

Opinion **Coronavirus treatment**

We must not wait idly for an elusive Covid-19 vaccine

A package of behavioural and drug-based interventions will save lives and better prepare us for the next crisis

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While it may not be impossible for science to outperform Mother Nature, it will not be easy © Jean-Francois Monier/AFP/Getty

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It is widely assumed that a Covid-19 vaccine will come to our rescue soon. This [is unlikely to be true](#), but, more importantly, it is a dangerous assumption on which to plan the overall response to the pandemic.

In 1990, I hosted a London conference ironically titled “Malaria: Waiting for the Vaccine”. Malaria had been worsening and many believed that turning the tide was dependent on a vaccine. Years of research had failed to produce an effective product, but the vaccinologists were incorrigibly optimistic.

Thirty years and billions of dollars later, we have a single vaccine of modest efficacy and short duration of protection being piloted in Africa. But we did not sit around waiting: we launched a multipronged attack involving new drugs and insecticide-treated bed nets. We made dramatic progress.

We have made similar strides fighting HIV and Aids. In the 1980s and '90s, we had no effective weapons and hopes were pinned on a vaccine which, despite large investments and scientific ingenuity, we still do not have. Instead we have vastly improved antiretroviral drug cocktails, which have had a huge impact on mortality and transmission.

The two lessons to be drawn are that our aspirations in vaccine development are not always realised, and that we can make great progress nonetheless with new drugs and other interventions.

Our faith in vaccines against Covid-19 is partly driven by the counter-narrative, which is equally true. Smallpox was eradicated by a vaccine and those against polio, measles and other viral diseases have greatly improved human health. Still, the challenges to developing and deploying a safe and effective Covid-19 vaccine in 2021 are substantial. We do not know whether natural infection confers robust immunity.

If it doesn't, we are in trouble. While it may not be impossible for science to outperform Mother Nature, it will not be easy.

More than [140 vaccine candidates](#) are under investigation. Six are already in the final stage [phase III trials](#), which is remarkably rapid. Some use new technology not found in any currently used vaccine. The big investments being made are entirely warranted.

But we should not assume that our efforts to develop a vaccine will be successful soon, or at all. It is also important to have an honest discussion about what kind of a vaccine may emerge from the early candidates. Will it be like the flu vaccine, partially protective for a short period, or like the measles vaccine, highly protective for a lifetime?

It is widely believed that a vaccine will provide a “solution” to the pandemic and save the day. Politicians and vaccine developers have incentives to reinforce this view. But this will only be true if the vaccine has high efficacy, a protracted duration of protection and a dosing schedule that is not too demanding. It must also be possible to manufacture billions of doses and to transport, store and administer them worldwide. Such a product is unlikely to be available by the end of 2021. It may never be discovered.

This should provide a wake-up call for the development of a coherent strategy to replace lockdown. Lockdown is effective at reducing down the number of daily new cases. But it is the bluntest public policy instrument ever mobilised and causes huge collateral social and economic damage. All countries need a package of measures, constantly refined and adjusted, that will keep the transmission rate R below 1 but allow most economic activity to resume.

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East Asian countries have shown the way: obligatory masks, pragmatic social distancing, modified practices at work and school and obsessive hygiene should be accompanied by testing, tracking, isolating and quarantining and abetted by smart apps and use of geospatial data. One size will not fit all. We also need effective drugs to prevent infection in high-risk groups, treat early mild cases in the community and keep severely ill patients alive. Drug development will move faster than vaccine development, and several new or repurposed drugs are likely to be available by mid-2021; indeed, two already

are.

Daily [cases and deaths are rising in the US](#) as a result of partial unlocking with no alternative strategy. The [same fate awaits the UK](#), and is being witnessed sub-nationally. This is, in part, because we have been lulled into trusting that a vaccine will arrive.

If cutting-edge science does produce a strong vaccine in the next year or two, we will break out the champagne and work night and day to deliver it to the maximum number of people. But, meanwhile, a package of behavioural and drug-based interventions will have saved many lives and will strengthen our preparedness for the next crisis, Pandemic X, which will surely come.

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