

# FINDING AN HIV VACCINE- FIVE LESSONS FROM THE SEARCH FOR A COVID-19 JAB

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The Covid-19 pandemic has shown that vaccine development and testing timelines can be shrunk from decades to months, but not without shortcomings. (Angel Garcia/Bloomberg via Getty Images)

The way in which the world has responded to [Covid-19](#) has fundamentally changed ideas about what is possible in vaccine development but, regrettably, access to that scientific knowledge remains the property of a few drug companies and research institutions in wealthy countries.

Covid-19 has shown us that the urgency to end an epidemic can be so great that billions of dollars in research funding can be found within months. It has demonstrated that public institutions, universities, pharmaceutical companies and non-profit organisations can work together in ways we've never seen before to create lifesaving technologies.

And above all, the pandemic has revealed that development and testing timelines can be shrunk from decades to months.

But we've also seen crucial mistakes costing lives — and we should learn from those blunders so that poor countries can benefit from future vaccine development efforts just as much as richer ones.

### **Why an HIV vaccine can benefit from the Covid-19 lessons**

Such lessons can transform the development of an [HIV](#) vaccine — a job that the world desperately needs.

Why? The Joint United Nations Programme on HIV and Aids ([UNAids](#)) estimates that about [1.7-million people are infected with HIV each year, and nearly 700 000 died of Aids-related illnesses](#) in 2019.

Just as social distancing and mask wearing have saved countless lives from Covid-19, access to HIV prevention pills and injections (also known as pre-exposure prophylaxis), as well as safer sex and injection practices, have prevented untold HIV infections and deaths.

But both HIV and Covid-19 interventions are of little use if they are not accessible to those who need them most. Neither of these epidemics will be ended if we continue to block or slow down access for poorer countries because of their inability to pay as much for technologies as wealthy countries.

### **What did we learn from making Covid-19 jabs?**

Covid-19 vaccine research was accelerated by many factors. One reason is that the SARS-CoV-2 (the virus that causes Covid-19) is a relatively simple target for a vaccine – far less complex than HIV. Another is the head start that the search for a Covid-19 vaccine received from the scientific knowledge, technologies, networks and community engagement models developed by HIV researchers.

But Covid-19 vaccine studies also used novel methods to expedite results. We break them down.

#### **1. The more money, the better the chances that results will come faster**

Money jump-started Covid-19 vaccine research. The estimated [\\$39-billion](#) spent on Covid-19 vaccine development to date is nearly [50 times what's spent on HIV vaccine research](#) each year. [Even less is available](#) for vaccines against TB and malaria.

#### **2. The more diverse the funders, the higher the buy-in**

Funding diversity has been another advantage for Covid-19. While governments, philanthropies and companies around the world lined up to invest in the Covid-19 response, only a handful of funders support HIV vaccine research. One donor, the US government, accounts for [80% of global investment in HIV vaccines](#).

Much more diversity in funding is needed to bring new players and ideas to the HIV vaccine research table, and to replicate the “can-do, must-do” mindset that guided Covid-19 vaccine development. In that highly successful approach, a diversified, global pool of public and philanthropic organisations supported every phase of research, from basic science through late-stage research and development (R&D), and they funded every reasonably promising Covid-19 vaccine approach.

### **3. Nothing happens without collaboration**

The search for Covid-19 vaccines has also been marked by unprecedented scientific collaboration and innovation. Covid-19 researchers were encouraged to think creatively, pursue multiple leads simultaneously, pool data, engage in open-source research and collaborate across labs and institutions — also with researchers working on other diseases. It’s a revolutionary approach to innovation that HIV advocates have been calling for for years.

### **4. Conducting trials in parallel produces rapid results**

Covid-19 research applied cutting-edge trial designs that tested multiple vaccine candidates and approaches simultaneously, conducted critical trials in parallel rather than sequentially, and moved quickly to expand trials of promising vaccines to tens of thousands of participants, which produced rapid results.

### **5. Advance purchase agreements lead to early manufacturing**

Advance government and [Covax commitments](#) to purchase Covid-19 vaccines, and the reservation of capacity to manufacture them before trial results were in, incentivised some vaccine developers and smoothed the transition from research to production. This collaborative, publicly-funded approach led many groups and organisations, including both of ours ([Health Justice Initiative](#) and [Avac](#)), to describe the outcome of those incentives – the multiple safe and effective Covid-19 vaccines – as a “people’s vaccine”.

A global sense of urgency was also essential to producing Covid-19 vaccines in record time. That can be harder to create and maintain for diseases that have been around for decades, such as HIV, or for centuries, like TB. Each of these, however, along with malaria, sleeping sickness, leishmaniasis, Chagas disease, river blindness, mycetoma and others, are not only public health crises but also major barriers to achieving the [UN Sustainable Development Goals](#), and must be framed as top global vaccine development priorities.

The Covid-19 response proved that sufficient funding, an emphasis on collaboration and a willingness to use cutting-edge research approaches can shorten vaccine research timelines by years. However, the results of those innovations are not translating quickly or equitably enough to ending this pandemic, or building pandemic preparedness for the future.

Today, the world's wealthiest countries, with 14% of the global population, hold half of the global Covid-19 vaccine supply. [Nearly half of US residents](#) have received at least one dose of Covid-19 vaccine, as opposed to less than [1% of South Africans](#).

This startling level of inequity speaks for itself, and greatly diminishes both faith in vaccines and the world's commitment to equity. Scientific R&D is meaningless without equally robust investment in and commitment to the final "d": delivery.

HIV vaccine research is gaining important momentum, with several large clinical studies underway and important new discoveries in fields such as [antibodies](#) and [germline targeting technology](#). This HIV Vaccine Awareness Day (18 May), the challenge before us is to combine that scientific momentum with vaccine development and access approaches that build on Covid-19's successes *and* learn from its mistakes. Doing so could jump-start a new global era in vaccine research and health equity.

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