Lockdowns and face masks really did help to control covid-19

Non-vaccine measures such as social distancing and wearing face masks have been "unequivocally effective" at preventing the spread of the SARS-CoV-2 coronavirus, according to a major report by the UK's Royal Society

By Michael Le Page

24 August 2023

A UK government covid-19 campaign poster in London in January 2021 Dinendra Haria/ Getty Images

The main non-vaccine measures used to control the covid-19 pandemic – including lockdowns, face masks and test, trace and isolate – were effective at stemming the spread of the SARS-CoV-2 coronavirus, according to reviews of thousands of studies done around the world.

"They work," says Mark Walport at the UK's Royal Society, who chaired an expert working group behind a major report based on the reviews. The measures saved lives by preventing many people from being infected until after vaccines and drug treatments had been developed, he says.

The findings are important because there will be another pandemic at some point, he says. "There could be something that's very much worse than SARS-CoV-2."

How well these measures worked varied depending on how and when they were implemented, but they were still "unequivocally effective", particularly when used in combination and when levels of infection were low, the report says.

“[We] saw the importance of quick and decisive action,” says Salim Abdool Karim at the University of KwaZulu-Natal in South Africa, one of the working group. “You can’t wait until you get perfect evidence. You’ve got to act and act decisively, and make these difficult decisions.”

The report acknowledges that these so-called non-pharmaceutical interventions (NPIs), such as lockdowns, can have serious social and economic consequences, but it didn’t look at these aspects. “The challenge for policy-makers is to balance the beneficial effects of NPIs in reducing transmission and infection against their adverse consequences,” says Walport.

The report is based on six reviews, looking at: lockdowns and social distancing; face masks and mask mandates; test, trace and isolate; border controls; environmental controls such as better ventilation and air filtering; and the impact of communication on ensuring people followed these measures.

For each review, thousands of studies done around the world were narrowed down to several hundred that were regarded as the best. Almost all are so-called observational studies rather than the randomised controlled trials that are considered the most reliable source of evidence.

It is difficult or impossible to do randomised controlled trials of some kinds of measures during a pandemic, says Christl Donnelly at the University of Oxford, another member of the working group. For instance, people cannot be randomly assigned to be locked down or not. While there may be issues with individual observational studies, putting hundreds of them together can provide a clear result, she says. “It’s the totality of the evidence.”

The reviews found that social distancing and lockdowns were the most effective overall measures, with more stringent rules having greater effects.

Border controls were also effective when combined with measures to detect cases that would otherwise have slipped through the net. Quarantining people on arrival was the most effective form of border control. However, these measures only make sense for countries with much lower levels of infections than others, says Walport. If their levels of infection are similar, they make no difference, he says. Screening people before travel based on symptoms such as temperature had no effect.

Like other measures, border controls also became less effective as more transmissible variants of SARS-CoV-2 evolved, says Karim.

According to the International Health Regulations, which apply to members of the World Health Organization, countries aren’t meant to impose unnecessary border controls. In practice, countries ignore this during outbreaks, says Chris Dye, a member of the working group who is also at the University of Oxford.

“This is very welcome analysis and evidence especially as we seek to learn lessons for future pandemic responses,” says Christina Pagel at Imperial College London, who wasn’t involved in the report. “We could certainly have done better in 2020.”

“We should put in place now plans for how we would ramp up testing and contact tracing in a new pandemic,” says Pagel. “Some key measures, such as cleaner indoor air, can be put in place right now.”