

## **Confused by Cov19 Statistics?**

*While, we are aware that we are discussing a virus that has caused death and hardship, due to the concepts we address, the analysis may appear impersonal and uncaring. That is certainly not our intention, but a necessity in this case.*

*We hope the analysis is not too confusing or confronting and gives you are better understanding of the situation. Our calculations are only rough estimates, but they are vastly superior to the misleading way the numbers are currently being reported.*

Based on our analysis, at this stage the numbers out of Australia look encouraging as compared to most other countries. That is not a suggestion that we relax, but there is reason to have some confidence that we will not end up like Italy or Spain.

Are you confused by the Cov19 statistics being reported?

As the lockdowns get more and more severe, do you assume that Australia is heading down the path of Italy?

We are getting bombarded with numbers that creates anxiety not understanding. Maybe this is intentional as frightened people comply. The government has intentionally held back the modelling being used by the statistical experts. However, if you are trying to get an understanding of the situation, it makes life very hard.

The objective of all the restrictions is to stop too many people getting the virus at the same time, as this could overwhelm the hospital system. It is not to wipe out the virus. We would expect an ongoing tightening, then loosening of restrictions, with a strong bias towards taking more restrictions, as you want to leave a big margin for error.

The main statistics reported are:

- Number of **confirmed** infections;
- Growth rate in numbers of **confirmed** infections; and
- Number of deaths.

**In terms of analysing the spread of the virus and determining how well we are doing, these numbers alone are meaningless and misleading.**

You may have noticed we highlighted **confirmed** infections or cases, not **actual** cases.

These numbers are completely flawed, as they do not take into account the number of tests done. Even if we knew the number of tests, the people tested are as far from a random sample as you could get. Tests are only performed on 'the most likely' individuals and we know that this virus can be very mild for the majority of people.

This is the reason why the virus has caused so much strife. People can show no symptoms for a period and possibly not show them at all, that has made it so difficult to control and is the reason we have had these unprecedented restrictions.

If we test more and more people, we will obviously discover more and more cases. This is what we would expect, even if there was not one new case since we started testing. It can create an impression that it is getting worse, even if the situation is improving. We will find cases that were not picked up in the earlier tests, now getting included. They are treated as new only because we did not know they had it (not confirmed) and now that we have tested them we do know (confirmed). It may not be a new case at all, just an old case that was not tested before and has now been tested.

The use of confirmed cases as a substitute for actual cases and not taking account of testing numbers is plain wrong. We need numbers on tests vs confirmed cases. If this ration is growing the problem is getting worse and if it is dropping, we are "flattening the curve".

Yet we cannot find the data we need, and they keep reporting the same things.

So, what do we do?

While it is not perfect, the **death rate** might give us some clues.

The death rate reported is the number of deaths divided by confirmed cases.

At the end of an outbreak we usually can calculate a reasonable estimate of the death rate, but this is because we have actual case numbers (recovered and died) whereas at this stage of the pandemic, we only have confirmed case numbers, which is a very poor substitute without a massive amount of testing.

Numbers when it comes to deaths are far more reliable.

So, the false death rate (deaths divided by confirmed cases) is substituted for the real death rate (deaths divided by actual cases) which cannot be estimated until after the virus diminishes.

**We are suggesting that when countries have much higher reported death rates (using confirmed cases), this is likely to be due to the fact that the virus is much more widespread and the actual number of infected people is many multiples of the confirmed cases.**

This will be due to the virus spread getting out of control before action was taken to slow it.

So, let's look at some country's numbers with this new knowledge.

Country	Confirmed Cases	Deaths	Deaths / Confirmed Cases
US	188,633	3,896	2.07%
Italy	105,792	12,428	11.75%
Spain	95,923	8,464	8.82%
China	81,518	3,305	4.05%
Germany	71,808	775	1.08%
France	51,487	3,516	6.83%
UK	25,150	1,808	7.19%
Netherlands	12,595	1,039	8.25%
South Korea	9,786	162	1.66%
<b>Australia</b>	<b>4,763</b>	<b>20</b>	<b>0.42%</b>

We know there will be different age demographics and medical systems between different countries and there is certainly some people who are already very ill and will die which impacts death numbers, but we would not expect to see a large divergence in the experience of different countries and certainly not between countries with similar health systems.

However, look at the death rate in Italy, Spain and France compared to Germany. If you looked at absolute numbers of confirmed cases and deaths, you would think the situation was far worse in Germany than the UK or the Netherlands.

It is reasonable to assume that the virus has spread far less in Germany, than the other European countries on the list.

For example, the following table provides an estimate of the current number of cases based on the assumed actual final death rate (Death Rate = Deaths / **Actual** Cases, so Deaths / Death Rate = **Actual Cases**).

Country	Deaths	Final Death rate	Deaths / Confirmed Cases
US	3,896	2.50%	<b>155,840</b>
Italy	12,428	4.00%	<b>310,700</b>
Spain	8,464	4.00%	<b>211,600</b>
China	3,305	4.00%	<b>82,625</b>
Germany	775	1.50%	<b>51,667</b>
France	3,516	2.00%	<b>175,800</b>
UK	1,808	2.00%	<b>90,400</b>
Netherlands	1,039	2.00%	<b>51,950</b>
South Korea	162	2.00%	<b>8,100</b>
<b>Australia</b>	20	1.00%	<b>2,000</b>

This is certainly not a perfect solution and it produces less cases than confirmed cases if the final death rate is higher than the current rate, which is clearly wrong.

It should therefore not be used as an estimate of the cases, but rather a relative view of different countries.

We would prefer to have access to the models and all the data, but unfortunately that is not a present reality.

The good news is that despite all the news, Australia seems to be doing very well.

#### Notes

- The current death rate (deaths / confirmed cases) is likely to vary significantly to the final death rate. Even in hindsight, the true death rate will never be known, as there will be many people who get the virus and recover without ever being tested.
- You cannot use the ratio of cases to tests, to estimate total infections, as the tests focus on the most likely people to have the virus.

Our next e-mail will focus on the main approaches and virus and the medical and economic impact of these processes to give you a better idea of what may occur going forward.

We will follow that up with a piece on what is required to return to a more normal world. There is a lot of confusion around what seems to be the random number of 6 months the government seems to be using. This should further improve your understanding of the situation and the pathway going forward.

We understand that some of these e-mails are not so easy to digest. So please provide feedback, so we can communicate this information as effectively as possible.

A handwritten signature in black ink, appearing to be 'Mark Serry', with a stylized, cursive script.

Mark Serry  
**Head of Strategic Advice**