

Most of these deaths came in Hubei province. US markets quickly zeroed in on the fatality rate for the rest of China, which was 0.4 per cent in the study, and patriotically assumed that US medical care could surely do better than that.

And then the dismissive comparisons with the annual flu became more vocal. But the Chinese study had one major flaw. It was based on cases up to February 11. And 12,000 of the cases, or 27 per cent of the total, were only diagnosed after February 1.

To put it bluntly, these cases hadn't had time to die. Deaths from COVID-19 come in two waves, says Aylward, as lung function failed, and the level of oxygen in the blood fell.

"A lot of those people who are dying are going to be people with co-morbid conditions, and they are rapidly desaturating - oxygen desaturation - they're just getting tipped over the edge with a bit of disease," says Aylward.

This is before Acute Respiratory Distress Syndrome (ARDS) kicks in.

"But the deaths from the coronavirus lung processes - and that is the ARDS-like processes that they get, these people take somewhere between two and four weeks to get the full-blown disease sometimes. And to die. They can take quite a long time."

That's why Aylward is worried about the death rate in Italy, which has reported 53,578 cases and 4825 deaths, a Case Fatality Rate of 9 per cent. If you compare today's total deaths with case numbers for seven days before, the CFR jumps to a horrifying 23 per cent.

China is not reporting any new cases in Hubei province, but the deaths continue, as patients who are healthier and younger lose their long battles with the virus. This has pushed China's death rate from the 2.3 per cent cited in the study to 4 per cent today. Outside of Hubei province, the death rate has more than doubled to 0.9 per cent.

The problem isn't just that the death rate is almost double what the study found. What's not clear is how that affects deaths rates for different ages: how many younger patients are dying?

What can be said is that women are significantly less likely to die from COVID-19. And countries where younger people catch the virus, like South Korea and Germany, are reporting dramatically lower death rates. But they are creeping up.

Imperial College modelling indicates that if those with mild or no symptoms are included the infection death rate is around 1 per cent.

It was the age breakdown again which tripped up Britain's health experts modelling the impact of COVID-19.

On March 2, the Scientific Pandemic Influenza Group on Modelling (SPI-M), which advises the UK government, released a report setting out core findings about COVID-19.

"Our best estimate of the hospitalisation rate of those infected is from 2 per cent in the under 50s to 44 per cent of over 80s," the group concluded. "This is equivalent to 8 per cent of those infected overall."

These numbers are critical because once all a country's intensive care unit (ICU) beds are filled it can be assumed that all the people who need a ventilator but can't get one will die. And the reports from France that half the ICU patients less than 50 years old didn't square with the SPI-M figures.

The SPI-M report was the basis for Prime Minister Boris Johnson's strategy for COVID-19, which would flatten the curve of infections but essentially depended upon seeing up to 80 per cent of the population infected over a short period, while sheltering the elderly, in order to build herd

immunity - "a nice big epidemic", as Medley put it.

Last Monday, Professor Ferguson's modelling team at the Imperial College released a hastily reworked study which warned the government was on a disastrous course because the numbers were wrong. It predicted its mitigation strategy would produce 510,000 deaths in the UK and 2.2 million in the US.

Ferguson's team had only reached this conclusion "in the last few days, with the refinement of estimates of likely ICU demand due to COVID-19 based on experience in Italy and the UK (previous planning estimates assumed half the demand now estimated) and with the NHS (National Health Service) providing increasing certainty around the limits of hospital surge capacity".

In short, there were fewer ICU beds than previously assumed and a higher rate of hospitalisation for people under 50. This would swamp the NHS and result in a huge death toll, which meant the government's only option was to focus on containing the disease, clamping down hard on the epidemic.

Overnight, after Ferguson plugged this message in the corridors of Whitehall, Britain's strategy changed.

This change in position appears to have caught Australian authorities by surprise as well, for example with the paper's recommendation to close schools and universities.

Ferguson's paper makes grim reading, but the position in Australia, even as the numbers are taking off, is different from Europe in several key aspects.

On Sunday, Australia had 1316 confirmed cases, a number doubling about every 3.3 days. If this rate is maintained, then in 10 days time the total would be 11,000. In fact, there may be that many cases out there right now, inoculating or only beginning to show symptoms.

But there are two problems with this kind of estimation. The calculation doesn't include any effect of the social distancing measures the government has been introduced - they will take 10 days to show an effect. In addition, more than half of Australia's cases were contracted overseas by travellers.

In NSW, these travellers accounted for 251 of the 533 confirmed cases as of Sunday. Discounting the cases still under investigation, travellers comprised 58.6 per cent of total cases. These cases, most of which have been self-quarantining, aren't a measure of infection in Australia, they're a measure of international passenger flow.

Closing the borders will cut off the supply of these cases... with that 10-day lag. But the sheer number of cases increase the risk that travellers with mild cases are being missed, and will seed new clusters. So it's the locally grown cases that are the ones to watch.

In NSW as of Sunday, 131 cases (30.6 per cent) were linked to existing cases, which is community transmission, but again health authorities can clamp down on these by contact tracing and self-quarantines if they do it fast enough.

The worry is the cases where the source can't be identified. That's jumped from just two cases in NSW on March 12, to 52 on Saturday before dropping to 46 on Sunday as contact tracing cut the total. It's a problem, but it isn't everywhere yet if the testing is wide enough.

As new cases from travellers drop off - barring any outbreak from passenger cruises - that part of the growth rate will shut down.

The important thing then will be to watch not the overall percentage change, but the growth in local and unidentified cases. And the 10-day delay means testing is a lagging indicator.

It will depend on how closely social distancing is observed. In Italy, the growth in new cases dropped from 24 per cent to 12-13 per cent, before edging back up to 14-15 per cent in recent days.

Getting the mix of policies for COVID-19 right is literally a matter of life and death. Neil Ferguson's study could have saved hundreds of thousands of lives, as a major proportion of the world's population faces its own personal encounter with the virus.

Including Ferguson himself, who was diagnosed with COVID-19 on Wednesday, two days after releasing his report. "There is a lot of COVID-19 in Westminster," he tweeted.

He was, of course, still at his computer. Still working the numbers. **AFR**

SHOULD WE STAY OR SHOULD WE GO?

Separation For those Australians who have based themselves overseas, the tyranny of distance is starting to hit home, writes Hans van Leeuwen in London.



Restrictive conditions are bearing down on the lives and livelihoods of expatriate Australians.

Former Victorian government minister Andre Haermeyer has lived almost 12 years in Frankfurt, where he works as a business consultant. Right now, like many Australians on the Continent, he and his wife face a difficult choice: as lockdowns bite, borders close, flights are cancelled and the Morrison government urges Australians home, should they stay or go?

"We've got family in Australia, and that worries us; but we're so rooted here in Germany, with everything we own," he muses. "Things moved so quickly, so we chose to stay. But we're still debating whether to get on one of the last Qantas flights."

Tea Dieterich, a German-Australian who runs a translation business across both hemispheres, is more certain: she was hoping to be on a flight out of Germany this weekend, and if it takes off she'll be seeing out the crisis in her home town of Brisbane.

I'd love to dash home. I totally understand anyone who wants to get on a plane and get back to Australia.

Majella Clarke, a Helsinki-based consultant

"I haven't received a cancellation email. I'm hoping to be in Brisbane on Sunday and I'll be isolating for 14 days," she says. "It's very unlikely I'll be back in Europe any time soon. Best-case scenario, I'll be back in June."

Things aren't easy in Australia during the COVID-19 crisis by any means, but in the pandemic epicentre of Europe, the restrictive conditions are bearing down on the lives and livelihoods of expatriate Australians.

Just like in Australia, there's no loo roll - even on a Continent that pioneered the bidet. But more seriously, in Italy and France any outside excursion requires official permission, in the form of documents that you download and carry with you for the inevitable police inspection.

"I didn't go out today, or yesterday, and I probably won't go out tomorrow," says French lawyer Frederic Calinaud who isn't Australian but has an Aussie twang from his university days there, and helps run the local Australian business chamber.

He's a keen jogger, but in France you can't

even go out for a run more than two kilometres from your house. "I went out on Tuesday to go to a post office with some registered letters, but you can't send letters any more, even in the scope of legal proceedings. We can't do anything. We just have to wait."

Despite these conditions, some Australians are staying put: their roots run deeper, their businesses are here, and they'll just have to sweat out the increasingly onerous lockdown.

Martin Hilhorst runs a France-based company that imports Australian beer, wine and spirits into the European market. He's staying on to try to save his business, but has ditched Paris for his place in the countryside.

"Even down here the controls are quite strict," he says. "We're in a small town but if you don't have the paperwork to go out, you'll still be fined." Outside his local supermarket, where you have to queue, the footpath is painted with distance markers to keep people 1.5 metres apart.

Hilhorst had been planning an imminent trip to Australia, but dropped it as he wasn't sure he'd be able to get back to France. Now his biggest worry is the four containers heading from Down Under by ship, full of goods for which he has no customers and no storage space. "My cash flow is going to run dry very quickly," he says.

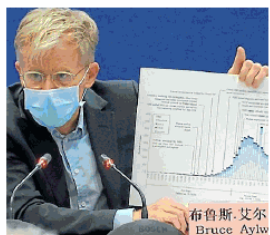
Even among those who've built lives on this side of the world, and who aren't choosing to go back, there's anxiety about the idea that the borders are shut and the link with Australia could be severed.

"We haven't lived in Australia for almost 10 years, but it's kind of like being told you might lose your citizenship or something," says Belgium-based Alison Prior. "The thought that maybe you can never go home again no matter what happens to your family in the meantime - I know that's an over-reaction, but still, it's go now or who knows."

Majella Clarke, a consultant who lives in Helsinki, agrees. "I'd love to dash home. I totally understand anyone who wants to get on a plane and get back to Australia."

One Australian executive based in London says she'd been planning to settle down in Britain but the coronavirus crisis has changed her mind. "I hate the feeling of distance from my family," she says. "I'm considering moving home at the end of the year."

There might not be a cure for COVID-19 yet, but it looks like the virus itself could be an unexpected remedy for some people's itchy feet. **AFR**



Bruce Aylward says understanding the severity of COVID-19 is key. PHOTO: AP