and *confirmed* cause of death.
  - Belgium appears to have the loosest criterion attributing any death to COVID-19 if there is any suspicion that COVID-19 could have been the cause.
  - The UK definition: death occurring within 28 days of a positive test for COVID-19. (If the patient dies 29 days after the test, it wasn't officially caused by COVID-19.)
  - China has only reported a single COVID-19 death since 17<sup>th</sup> May 2020! This occurred on 14<sup>th</sup> January 2021.
- Some countries, notably the US, regularly update the entire set of historical data provided to the website.



Clearly, long doubling times are good; short ones are bad.

[3] One of the characteristics of the exponential function is that the gradient (or rate of change), is proportional to the value of the function.

(For those who remember their calculus, the solution of  $df(t)/dt = k f(t)$  is  $f(t) = e^{kt}$ .)

By plotting the change (number of deaths in a given period) on the y-axis against the total number of deaths on the x-axis, an exponential gives a straight line on a log-log graph. When the mortality rate stops being exponential, the country curve plummets down from the main sequence.

The points represent values on a succession of days, the end point being yesterday. The more closely spaced are the points (days), the slower the evolution; the greater the distance between points, the faster the evolution.

To give a clearer meaning to the y-axis data, we plot the average no. of deaths in the past 7 days vs. the cumulative no. of deaths on the x-axis.

This analysis was proposed by **Dr Aatish Bhatia**. An animated version of this graph can be viewed on his [website](#). (Use the panel on the right to configure for *Reported Deaths* and select the countries to be viewed.)

An entertaining video explaining this presentation of the data can be found [here](#).

[4] **Vaccinations against COVID-19**: These data are collected from official reports by the **Our World in Data** [team](#) and can be found [here](#).

[5] The sources of the NYC & Long Island data are not the same as the one used for national data:

Source for the 5 boroughs:

<https://github.com/nychealth/coronavirus-data/blob/master/totals/group-death-by-boro.csv>

Source for Nassau & Suffolk counties:

<https://coronavirus.smartnews.com/us/new-york/>

[6] **Testing policies vary widely & unpredictably both regionally and in time.**