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The change in African vaccine manufacturing landscape

Photo: Daniel Pakaluku, WHO

New analysis from Africa CDC, CHAI, and PATH could inform future pathways

Africa has long relied on other parts of the world for its vaccine supply. This unfair global health system creates barriers to access and exposes the continent to threats like the COVID-19 pandemic, as well as more recent zoonotic disease outbreaks like Mpox and Marburg. African leaders have voiced this struggle for years, but the delay Africa faced in receiving COVID-19 vaccines thrust the issue onto the global stage. It prompted African leaders to create the Partnership for African Vaccine Manufacturing with the aim of pushing for the local manufacture of 60 percent of Africa's vaccine needs by 2040. It also spurred global efforts to build a sustainable vaccine manufacturing ecosystem on the continent.

But fulfilling this ambition will be challenging, requiring a multi-year, coordinated effort across various stakeholders and sectors. With many new projects on the horizon, there's a risk of duplicative investments in some areas and under-investment in others. In the long term, this could jeopardize impact and undermine manufacturers' market viability.

To address this issue, in 2023 the Africa Centres for Disease Control and Prevention (Africa CDC), the Clinton Health Access Initiative (CHAI), and PATH mapped the state of vaccine manufacturing in Africa. Together, we gained insights into what's needed to develop a robust and sustainable vaccine manufacturing ecosystem. In 2024, we refined our original research. We surveyed African vaccine manufacturers to understand their current capacity and capabilities. We also wanted to know the progress they made over the last year, and their plans for the future. This information can help stakeholders and funders better coordinate and prioritize the actions needed to build a thriving African vaccine manufacturing sector.

What have we learned? And how should we move forward?

A deeper dive

Last year's research showed us what vaccine manufacturing projects were active in Africa. It also yielded many important takeaways that hold true today. Africa continues to face an imbalance between insufficient drug substance production (the antigen that forms the active component of vaccines) and excess capacity for drug product manufacturing (the final vaccine), alongside highly uncertain demand for African-made vaccines at the country level. In the 2024 research, we aimed to refine our previous estimates. We wanted to make our findings more impactful.

Significantly, we also sought to clarify questions about the demand for African-made vaccines. We wanted to understand whether countries are considering or prepared to buy African-made vaccines and what support could improve country commitments to them. If the demand isn't there—or isn't known—manufacturers will struggle to find success.

The 'new' current state of African vaccine manufacturing

As of June 2024, our manufacturer surveys found 25 active vaccine projects across the continent. They are at three stages of project and facility maturity: Five manufacturers

have commercial-scale manufacturing facilities with technology transfers signed or underway. Another five manufacturers have commercial-scale manufacturing facilities but have yet to sign technology transfers while 15 manufacturers are in earlier stages of development. Africa's drug product manufacturing capacity dropped by 40 percent from 2023 estimates to 1.4 billion doses annually. While this may sound negative, it is actually positive. Africa had surplus capacity, and the decrease allows for more focus on vital health products such as insulin and cancer treatments.

Besides, three manufacturers have advanced their drug substance manufacturing projects since 2023. This is an important step forward given the continent's lack of capacity to produce drug substances. These changes in drug substance and drug product capacity indicate a gradual shift toward balance, offering an encouraging sign for the long-term outlook.

Finally, a number of technology transfer discussions are underway; 10 transfers have begun and three more have been signed and are awaiting initiation—another sign of progress.

Putting the research in context

Africa's vaccine manufacturing ecosystem is moving toward sustainability—but still has a long way to go. Despite the progress made in the last year, the capacity to produce drug products on the continent still far exceeds the anticipated demand for African-made products in an already crowded marketplace. Currently, installed capacity is estimated at 1.4 billion doses by 2030, which could surge to 2 billion doses annually in emergency situations. If more projects come online, that capacity will only grow—a scenario threatening market health and manufacturers' commercial viability. At the same time, drug substance production remains limited at 61 million doses annually. And much of the installed drug substance capacity is for mRNA vaccines—which currently have limited commercial market opportunities. Even when drug substance expansion plans are considered, there won't be enough capacity to meet Africa's vaccine production goals and ensure pandemic preparedness.

Plans indicate that between 2025 and 2030, three African vaccine manufacturers are expected to produce and secure World Health Organization prequalification for nine different vaccines. Yet the current market demand for these vaccines remains uncertain.

In short, Africa has the ambition and much of the means to reach its vaccine production goals, but still lacks both demand certainty and a solid business case to sustain that ambition.

How can stakeholders and investors best support the development of sustainable vaccine manufacturing in Africa?

Understanding the market for African-made vaccines

We must strategically invest in African vaccine manufacturing. For instance, investors can prioritize drug substance production over drug product manufacturing. This approach can contribute to addressing the current imbalance in Africa's vaccine manufacturing landscape, promoting market stability and enhancing pandemic preparedness. Supporting technology transfers and investing in research and development to strengthen drug substance production capacity would also provide significant strategic value.

However, for the manufacturing ecosystem to be genuinely sustainable, demand is the other key element. Countries should consider where a vaccine is manufactured when making procurement decisions. By directing their decision-making toward African-made vaccines, countries can bolster demand, creating a ripple effect that helps resolve the challenges facing African vaccine manufacturers.

The way forward

Yet progress is being made on the demand front. In May 2024, during a meeting hosted by Africa CDC on the sidelines of the 76th World Health Assembly, African health ministers committed to purchasing vaccines manufactured in Africa. Their commitments signified an effort to strengthen the manufacturing ecosystem and ensure sustainable vaccine access across the continent. Africa CDC, in partnership with Gavi and CHAI, is actively working with key African country governments to turn these commitments into reality.

Building a sustainable, continental vaccine manufacturing ecosystem is challenging, and progress is not always consistent. However, through continued, collaborative effort—like this partnership —we will move the needle forward. Together, we can enhance vaccine access for the more than a billion people in Africa.

Read more: https://africacdc.org/download/african-vaccine-manufacturing-mapping-supply-and-demand-landscape/

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