



Global Health Centre, Graduate Institute of International and Development Studies, Geneva, Switzerland

Correspondence to: S Moon
suerie.moon@graduateinstitute.ch
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Embedding global access in development of future pandemic vaccines

Public investment in vaccines must be governed by global rules on knowledge sharing

Suerie Moon, Surabhi Agarwal, Anna Becker, Adrian Alonso Ruiz

Faster, broader, fairer global access to covid-19 vaccines is needed now. Vaccines can protect lives and livelihoods, help end the pandemic, mitigate threats of increased impoverishment and inequality, and reduce the risk of new variants.¹ It makes ethical, epidemiological, and economic sense to redistribute doses from high income countries, which have more than they can use and a disproportionate share of global supply, to low and middle income countries facing severe shortages.² So does proactively transferring vaccine technology to help scale-up production in all regions so that no country has to go without.³

The development of the first covid-19 vaccines in record time was a scientific success but a “catastrophic moral failure.”⁴ As of 1 September, high and upper middle income countries had vaccinated over 60% of their populations with at least one dose, while lower middle income countries had reached just 24% and low income countries less than 2%.⁵ Covax, the multilateral initiative for vaccine access, has purchased doses covering only 16.6% of participating countries’ populations. International donations can help but are insufficient and unreliable: only about 10% of the nearly 15 billion doses secured globally have been earmarked for donation.⁶

Covid-19 vaccines were developed with at least \$5.6bn (£4bn; €5bn) in upfront public investments and a further \$45bn in public advance purchase commitments (reducing risk to manufacturers), building on over \$17bn in public funding for basic research.^{7 8} But governments did not leverage this funding to ensure global access. Avoiding repetition of this catastrophe with the next generation of covid-19 vaccines—and in future pandemics—will require new international agreements and financing.

Although the currently available covid-19 vaccines are demonstrably safe and effective, we still need vaccines that are easier to use (heat stable, single dose, needle free), more effective at blocking infection, affordable, and accessible to all. Nearly 300 further candidates are under development, including 69 in late stage clinical trials (phase II or III),⁹ offering an important opportunity to do better in this pandemic, and the next.

Conditional funding

Making the next generation of covid-19 vaccines accessible requires that clear conditions are built into future public and philanthropic investments. Funding made conditional on data sharing would facilitate faster vaccine development, while compulsory sharing of technology, know-how, and other intellectual property would help scale-up production

of successful candidates. Finally, requiring producers to price vaccines at fair, affordable levels, and to supply countries on the basis of need rather than wealth would expand access.

However, the current market based approach handsomely rewards the opposite—the hoarding of data, know-how, and intellectual property and selling vaccines to the highest bidder. The 2021 global market for covid-19 vaccines is estimated at up to \$190bn¹⁰ with Pfizer-BioNTech and Moderna combined projected to generate revenues of over \$70bn.¹¹ Governing a global pandemic vaccine market in the broader public interest requires governments to invest early and jointly in risky health technologies, according to shared rules.

Experts have called for the creation of an international fund of \$15bn a year for pandemic preparedness to pay for vaccine research, development, and production (among other priorities), with countries contributing based on national income.³ The Coalition for Epidemic Preparedness Innovations (CEPI), a multilateral initiative and partner in Covax, has provided proof of principle for such a fund. It mobilised \$1.4bn from governments to invest together, at risk and at scale, becoming the world’s third largest source of public funding for covid-19 vaccine research and development.

CEPI made its first covid-19 grants in early 2020, showing that preparedness can pay off in rapid reaction times. Its investments in vaccine candidates and manufacturing are the most geographically diverse of any public funder, mitigating the risk of scientific failure and disruptions in supply.¹² But CEPI also had to fundraise and compete with other research funders such as the US and German governments, which could rapidly mobilise more money and offer companies fewer access obligations. Ultimately, CEPI was unable to secure the access provisions needed to ensure an equitable global supply of vaccines.¹³

An adequately resourced international fund with strong conditions attached could address several of these challenges. However, such an ideal may lie beyond the reach of geopolitics today. The US, Europe, China, and Russia have competed more than collaborated in the development and deployment of covid-19 vaccines.¹⁴ Creation of regional funds or clubs of like-minded countries may be more feasible than a single, overarching global solution, as countries can invest in developers and producers closer to home. Successful procurement of covid-19 vaccines by the European Union and African Union highlight the feasibility of regional solidarity. Already, the EU is establishing a bloc-wide agency

to develop pandemic health technologies,¹⁵ and a regional vaccine technology transfer hub is being created in South Africa.¹⁶

To ensure that such initiatives add up to a coherent global system, however, they must commit to common rules on technology sharing that allow all regions to produce any successful vaccines. Such rules must be negotiated to serve the self-interests of all countries—a difficult task in this geopolitical climate, but well worth the effort to achieve greater health security with equity.

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