

What do all these numbers mean?

John James Covid Commentary 24.03.2020

While shopping yesterday I noticed a headline in a daily newspaper: “Already 4900 dead in Italy”.

My immediate thought that it was irresponsible of the newspaper to publish a headline like that without putting the number in any sort of context. The newspaper was obviously trying to provoke a strong emotional reaction. Would it not be better to keep calm and evaluate the situation we find ourselves in rationally?

Now that is a difficult thing to do on the basis of the statistics we are given. They are not defined and not placed in any historical or demographic context. This has bothered me since the authorities announced that the aim of flattening the infection curve must be given a higher priority than all our other social and economic activity.

Over the weekend I therefore tried, with some success, to make sense of the statistics that I publish every day in this blog. The main problem as I see it, is that they are so badly defined. They are obviously not numbers plucked out of a hat, but they are provided with little context and little explanation as to what they mean.

In this post I should like to fill this gap and draw some conclusions. Statistics is obviously a dry and abstract matter. I will try to keep it clear and concise.

The first thing we must be clear about, is that the numbers published by various sources are not absolutely identical.

The Austrian Ministry of Health explains this as follows

Da es sich um eine sehr dynamische Situation handelt, kann es zu Abweichungen zwischen der Website des BMSGPK und den Angaben anderer Stellen kommen.

Since this is a very dynamic situation there can be discrepancies between the website of the Federal Ministry of Health and the reports provided by other sources.

Some Definitions

The numbers which we publish on this website are taken from the website worldometers.info.

Worldometers.info publishes data under various rubrics such as Total Cases, Active Cases, Recovered, Critical and Deaths.

Total Cases

Worldometers does not seem to publish a definition of the term “Total Cases”.

However the WHO defines the term “Confirmed Case” in its reporting guidelines:

https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200321-sitrep-61-covid-19.pdf?sfvrsn=f201f85c_2

Confirmed case: A person with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms.

The numbers published by the WHO in Total Confirmed Cases are the same as the numbers published by Worldometers under Total Cases.

The rubric Total Cases therefore includes everybody who has tested positive for Covid 19, regardless of whether they required medical treatment or not, recovered or died.

Active Cases

Worldometers has a second category called Active Cases, which it defines as follows:

By removing deaths and recoveries from total cases, we get "currently infected cases" or "active cases".

An active case is therefore somebody who has tested positive for Covid 19, but is neither dead nor has been declared free of the virus by a doctor. Active Cases include all the people in quarantine as well as those in hospital.

Serious/Critical

The Worldometers website also lists those who are in intensive care in hospital under the rubric Serious/Critical.

Worldometers uses the information provided by the WHO to create the following calculation:

Total Cases = Active Cases plus Deaths plus Recovered.

For example on 22.03.2020 worldometers.info reported the following figures for Austria.

Total Cases 3024.

Deaths 8 + Active 3007 + Recovered 9 = 3024

Testing information

One of the biggest problems that we have when trying to make sense of the published numbers is that we are not informed about how many people test negative for the Covid 19 virus.

This is important information. We know that testing capacity is insufficient to test all those who wish to be tested. Obviously in such a situation the medical profession will by and large test those who come to them for help, because they are displaying symptoms of fever or influenza.

The Austrian Ministry of Health describes the procedure as follows:

[https://www.sozialministerium.at/Informationen-zum-Coronavirus/Neuartiges-Coronavirus-\(2019-nCov\).html](https://www.sozialministerium.at/Informationen-zum-Coronavirus/Neuartiges-Coronavirus-(2019-nCov).html)

Wird von einer Gesundheitsbehörde ein Verdachtsfall gemeldet, so wird dieser umgehend auf das Vorliegen einer Coronavirus-Infektion getestet.

If a health authority reports a suspected case, the person is immediately tested to see if he/she is a case of Corona Virus infection.

Tests are by and large carried out on people suffering from flu symptoms. If we could compare the number of flu sufferers with the number of people infected by Covid 19 we have a better idea of how dangerous the virus is, both to the general population and to the ability of health services to deal with it.

One of the important considerations that gets lost when one simply compares numbers is the size of the populations in which they arise. Four of the most important countries in our table display an extreme divergence in population size:

China 1,400 000,000

Italy 60 000 000

S. Korea 52 000 000

Austria 9 000 000

4900 dead means one thing to a country of 9 million people and something completely different in a country of 1.4 billion people.

Putting these numbers in context.

The website <https://ourworldindata.org/covid-testing> publishes information on testing for some countries.

I have used testing numbers provided by ourworldindata.org for these four countries for 20.03.2020 and measured it against the results published by worldometer for 21.03.2020. This assumes that the results of those tested on the 20th will be entered into the statistics a day later.

The numbers I use are of course not absolutely accurate. It is a fluid situation. My assumption as to how many people who tested positive would have required medical care can also not be verified. This is not a problem in my opinion. My aim is to demonstrate the different orders of scale that are to be seen in different countries. That is clear, even if my assumption that those who are entered in to the statistics as "recovered" can only attain this status if they were previously receiving medical care is incorrect.

China

I have come to the conclusion that the data from China is worthless.

According to ourworldindata, up to the 24 of February China tested 320 000 people, This data is apparently only from the province of Guangdong. Guangdong was also affected by Covid 19, but without any data from Hubei Province, it is not clear what value this data can be to us. The official statistics published by China are remarkably low, compared to the enormous size of the Chinese population. Hubei Province alone has a population of 58 million people, and Guangdong is the most populated

province in China with 110 million people. These two provinces together have a population three times the size of South Korea or Italy.

South Korea

South Korea has a population of 52 million people and had tested 320 000 or 0.6% of the population by 20.03.2020.

9000 of these tests were positive or 2.8% of those tested.

2600 of these recovered, 100 died, 60 are still in a serious condition. That suggests that 2760 required hospital care. I say this because in order to be entered into the statistics as recovered a person must previously have been deemed ill and then declared free of infection by a doctor.

2760 hospital patients are 31% of those who tested positive and 0.005% of the total population

69% percent of those who tested positive showed no severe symptoms.

Italy

Italy has a population of 60 Million people and had tested 206 000 or 0.34% of the population by 20.03.2020.

54 000 of these tests were positive, that is 26% of those tested.

6000 of these recovered, 4800 died, 2900 are still in a serious condition. That suggests that 13700 required hospital care.

13700 hospital patients are 25% of those who tested positive and 0.02% of the total population.

These statistics, high though they are, do not reveal the truly catastrophic nature of what is happening in Italy. As I write today (23.03.2020) ca. 63 000 people have tested positive in Italy. Of those, 80% or 53 000 live in the Northern half of the country.

The infection rates in the North are frighteningly high. In Lombardia 40% of those ill with flu symptoms tested positive for Covid 19, in Marche 38%, in Piemonte 26%, in Toscana 35%, in Liguria 35%.

This has resulted in 13700 patients requiring hospital or at least professional medical care in Northern Italy. This is the true problem. This number has overwhelmed the Italian Health Service.

Austria

If these results were simply a result of the virus infection, one might expect Austria to show similar results. It is Italy's neighbour to the North and the infection made its way into Austria largely from Italy, This has led to the provinces of Tirol and Vorarlberg being isolated and their entire population to be quarantined.

Austria's numbers are however at the opposite extreme. Italy is the country with by far the worst state in the world, Austria the country with the best statistics.

Austria has a population of 9 Million people and had tested 21 000 or 0.02% of the population 20.03.2020.

3000 of these tests were positive, 14% of those tested.

9 of these recovered, 8 died, 15 are still in a serious condition. This suggests that 32 had required hospital care before the 21st of March 2020.

32 persons requiring hospital care out of a population of 9 million is only 0.0000035% of the entire population and only 1% of those who tested positive..

According to worldometers on the 23.03.2020 in Austria 15 patients were in a critical condition. It would appear that 99% of those who have tested positive in Austria have as yet shown no severe symptoms

Conclusions

One might conclude, on the basis of these statistics, that the measures Austria has taken to stop the virus spreading are excessive.

This might well be a false conclusion to draw. The appallingly high death rate in Italy may not be a direct result of the Covid 19 infection. Italy`s figures are unusually bad when compared to other countries in the world, even third world countries like Iran. It seems unlikely that Covid 19 on its own can have caused all this chaos. The high rates of death and infection are more likely to be the result of a health system which has collapsed.

If you develop Covid 19 Pneumonia, you require access to intensive care in a hospital fitted with respirators and extraordinary levels of hygiene to recover from it. The Covid 19 virus is highly infectious. The low death rates in Austria and perhaps also in Korea may be a result of the fact that, as yet, all Covid 19 patients have access to this level of care.

However it does not require many intensive care patients to exhaust a nation`s supply of ventilators and beds and overwhelm the caring capacity of a National Health Service.

The Italian health service was overwhelmed by demand for intensive care long before the number of those requiring it reached 13700.

Nosocomial Infections

In the MIT article I linked on this blog yesterday, it was suggested that 40% of those who were infected in Wuhan got the disease in hospital. If Dr Wodarg is right that Italian hospitals have a particularly serious problem with nosocomial infections (infections caught in hospital), then the original Covid 19 infections may have set a vicious circle in motion, one which creates more and more victims as more and more patients turn to the hospitals seeking help. Severely ill patients lying on beds in

hastily converted waiting rooms, in passages, in rooms which are not sterile and not designed for intensive care, may well be making the situation worse.

This fate may well befall other European countries. Amongst those countries which should be concerned about such a spiralling effect are the UK, Ireland, France and probably Spain.

The Austrian and German health services probably have a higher ratio of beds and equipment per head of population than the above-mentioned countries, but if the tipping point is reached, it will be very hard to turn the wave back.

We should therefore hope that Britain and France can stem the tide and that Austria and Germany can keep the lid on it. Let us hope that the measures that Germany has taken will prove sufficient.

European Solidarity? With whom?

On the 10th of March there were 10 000 total cases in Italy. That means there were roughly 2600 Italians requiring urgent hospital care.

When the Chinese realized that Wuhan was in a Corona Virus epidemic, they sealed the region off and concentrated a large proportion of their national medical resources on Wuhan. China is a large country with a lot of doctors and resources.

If the major countries of Europe had pulled together to deal with this crisis on the 10th of March by sharing their medical resources with Italy to take care of these 2600 people, then it would surely have been possible to stop the virus spreading in the way that it has. 10 days earlier on the 1st of March there were only 2000 cases, or 500 people requiring hospital care in Italy.

Underestimating the effects of the Corona Virus on Italy was a monumental blunder by the European political elite.

And it will be a matter of eternal shame that the EU member states refused to share their medical resources with Italy.

The result: Italy, the country which patiently endured all the pain inflicted upon it by the Euro crisis and the German obsession with austerity, has discovered its allies are not there to help if a crisis strikes. In the end the EU operates on the principle every man for himself.

Italy has now understood this and has decided to turn to Russia and China for assistance.

And the borders, which we were dishonestly told by the German "elite" could not be closed, have been shut overnight like castle gates.

*Dies iræ, dies illa, solvet sæclum in favilla.
Judex ergo cum sedebit, Quidquid latet apparebit:
Nil inultum remanebit.*