

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

Last Updated: February 4 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 the Omicron variant surge appears to be receding in many countries, but as cases still remain high particularly through northern Africa. 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
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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 February 4, 2022, a total of 357.57 million vaccine doses have been administered across the entire African continent, constituting 3.5% of the total of 10.15 billion doses administered globally. Furthermore, only 10.92% of the population in Africa has been vaccinated, with 16.12% given at least one dose.

According to Our World in Data vaccine tracker as of January 28, 2022, the three African countries with the highest rates of people vaccinated are Seychelles (84%), Maldives (73%) and Morocco (66%). The three lowest are Burundi (0.053%), DR Congo (0.4%) and Chad (1.5%).

2. Vaccine Efficacy, Safety, and Approval

- Moderna (Spikevax) - WHO Emergency Use Listing and approved in Botswana, Congo, Egypt, Ghana, Kenya, Libya, Malawi, Nigeria, Rwanda and Seychelles.
- Oxford-AstraZeneca (Vaxzevria) - Africa Regulatory Taskforce approved, WHO Emergency Use Listing and approved in 40 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 (Comirnaty) - WHO Emergency Use Listing, FDA approval and approved in 21 African Countries.
- Sinopharm (Covilo or BBIBP-CorV) - WHO Emergency Use Listing and approved in 35 African countries.
- Sinovac (CoronaVac) - WHO Emergency Use Listing and approved in Algeria, Benin, Botswana, Djibouti, Egypt, Libya, Malawi, South Africa, Tanzania, Togo, Tunisia, Uganda, and Zimbabwe.
- Bharat Biotech (Covaxin) - approved in Botswana, Mauritius, and Zimbabwe.
- Gamaleya Institute (Sputnik V) - approved in 19 African countries.
- Gamaleya Institute (Sputnik Light) – approved in Angola, Egypt, Mauritius, 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

Pfizer-BioNTech and Moderna have begun testing for vaccine 3rd and 4th doses that are able to combat the Omicron variant infections. These mRNA vaccines are easier to tweak through a simple revision of the Sars-CoV-2 spike sequence.

Dr. Nkengasong has said that Johnson and Johnson vaccines that were purchased through AVAT's Task Team have expired, which is due to the fact that many vaccine donations to African states contain

near-expired vaccines. Countries have been refusing vaccines that only have a shelf life of one or two months.

Kenya and South Africa will soon start producing generic versions of Merck's pill, Molnupiravir. It has been known to be able to cut hospitalization rates in half for patients with signs of COVID-19. The EU, UK, and US have authorized its use in recent months. The deal was negotiated by UN backed Medicines Patent Pool.

Africa only received around six percent of all COVID vaccines and administered roughly 60 percent of it, despite having 17 percent of the world's population.

The US announced they will send roughly 1.6 million doses of Pfizer Covid-19 vaccines to Uganda.

4. Vaccine Distribution

The World Health Organization had an aim for all countries to reach a goal of getting 40% of the population vaccinated by the end of 2021, while getting 70% of the population vaccinated by June 2022. However, only seven African countries: Seychelles, Mauritius, Morocco, Tunisia, Cabo Verde, Botswana, and Rwanda, were able to reach this goal. The target of getting 70% of the population will be missed by almost all African countries.

African countries that performed best with vaccinating their populations finalized vaccine deployment plans before the vaccines arrived. Dr. Nkengasong stated that African countries need to increase investment in health, which will not only help with COVID-19 control, but also in other diseases.

The slow vaccination rates have detrimental economic effects as most recent estimates for sub-Saharan Africa show: They will most likely lose three percent of their GDP from 2022 to 2025.

The latest developments in the Western Covid-19 vaccine production sector imply that the big issue will no longer be the supply of vaccines, but rather its unequal distribution and deployment once in country. With a steady global vaccine production of 1.5 billion doses per month and an outlook of over 1.2 billion vaccine doses for donation by the G7 alone, African officials request Western countries to transfer their large stockpile of unused vaccines to COVAX and COVAX to work together with AVATT and national governments for a fair and efficient allocation and distribution.

Nigerian health authorities had destroyed over one million expired Covid-19 doses last month in an effort to boost public confidence, in a presumed demonstration of not inflicting expired medicines on their publics.

Tech insurer Parsyl partners announced on January 24th that they will distribute 10,000 vaccine monitoring devices in partnership with the CDC. This should further help Africa's vaccine distribution effort. The platform and its various monitoring devices help enable frontline workers and vaccinators to monitor and track the different usage requirements of Ultra Cold Chain (UCC) Covid-19 vaccines.

5. Vaccine Fill & Manufacturing

Although challenges in infrastructure, regulation, and expertise are hard on the development of the African pharmaceutical sector, it is expected to grow from 19 billion US-Dollar in 2012 to 66 billion US-Dollar by 2022. One of the fastest growing in the world.

Growing efforts for making African countries more independent from COVAX and increasing vaccine fill and manufacturing, that is currently at roughly one percent, make it ever more clear of how crucial a strong regulatory system and a well-functioning health ecosystem are for success.

South Africa and Nigeria have facilities for vaccine manufacturing, research innovation, and development. South Africa has achieved tremendous milestones in its Covid-19 response, including mobilizing financing for local vaccine manufacturing through the newly established Pfizer-COVAX partnership. Rwanda, which was notably the first country to sign the treaty in June 2019, has entered into an agreement with the International Finance Corporation (IFC) to develop vaccine manufacturing capacity in the country.

The African Medicines Agency (AMA) that launched in September 2021 is the second continental health agency (after Africa CDC) and has the mandate to enhance regulatory oversight across the continent and enabling quality, safe, and efficacious medicines. It is partnering with other key Africa programs (African Continental Free Trade Area, Partnerships for African Vaccine Manufacturing, and African Medicines Regulatory Harmonization/ African Vaccine Regulatory Forum) to further strengthen continental research and development capacity, harmonize drug registration regulations, and help African countries comply with best practices and international standards. This is believed to help spur local pharmaceutical production by establishing a supportive structure in which all member states can work together to respond to current and future emergency health crises such as Covid-19. As at 1 December

2021, a total of 18 member states have ratified the AMA and submitted instruments of ratification to the African Union Commission (AUC).

Even though the African Union has already started to become more independent with AVAT in 2020, it needs to increase its supply times seven if it wants to make sure that by September 2022 at last 70 percent of its eligible population is vaccinated.

6. Vaccination Licensing Issues/IP/tech transfer

Afrigen Biologics and Vaccines, says it has created a copy of Moderna's mRNA COVID-19 without Moderna's involvement, in under 2 months. Advocates were quick to point how this fly into the face of the narrative on complexity of mRNA vaccine manufacturing and the lack of corresponding expertise in the developing world. Many steps remain before Afrigen's mRNA vaccine could be ready for distribution but the WHO hopes that the process of creating it will lay the foundation for a more globally distributed mRNA vaccine industry in the future. Once the researchers confirm the copy is reliable, they will work with other global south companies on scaling up production. Then, the vaccine will be tested in rodents.

PhRMA has told the USTR that the WHO and other agencies, including the WTO, were no longer reliable stewards of intellectual property rights. The industry lobbying group accused the WHO of promoting "harmful policies" that it says would hurt incentives for drug and vaccine makers. The message comes as the US Trade Representative is preparing its 301 Watch List, which the industry uses to identify countries that do not sufficiently protect IPR.

After officials at the World Trade Organization missed a December deadline on a potential IP waiver, discussions on the topic are ramping back up. Last week, WTO Okonjo-Iweala called on members to reach a consensus on an IP waiver by the end of February.

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 January 25, 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.
- 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, Libya, Madagascar, Sudan and unverified in Cote d'Ivoire.
- 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 not reported in Madagascar, Ethiopia.
- Omicron (B.1.1.529), initially identified in South Africa, was designated a VOC on November 26, 2021.
 - As of January 27, 2022, it is still unverified in Mali, Cote d'Ivoire, Gabon, Congo, United Republic of Tanzania and not reported in Guinea-Bissau, Liberia, Benin, Libya, Chad, Sudan, Central African Republic, Cameroon, Equatorial Guinea, Eritrea, Ethiopia, Somalia, Burundi, Madagascar and Lesotho.

The World Health Organization has currently designated two Variants of Interest (VOI).

- 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.

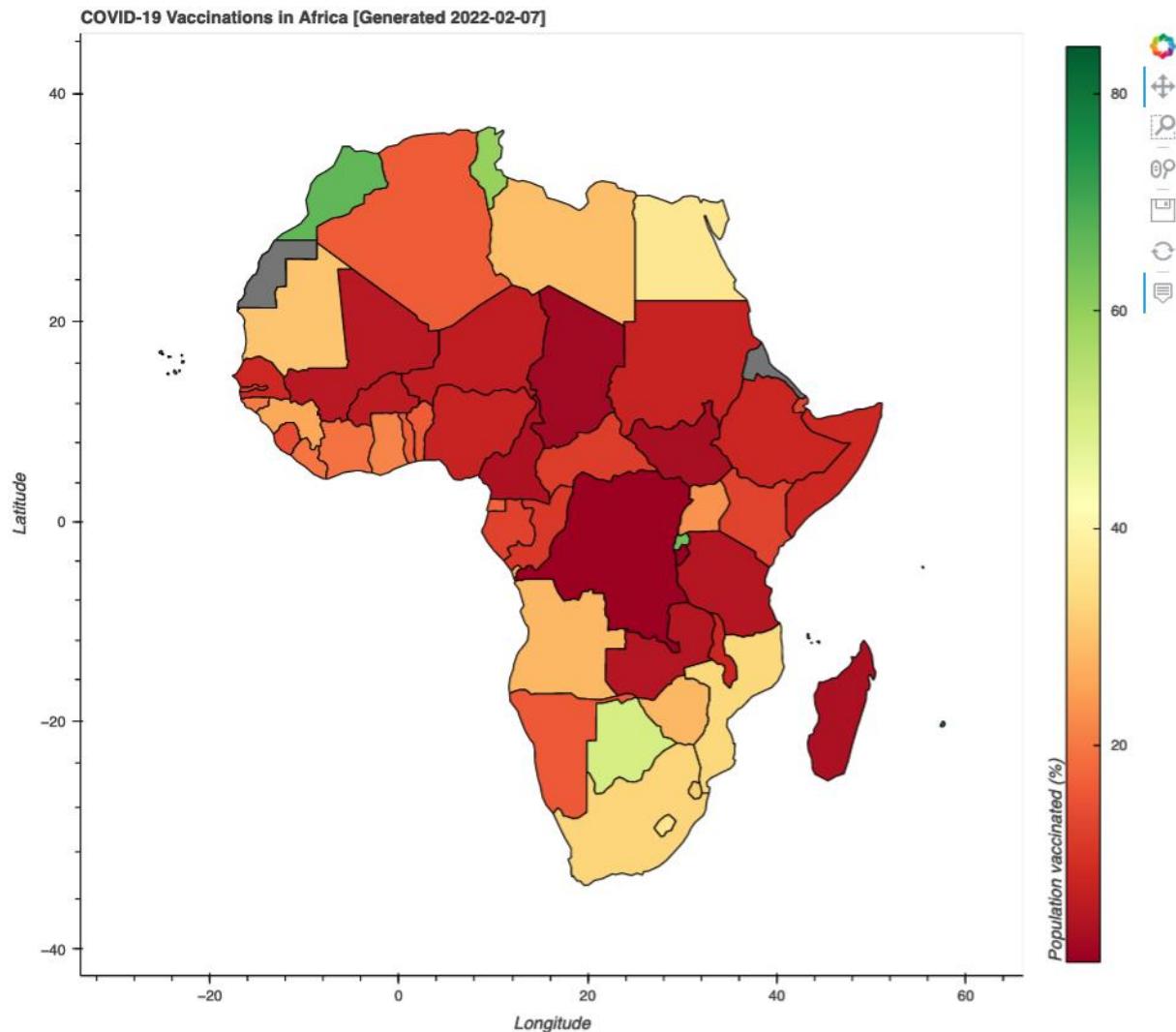
Appendix

Figures and Supplemental Information

VacSafe Working Group Website

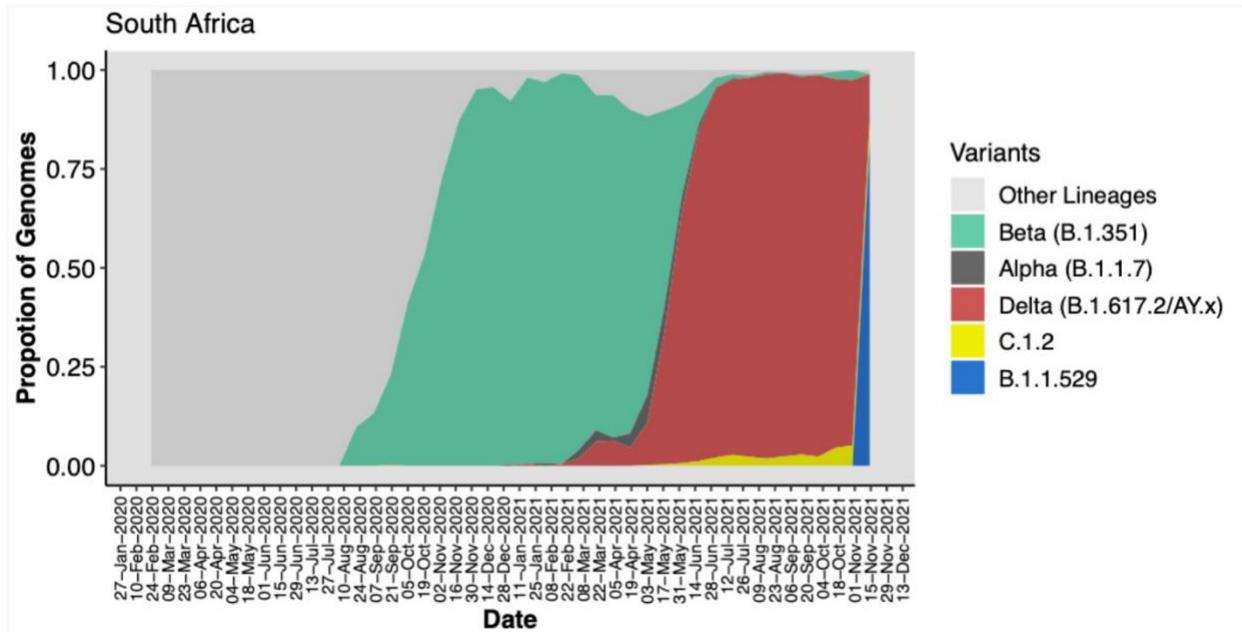
The VacSafe Working Group website houses publicly facing versions of these briefings, an interactive map that tracks COVID-19 vaccination rates and their correlates in Africa, and up-to-date information on the working group's convenings and projects. The website can be found at <http://www.vacsafe.columbia.edu/>

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 Evolution in South Africa



Source: https://www.krisp.org.za/manuscripts/25Nov2021_B.1.1.529_Media.pdf

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