

## R&D, Manufacturing and Delivery of Vaccines: A Global Deal in the Fight Against COVID-19

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*Given the massive uncertainty surrounding how COVID-19 will play out in terms of health outcomes as well as economic and social outcomes, policymaking is as hard as it can possibly be. Measures that are sensible at the time they are taken may prove highly costly and ineffective in retrospect. No-regret policies are those that are worth doing now regardless of which scenario actually plays out. This note identifies key actions in an area where developing countries could be proactive: vaccine development, production, and distribution. Resources spent on these now will not be wasted in any scenario.*

Every country wants to get out of this crisis. But the nature COVID-19 is such that even if we flatten the incidence, through lockdowns or other measures, it is unlikely to make the disease go away. The only [total exit is a vaccine](#) as it is likely that therapeutics and increased diagnostics will only mitigate its impact. Usually, the entire process of vaccine development takes years, or at least 12 to 18 months in exceptional circumstances. However, in this case, there appears to be a window of opportunity to go faster than ever before by acting now, including through accelerating investment in production and regulatory approval. The race is on, but without global coordination now, development is likely to be slower, poor countries will be priced out of this market for a long time to come, and delivery to those most in need will be needlessly delayed. All this requires substantial investment, especially by G7 and G20 countries now, but also extensive coordination with involvement of emerging and developing countries.

### Collaborate on R&D

Many dozens of firms and university research labs are working on a vaccine. A few have just started or are about to start with human trials. [CEPI](#) (the Coalition for Epidemic Preparedness Innovations) provides a coordinating role for eight vaccine programmes. Most investment is coming from higher-income countries, some private but also, belatedly, a lot of public money, such as in the US, Germany, and the UK. Vaccines may well become available with variable speed/efficacy/safety features, meaning that the first vaccine, even if we start using it immediately for emergency use, is not necessarily going to be the one we will still be using in a few years. Accordingly, multiple vaccines should continue to be developed for some time to come. [Lurie et al. \(2020\)](#) explain with far more authority some of the issues and opportunities.

There are obvious ways to push this further, such as by forms of [advance market commitments](#), whereby rewards are linked to speed as well as efficacy or safety features. However, there is an obvious space for collaboration with developing countries too that can help speed up development: with the crisis peaking in different locations at different times, and possible variable seasonality in disease incidence, conducting trials across a variety of geographies in Europe, Asia, the Americas, and Africa will improve the speed at which

results from trials can be delivered. If managed well and fairly, this will increase early access opportunities for such collaborating countries, while boosting capabilities. Similar collaboration could be designed for doing trials of multiple candidates at the same time, and safety and other regulatory work—stopping avoidable delays later on.

## **Boost and collaborate on global manufacturing capability**

It is highly likely that in the months after a successful vaccine has been developed there will be a huge demand and limited supply. This happened in 2009 with [H1N1 influenza](#). If so, it is easy to predict what will happen: essentially a vaccine war, whereby national interest will be invoked to make sure limited supplies will go to those countries with most purchasing and political power. And as the science is not predictable and it is unclear who will deliver the vaccine at speed with sufficient efficacy and safety, even rich countries may lose out.

There is only one way of avoiding this now: massively pre-committing to the production of several likely successful vaccines now and by investing in the manufacturing capability and the investment to scale up production rapidly. In that way, supply will be high at the time a vaccine has been approved. This means producing now even before a vaccine has proven its efficacy—and running the risk of having to pour away millions of doses of vaccines.

To do so, organisations like CEPI, GAVI and others could pre-identify some of those that have a sensible balance of speed with likely efficacy, and produce several of them at the same time in vast quantities. Many billions worth of advance market commitments for the production of several vaccines could be issued in coming weeks and months, well before the end of human trials to ensure a vast stock when the trial science catches up. This is already happening with the Oxford vaccine now licensed to Astra Zeneca, but even so, despite a commitment to provide to the developing world, reported deals have been struck for close to one billion doses for the UK, USA and EU countries, while for now only 300 million will go to poorer developing countries.

Would this cost crazy sums? It would be tens billions of dollars, but given that likely losses to the global economy are already running in the trillions of dollars and even fiscal plans of the G20 are in the trillions, such sums feel like remarkably good value for money. A fundraiser led by the EU and the UK brought in about \$4.5bn— more will be needed to finance the R&D and especially the manufacturing, and not least to secure resources for the developing world.

Development partners can help here, as can other countries with manufacturing capabilities. It is an obvious way for the World Bank Group's International Finance Corporation to play a crucial role and help identify and spread manufacturing capability for this purpose, also across emerging and developing economies. Massive supply will make shortages and the prospect of a vaccine war less likely, and create the prospect that those who need a vaccine most will get access.

## **Prepare for delivery of vaccines now via a global deal**

Getting vaccines delivered is never an easy task, although it has improved dramatically in developing countries including with support from international organisations such as WHO and GAVI. As long as there are vaccine shortages, the prospect of the developing world—and especially the poorest countries—to lose out is real. No global deal for access to vaccines for these countries in the coming 12 or 24 months is credible unless manufacturing will be boosted at the scale described above. However, even so, the task for delivery will still be huge. It will require funding, it will require much effort—but with a head start, this will be far more likely to be successful. Successful delivery can be planned now through careful dialogue and sufficient funding. Countries themselves can do much of this

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work; international organisations should get ready to support them on this now; and richer economies in the G7 and G20 should commit and allocate funding now to make this work.

It is true that developing countries are unlikely to be in control in the area of vaccines, as the R&D capability is mainly in the G7 and possibly in China and at most a few G20 countries. However, some others, such as India, may well have the required production or local trial capability and experience to contribute. What is true for vaccines may also be true for therapeutics and diagnostics. The latter will definitely be required for some time to come, as would be protective equipment and clothing for medical staff and community health workers. For all these there is a window of opportunity to spread their production across firms and geographies, making conflict less likely.

**Editor's note:** This note is a slightly updated excerpt from a longer article by Professor Dercon published by the Centre for Global Development titled [“No-Regret Policies for the COVID-19 Crisis in Developing Countries”](#).

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Between 2011 and 2017, he was Chief Economist of the Department of International Development (DFID), the government department in charge with the UK's aid policy and spending. In this position, he provided strategic advice, and was responsible for ensuring the use of evidence in decision making.

Before joining the University of Oxford, he held positions at the University of Addis Ababa (Ethiopia), the Catholic University of Leuven, and WIDER (Helsinki), part of the United Nations University.

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