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Cite this as: *BMJ* 2020;369:m2376<http://dx.doi.org/10.1136/bmj.m2376>

Published: 12 June 2020

## CORONAVIRUS

# Has Sweden's controversial covid-19 strategy been successful?

Sweden has stood out in the global pandemic by eschewing lockdown and seemingly aiming for herd immunity. **Heba Habib** reports that Sweden's public was supportive of the strategy, but is now paying a heavy price.

Heba Habib *freelance journalist*

For months Swedish public health authorities have defended their controversial decision not to lock down the country in response to the global covid-19 pandemic. Schools were closed to children over 16 and gatherings of more than 50 people were discouraged, but bars, restaurants, and other public spaces remained open, and citizens were trusted to distance themselves.

At the heart of the government's strategy was the implicit and controversial idea that, rather than contain the spread of disease, a country could achieve herd immunity by allowing a proportion of the population to be infected—at the expense of deaths among the vulnerable. “They did not want to put it bluntly, but seeking herd immunity was always inherent in the Swedish strategy,” says Anders Bjorkman, a professor of infectious diseases at the Karolinska Institute in Stockholm.

Herd immunity occurs when a large section of the population (generally considered to be between 50% and 90% depending on how contagious the infection is<sup>1</sup>) becomes immune to a disease or virus, therefore stopping its spread. This occurs when people have enough antibodies to repel the virus—either through having been exposed to the virus and survived, or through vaccination. Advocates claimed that the Swedish approach would be more sustainable in the long run than other countries' harsher measures. And at first it seemed to be working.

Speaking at a press conference on 26 April, Anders Tegnell, the epidemiologist credited with the Swedish strategy, said that the rise in infections was beginning to flatten and had reached a plateau in Stockholm—the centre of the Swedish outbreak—as well as in other parts of the country.

As case numbers proliferated around the world and death tolls rose in neighbouring European countries, Swedish experts, and indeed the public, still seemed largely supportive of the strategy. According to a poll conducted between 17-19 April by independent agency *Novus*, 73% of 1000 respondents said they trusted the strategy of the Public Health Agency of Sweden.

But time has told a different story.

### Explosive numbers

Sweden has the largest number of cases and fatalities in Scandinavia—around 37 000 confirmed cases at the time of writing, compared with its neighbours Denmark, Norway, and Finland which have 12 000,

8000, and 7000 cases, respectively. All three neighbouring countries adopted a lockdown approach early in the pandemic, which they are now slowly lifting. All three have since re-opened their borders, but not to Sweden.

Sweden recorded the most coronavirus deaths per capita in Europe in a seven day average between 25 May and 2 June. The country's mortality rate was 5.29 deaths per million inhabitants a day (the UK ranked second with 4.48) according to Our World In Data,<sup>2</sup> an online research publication based at the University of Oxford.

And what of herd immunity? An ongoing nationwide study conducted by the Public Health Agency of Sweden on 20 May found that just 7.3% of Stockholm residents had developed covid-19 antibodies by late April—and that was the largest number of positive results found in the country.

“It means that just like other European cities in hard hit countries, it will take a long time before the majority of the population has gone through the infection and are likely immune,” said Tove Fall, professor in epidemiology at Uppsala University.

On 11 May, the World Health Organization said that global studies had found antibodies in only 1-10% of the global population, with similar findings emerging from Spain and France. The agency warned against any country depending on herd immunity as a strategy.

### Backlash

“I think we're starting to see that the Swedish model maybe wasn't the smartest,” said former state epidemiologist Annika Linde in a 19 May interview with newspaper *Dagens Nyheter*.<sup>3</sup>

More than half the deaths in Sweden have occurred in care homes for older people, something Tegnell has admitted is a “failure,” especially since a cornerstone of the strategy was protecting those over 70.

Anders Vahlne, a professor of virology at Karolinska, thinks that government advice misinformed the public by implying that those who don't have symptoms are not contagious (the Public Health Agency of Sweden's website states “as long as siblings or other members of the family do not show symptoms of disease they can go to school, preschool, or their workplace.”). “I think this amongst other things has caused a lot of older people in care homes

to get sick and die and it's quite unnecessary," Vahlne told *The BMJ*. IVO, the Health and Social Care Inspectorate, reported<sup>4</sup> that 75% of the complaints it had received from the public and from care workers were about the lack of protective equipment such as facemasks in care homes. One care home worker, speaking anonymously, told *The BMJ* that "staff often work for 14 hours with substandard protection and continue working despite exhibiting symptoms." The guidelines keep changing in accordance with the availability of material, they added.

"One should have known what poor preparedness we had in both healthcare and care of older people," said Linde. "A lockdown could have given us a chance to prepare, think things through, and minimise the spread of infection."

More worryingly, Swedish doctors have expressed alarm over the matter-of-factness with which authorities seem to be treating the plight of older and vulnerable people.

Yngve Gustafsson, professor of geriatric medicine at Umeå University, noted that the proportion of older people in respiratory care nationally was lower than at the same time a year ago, despite people over 70 being the worst affected by covid-19. He expressed concern about the increasing practice of doctors recommending by telephone a "palliative cocktail" for sick older people in care homes.

"Older people are routinely being given morphine and midazolam, which are respiratory-inhibiting," he told the *Svenska Dagbladet* newspaper,<sup>5</sup> "It's active euthanasia, to say the least."

## Last chance

Jon Tallinger, a specialist in general medicine and operations manager at a hospital in Tranås, believes that Sweden's high death toll, particularly among older people, has less to do with the covid-19 strategy and is more a consequence of decades of privatising the healthcare system.

"The power has been taken away from the doctors and healthcare specialists and given to politicians," Tallinger told *The BMJ*, "So now municipalities lack the resources to save the lives of older people and those at risk." He added that thousands of lives could be saved if people in care homes with the virus received oxygen supplies. "Older people die because they do not receive the treatment they need."

The government insists that Sweden's high per capita death toll can't be attributed to the lack of a lockdown. In a press conference on 29 May, Tegnell said the comparisons were unfair as "other countries are not reporting the actual death rates. Sweden is the best in the world in reporting the actual number of dead." The government has given no indication that it will change its strategy beyond a ramping up of testing.

Yet even on that, Tove Fall said, "What is not so much discussed so far, is why Sweden is among the worst countries in Europe when it comes to testing." According to Our World in Data, Sweden had carried out 23.64 tests per 1000 people as of 24 May, compared with 31.59 in the UK, 31.88 in Finland, and 44.75 in Norway.

Until April, only high priority groups—patients in hospital, high risk groups such as people over 70 or with underlying conditions, healthcare staff, and key workers—were being tested, and even then only those with severe symptoms. Minister of health Lina Hallgren pledged to increase to 100 000 tests per week by mid-May, but the government has fallen far short of that goal—recent numbers ranged from 28 000 to 33 000—sparking criticism from opposition party members and even the prime minister Stefan Löfven.<sup>6</sup>

Anders Tegnell said in a 3 June press conference that there had initially been problems with laboratory capacity "but also healthcare capacity because testing is a very complicated chain of events. You need to have staff and resources in each part of the chain." He said that while the laboratory issue had now been fixed, the resources and training are still lacking.

Fall said the restricted and low levels of testing could have consequences for tracing and isolation efforts, and that this problem isn't being prioritised by the authorities. "Testing of symptomatic cases in the population has not been done if the patient is not in need of hospital care or is not a healthcare worker," said Fall. "Right now, recommendations for isolation of cases are based on symptoms only, and no household quarantine is recommended."

Meanwhile, contact tracing has been largely abandoned since the beginning of March. This despite the fact that, according to Carina King, an epidemiologist at the Karolinska Institute, Sweden is very well positioned for contact tracing thanks to its commonplace digital identity system used to access public services and more.

## Remorse?

On 2 June, Anders Tegnell was interviewed by *Sverige Radio*, and admitted there was "quite obviously a potential for improvement in what we have done."<sup>6</sup>

Yet in a separate interview with the *Dagens Nyheter*, he said he still believed the basic strategy had "worked well." "I do not see what we would have done completely differently," he said, "Based on the knowledge we had then, we feel we made the appropriate decisions."

"Other countries started with a lot of measures all at once," he told *Sverige Radio*, "The problem with that is that you don't really know which of the measures you have taken is most effective."

"If we were to encounter the same disease again, knowing exactly what we know about it today, I think we would settle on doing something in between what Sweden did and what the rest of the world has done."

**Competing interests:** I have read and understood BMJ policy on declaration of interests and have no relevant interests to declare.

Provenance and peer review: Commissioned; not externally peer reviewed.

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