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How many people have died?
Excess death counts give a more accurate idea of the coronavirus’s true impact, reports Michael Le Page

WITH few countries doing enough testing to identify anywhere near all the deaths caused by the coronavirus, looking at how many more people are dying than usual is a better way of assessing the pandemic’s effect.

Why are the covid-19 death counts underestimates? Reported coronavirus deaths are typically severely ill people who have tested positive for the coronavirus in a hospital. However, many people who have died may not have been tested – especially those who died at home or in a care home. Looking at the number of excess deaths suggests the true death toll has been higher than the number reported in many places, including Italy, Spain, Sweden, and England and Wales.

What are “excess deaths”?
It is how many more people are dying than would be expected. For instance, at this time of year, normally around 50,000 people die each week in the 24 European countries that report deaths to the EuroMOMO monitoring scheme. This has shot up to about 90,000, according to the latest numbers, which aren’t yet complete.

How big is the disparity with official counts?
It varies. One study estimates that the coronavirus had caused the deaths of 52,000 people in Italy by 18 April (medRxiv, doi.org/ds6s) – more than double the reported figure. Similarly, a Financial Times analysis suggests the virus had led to 45,000 deaths in the UK by 21 April, more than twice the official figure then of 17,000.

Are all the excess deaths due to the coronavirus?
Figures from the UK’s Office for National Statistics indicate that the coronavirus is to blame for more than two-thirds of 45,000 UK death toll for 21 April estimated from excess deaths the excess deaths in England and Wales, based on the number of confirmed or suspected cases of covid-19 reported on death certificates.

That leaves roughly a third of excess deaths unexplained. Some of these may have been coronavirus cases without obvious symptoms, or cases where doctors weren’t confident enough to mention covid-19 on the death certificate. However, some of the unexplained excess deaths could be a result of more people dying of other causes, such as heart attack or stroke, because some are avoiding going to hospital due to the coronavirus. Emergency admissions figures from Public Health England suggest that attendance at hospital emergency departments in England was down about 50 per cent in April.

What about the crisis’s impact on hospitals?
It is certainly possible that some of the unexplained deaths may be indirect coronavirus deaths: people receiving less than the usual standard of medical care for a non-coronavirus condition due to the strain the virus is placing on healthcare systems.

Will we ever know the true toll of the virus?
Not exactly. But we will be able to get a much clearer picture once the crisis eventually ends and the overall number of deaths in 2020 and 2021 can be compared with other years.

What we do know for now is that most countries’ death tolls are undoubtedly underestimates – and for places including the US and Europe, many more deaths are still expected.

Monitor sewage to track spread of the coronavirus
Colin Barras

WE COULD begin monitoring about 2 billion people for coronavirus infection simply by looking at waste water.

“It feels like a no-brainer: everything is in place to do this,” says Rolf Halden at Arizona State University. Such monitoring would be a fraction of the cost of traditional clinical testing and could be done using essentially the same methods now being used to test individuals.

Depending on local factors, including the temperature of the waste water and the size of the sewerage system, Halden and his colleague Olga Hart say it should be possible to detect coronavirus in sewage if just one in every 1.14 of the people using the sewerage system is infected.

In ideal situations where, for instance, the waste water is cool enough to preserve viral RNA, Halden and Hart estimate that waste water testing could detect the virus even if just one person in 2 million is infected (Science of the Total Environment, doi.org/ds22).

Although such testing won’t tell you who is infected, it will reveal which towns – or even which districts within a town – are home to carriers. Halden says this would then allow for more targeted testing of individuals. “The numbers I’m crunching show you could begin to analyse 2 billion people for coronavirus right now,” he says.

“It sounds like an economic way to get a broad understanding of how widespread the disease is,” says Rolf Lood at Lund University, Sweden.

Lood is cautious about Hart and Halden’s figures, because some carriers shed up to 200 times more virus than others, but he thinks the technique could be used to quickly assess how widespread the virus is on a regional scale.