

Re: Vaccines Africa Brief for Congressional Research Services (CRS)

Last Updated: April 13, 2022

Brief: This report is a product of the VacSafe Working Group, a group of leading scientists, vaccine and public health experts, and policymakers. Its purpose is to provide an informed overview on the state of SARS-CoV-2 vaccines in Africa (54 countries and 2 disputed territories) with a view to inform US legislators. This briefing comes as global COVID-19 cases and deaths continue to decrease, but the trend in global daily global vaccinations also declines. Africa continues to face vaccine shortages and distribution challenges. Information included in this briefing is drawn from private and public sources. For broader context, refer to earlier installments of the Vaccines in Africa Brief.

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VacSafe Working Group
Monthly Brief: Congressional Research Services

Africa (54 countries 2 disputed territories)

1. SARS-CoV-2 Vaccination Status in Africa

The Our World in Data vaccine tracker reported that as of April 10, 2022, a total of 465.21 million vaccine doses have been administered across the entire African continent. 15.37% of the population has received more than one dose, with 5.14% given at least one dose. This brings to a total of a total of 20.51% share of people vaccinated against COVID-19.

According to Our World in Data vaccine tracker as of April 3, 2022, the three best countries by share of people vaccinated are Seychelles (85%), Mauritius (79%) and Morocco (67%). The three lowest are Burundi (0.084%), DR Congo (0.92%) and Chad (1.7%).

Currently, the Omicron subvariant BA.2 has become the dominant form of SARS-CoV-2. It is very closely related to the original BA.1 variant. Dr. Fauci said that the “BA.2 [subvariant] is 50% to 60% more transmissible than omicron, but it does not appear to be more severe. It does have increased transmission capability. The BA.2 subvariant has been the cause of recent cases in China, Europe, and the US.

A new assessment of virus seroprevalence suggests nearly three-quarter of Africans have already been infected with SARS-CoV-2 prior to the onset on the Omicron wave. The analysis, a systematic review of some 151 studies, was published on medRxiv.org. Addressing a press briefing on Thursday, Dr Moeti said the study demonstrates that there had been some 800M infections as of September 2021 – nearly 100 times greater than the 8.2M cases reported at the time. The data does not even consider the Omicron wave of infections that hit countries in southern Africa in early December and continued into early 2022.

It is now worth reconsidering the target of vaccinating 70% of the population, when that threshold has already been exceeded with infection induced immunity, holds up as well (and perhaps even better) than vaccines (for example mRNA vaccines) in preventing mild and severe COVID-19. The most efficient use of the current generation of vaccines, which do not fully and sustainably protect against infection and mild disease, is to target getting the over 50 year old population vaccinated at least 90%. This age-bound target will be less than 20% of the population, but yield more benefit than vaccinating a random 70% of the population.

2. Vaccine Efficacy, Safety, and Approval (as of April 5, 2022)

- Moderna - WHO Emergency Use Listing and approved in Botswana, Egypt, Ghana, Kenya, Libya, Malawi, Nigeria, Rwanda and Seychelles.
- Oxford-AstraZeneca (Covishield) - Africa Regulatory Taskforce approved, WHO Emergency Use Listing and approved in 45 African countries.
- Serum Institute of India (licensed to produce and sell the Oxford-Astra-Zeneca Covishield vaccine) - Africa Regulatory Taskforce (ART) approved, WHO Emergency Use Listing and approved in 14 African countries.
- Pfizer-BioNTech - WHO Emergency Use Listing, FDA approval and approved in 17 African Countries.
- Sinopharm (Covilo or BBIBP-CorV) - WHO Emergency Use Listing and Africa Regulatory Taskforce (ART) approved in 29 African countries.
- Sinovac (CoronaVac) - WHO Emergency Use Listing and Africa Regulatory Taskforce (ART) approved in 14 African Countries.
- Bharat Biotech (Covaxin) - WHO Emergency Use Listing and approved in Botswana, Mauritius, and Zimbabwe. However, the WHO suspended the supply of Covaxin through UN procurement agencies as of April 2, in response to deficiencies in the company's good manufacturing practice (GMP). Bharat Biotech has agreed to suspend the production of Covaxin in the meantime.

- Gamaleya Institute (Sputnik V) - approved in 19 African countries.
- Gamaleya Institute (Sputnik Light) – approved in Angola, Egypt, Mauritius, Nigeria, Republic of Congo, Tunisia, and Tanzania.
- Janssen/Johnson & Johnson (Ad26.COV2.S) - WHO Emergency Use Listing, Africa Regulatory Taskforce approved and approved in 33 African countries.

3. Continental Vaccine Acquisition

Dr. John Nkengasong asked for a focus on better delivery so that vaccines do not go to waste. He stated that the African continent has a robust plan to tackle the pandemic, but only about 15% of the population is fully vaccinated. Thus, there the future with the pandemic for Africa remains uncertain. He asked that vaccination campaigns be coordinated with COVAX and AVAT.

In addition, during an interview, Dr. Nkengasong stated that Africa will need to focus on being self-sufficient for future crises, including for COVID-19. He stated that “never ever should we have had to keep counting on externalities to take care of our own security needs. A key pathway for collective global security is an Africa that is self-sufficient.”

The Biden Administration and the Africa CDC renewed their partnership by signing an updated Memorandum of Cooperation. As of February 2022, the US shared 116 million COVID-19 vaccine doses with 48 countries in Africa and plans to send more.

Learning from Burundi’s political pivot on COVID-19 vaccines: As countries around the world do their part to reduce the spread and severity of COVID-19 through vaccinations, there remains outliers that have yet to embark on national vaccination campaigns. Burundi was one of these very few countries, until its political leadership made a major pivot to embrace global public health measures and include a vaccination pillar in its national COVID-19 response plan in September 2021. In a matter of weeks following their change of tack, hundreds of thousands of doses began flowing to the country, including a donation of Sinopharm by the Government of China and a delivery of Johnson and Johnson doses by the United Nations Children Fund (UNICEF) through the African Vaccine Acquisition Trust (AVAT) using World Bank grant financing.

COVAX has raised only \$192 million (with additional €350 million pledge from Germany) of its \$3.8 billion goal set in January. Immunization rates in LIC hovers at about 15% having

received one dose (similar to the average across the African continent), while UMIC and HIC have achieved about 80%.

COVAX and the AU declined options to purchase more Moderna doses per reports. This is a sign both that demand for vaccines is waning and that LIC are struggling with distribution capacity.

4. Vaccine Distribution

Johnson & Johnson announced that an agreement was reached for their COVID-19 vaccine to be manufactured in Africa. Aspen SA Operations based in South Africa will be manufacturing (fill and finish) these vaccines, hoping to goals of increasing vaccination rates in Africa.

Botswana is the first country in Africa to approve Texas-made COVID-19 vaccine Corbevax. A construction of the plant to produce COVID-19 vaccines and drugs to fight cancer was announced by Botswana's President Mokgweetsi Masisi and California based biotech company Nantworks.

Ghana plans to start producing their own COVID-19 vaccine in January 2024, as Ghana's Presidnet Nana Akufo-Addo stated in his State of the Nation Address in parliament. The National Vaccine Institute of Ghana will lay out the first phase of commercial production of vaccines.

Rural health worker shortage threatens Africa's COVID vaccine rollout: The root of the geographic inequalities is the chronic underfunding of Africa's healthcare systems. While the US spends \$10,000 per capita on health, the corresponding figure in Africa is just \$70. Africa has fewer healthcare workers per population than anywhere else in the world. There are, on average, three physicians per 10,000 population, compared to ten times that number in OECD countries.

In Africa, a Mix of Shots Drives an Uncertain Covid Vaccination Push: Supplies are more plentiful now but they are unpredictable and often a jumble of brands. Many places cannot meet the W.H.O.'s recommended dosing schedules.

5. Vaccine Fill & Manufacturing

99% of vaccinations and about 60% to 70% of drugs used on the African continent are imported, with related consequences laid bare by the pandemic. As Nkengasong prepares to depart, he emphasized this week that Africa now had to focus on becoming “self-sufficient” to handle future crises: “Never ever should we have had to keep counting on externalities to take care of our own security needs. A key pathway for collective global security is an Africa that is self-sufficient.”

Relatedly, the African Development Bank now plans to invest \$3B over the next decade to help scale up vaccine and pharmaceutical manufacturing in African nations, with a focus on regional hubs working to achieve economies of scale.

New agreement makes “Africa’s own COVID-19 vaccine” a reality: Under a new agreement with J&J, Aspen SA Operations will be able to manufacture and make available Aspen-branded COVID-19 vaccines in Africa.

6. Vaccine Licensing/Intellectual Property

Civil society groups are asking Biden to turn down a proposed WTO deal on COVID-19 IPR, saying it falls far short of the actual rights waiver Biden backed previously to expedite vaccine production in developing countries. 42 European civil society also published an open letter addressed to European Commissioners, European members of Parliament, and WTO Ambassadors calling the compromise “problematic” and “largely insufficient”.

Botswana has become the first country in Africa to approve the use of Texas-made Corbevax. Botswana’s president and California biotech company NantWorks made the announcement Monday as they began construction of a plant to produce COVID Vx and cancer drugs.

Ghana is intent on starting producing its own COVID-19 Vx in January 2024, President Nana Akufo-Addo said on Wednesday in his State of the Nation Address in parliament. A National Vaccine Institute would be established to lay out a strategy for the country to begin the first phase of commercial production. No further details were offered.

7. Emerging Variants

Multiple variants of the virus that causes COVID-19 are circulating globally. In collaboration with a SARS-CoV-2 Interagency Group (SIG), US CDC established three classifications for the SARS-CoV-2 variants being monitored: Variant of Interest (VOI), Variant of Concern (VOC), and Variant of High Consequence (VOHC).

The US Centers for Disease and Prevention (CDC) Global Variants Report is tracking the worldwide distribution of five variants; as of March 29th, 2022, all five variants are reported to be circulating in Africa:

- Alpha (B.1.1.7): (VOC) initially detected in the UK, December 2020
 - Verified in all African countries except: not reported in Eritrea, and unverified in Botswana and Niger.
- Beta (B.1.351): (VOC) initially detected in South Africa, December 2020
 - Verified in all African countries except: not reported in Algeria, Egypt, Eritrea, and Niger.
- Delta (B.1.617.2): (VOC) initially detected in India, December 2020
 - Verified in all African countries except: not reported in Eritrea, and Madagascar.
- Gamma (P.1): (VOC) initially identified in travelers from Brazil, January, 2021
 - Verified in Sudan, Kenya, United Republic of Tanzania, South Africa, Namibia, Angola, Gabon, Congo, Equatorial Guinea, Cameroon, Benin, Togo, Ghana, Cote d'Ivoire and unverified in Madagascar.
- Omicron (B.1.1.529), initially identified in South Africa, was designated a VOC on November 26, 2021.
 - As of March 8th, 2022, it is still unverified in Mali and Chad, and not reported in: Madagascar, Lesotho, Somalia, Eritrea, Burundi, Libya, Equatorial Guinea, Guinea-Bissau, Liberia
 - As of March 22nd, 2022 the WHO announced that the Omichron BA.2 subvariant had become the dominant form of SARS-CoV-2 virus circulating worldwide

There are currently no circulating Variants of Interests.

Some previously circulated VOIs are:

- Epsilon (B.1.427, B.1.429). Earliest documented Sample in USA, March 2020.
- Kappa (B.1.617.1). Earliest documented Sample in India, October 2020.
- Lambda (C.37). initially detected in Peru, August 2020:
 - Verified in South Africa
- Mu (B.1.621), initially detected in Colombia, August 2021

- Currently the MU variant is not verified to be circulating in Africa

The category, Variant of High Consequence, is reserved for variants that have clear evidence that prevention measures or medical countermeasures have significantly reduced effectiveness relative to previously circulating variants.

- Currently, there are no SARS-CoV-2 variants that rise to the level of high consequence.

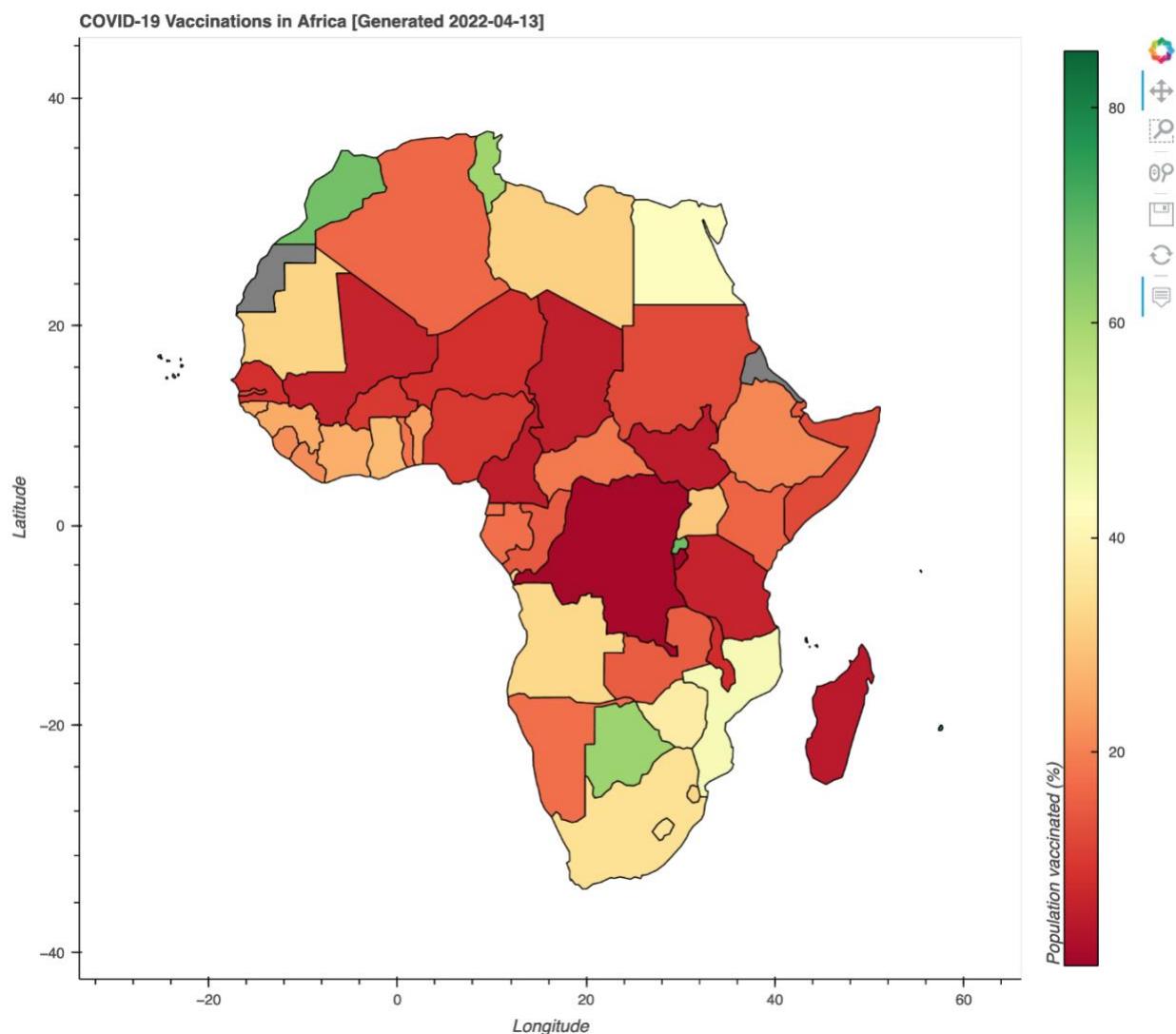
Appendix

Figures and Supplemental Information

VacSafe Working Group Website

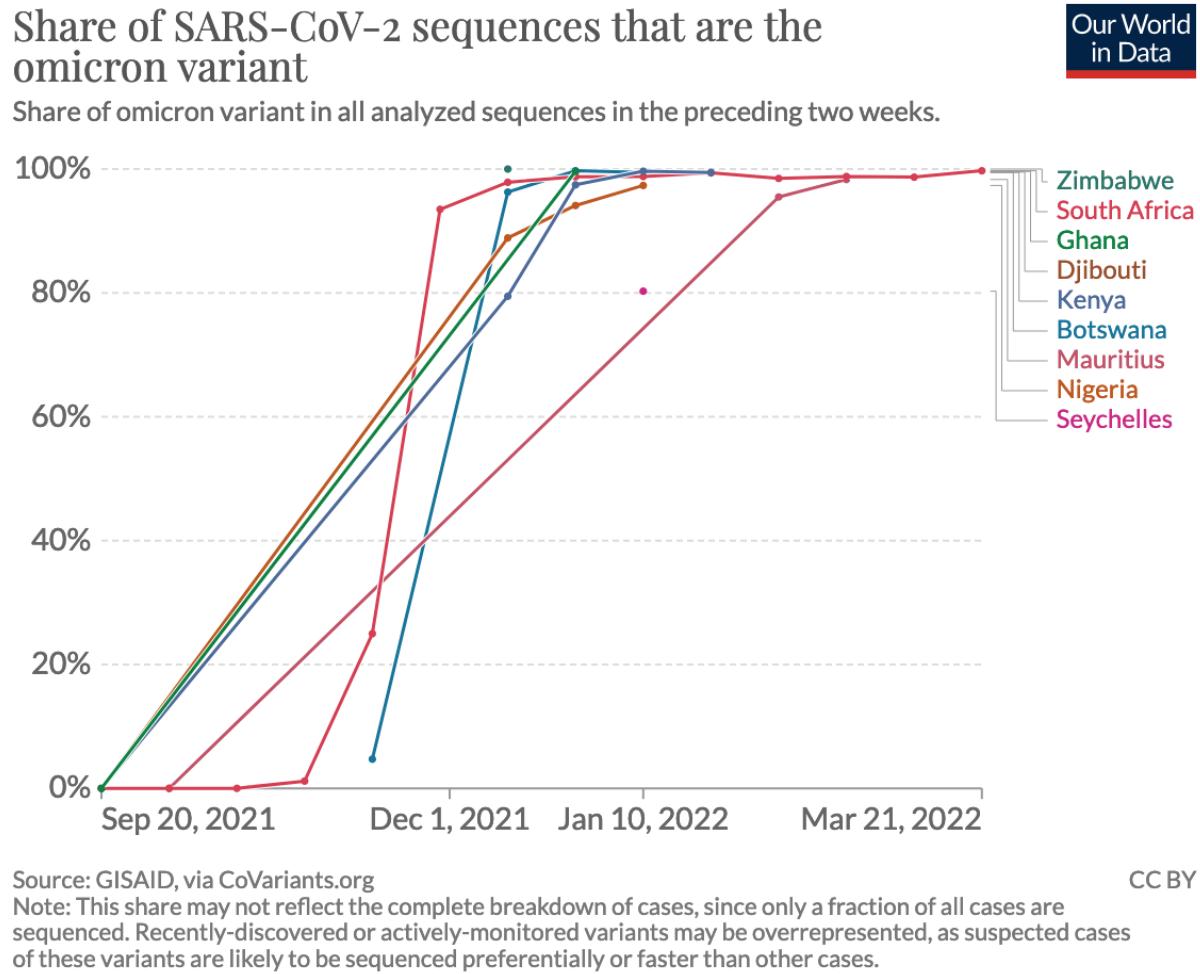
The VacSafe Working Group website houses publicly facing versions of these briefings, an interactive map that tracks COVID-19 vaccination rates and their correlates in Africa, and up-to-date information on the working group's convenings and projects. The website can be found at <http://www.vacsafe.columbia.edu/>

Figure 1: VacSafe Africa Map



The interactive map is hosted here: <https://vacsafe.columbia.edu/content/vacsafe-africa-map>.

Figure 2: Omicron (B.1.1.529) variant by share of total cases in select African countries



Source: <https://ourworldindata.org/covid-cases>

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