

# Practical considerations for COVID-19 vaccination in Africa



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# A conversation between:



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# Agenda

**What are the benefits and risks of COVID-19 vaccination?**

**What prevents people from getting vaccinated?**

**How can healthcare workers help to improve COVID-19 vaccine uptake?**

# What are the benefits and risks of COVID-19 vaccination?

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# COVID-19 vaccines have been studied in African populations

## Efficacy data are available from across Africa

<b>Nigeria and Ghana</b>	RWE (N=667)	AZD1222	Demonstrated immunogenicity <sup>1</sup>
<b>South Africa</b>	Phase IIIb (N=477,102)	Ad26.COVS.2.S	Reduced deaths and hospitalization <sup>2</sup>
<b>South Africa</b>	RWE (N=211,610 PCR tests)	BNT162b2	Reduced hospitalization <sup>3</sup>
<b>South Africa</b>	RWE (N=162,637 PCR tests)	Ad26.COVS.2.S/ BNT162b2	Effective against severe disease <sup>4</sup>
<b>Republic of the Congo</b>	RWE (N=169)	BBIBP-CorV/ Ad26.COVS.2.S	Confirmed antibody response <sup>5</sup>
<b>Zambia</b>	RWE (N=1,653)	Any vaccination	Reduced in-hospital mortality <sup>6</sup>

## A real-world study examined safety data of COVID-19 vaccines in Africa



Similar rates of AE reporting between males and females<sup>7</sup>



Most commonly reported AEs fall within 'general disorders' and 'administration site disorders' SOC (35% of reported AEs)<sup>7</sup>



Headache (11%), pyrexia (9%) and injection-site pain (8%) are the most commonly reported AEs<sup>7</sup>

AE, adverse event; PCR, polymerase chain reaction; RWE, real-world evidence; SOC, system organ class.

1. Abdullahi A, et al. *Nat Commun.* 2022;13:6131; 2. Bekker L-G, et al. *Lancet.* 2022;399:1141-53; 3. Collie S, et al. *N Engl J Med.* 2022;386:494-6;

4. Gray G, et al. *N Engl J Med.* 2022;386:2243-5; 5. Batchi-Bouyou AL, et al. *BMC Infect Dis.* 2022;22:610; 6. Chanda D, et al. *Open Forum Infect Dis.*

2022;9:ofac469; 7. Ogar CK, et al. *Drug Saf.* 2023;doi:10.1007/s40264-023-01279-3.

# Efficacy is comparable across vaccine types

Most commonly used vaccines in Africa <sup>1,2</sup> (Data updated 02 February 2023)	Proportion used <sup>1</sup>	Efficacy against BA.5/omicron	
		Infection	Severe disease
<b>Ad26.COVS.2.S</b> (J&J)	36%	33%	57%
<b>BNT162b2</b> (Pfizer-BioNTech)	21%	44%	72%
<b>AZD1222/ChAdOx1</b> (AstraZeneca)	16%	36%	71%
<b>BBIBP-CorV</b> (Sinopharm)	14%	35%	53%

1. Africa CDC. COVID-19 vaccination. Available at: <https://africacdc.org/covid-19-vaccination/> (accessed 22 February 2023); 2. Loembé MM, Nkengasong JN. *Immunity*. 2021;54:1353–62; 3. Healthdata. COVID-19 Vaccine efficacy summary. Available at: <https://www.healthdata.org/covid/covid-19-vaccine-efficacy-summary> (accessed 28 February 2023).

# COVID-19 vaccination is vital in vulnerable populations

## People living with HIV

- Higher risk of severe symptoms and mortality following COVID-19 infection<sup>1</sup>
- Similar neutralizing response to people without HIV following vaccination<sup>2</sup>
- No increased risk of severe side effects following vaccination<sup>3</sup>

## Pregnant women

- Increased risk of severe COVID-19, still birth, pre-eclampsia, caesarean delivery, preterm birth, after COVID-19 infection<sup>4,5</sup>
- Vaccination does not increase risk of adverse outcomes or AEs<sup>4,6</sup>
- Maternal vaccination offers newborn protection<sup>7</sup>



## Immunocompromised patients

- Infections are the most common cause of mortality<sup>8</sup>
- Vaccine efficacy generally lower<sup>9,10</sup>
- May require further protection<sup>9</sup>

## Elderly

- COVID-19 mortality increases with age<sup>11</sup>
- May present differently: e.g. neurological symptoms; fever less frequent vs younger people<sup>11</sup>
- Waning immune responses following vaccination<sup>12</sup>

AE, adverse event; HIV, human immunodeficiency virus.

1. Wang Y, et al. *Front Immunol.* 2022;13:864838; 2. Khan K, et al. *Clin Infect Dis.* 2022;75:e857–64; 3. Yang Y, Iwasaki A. *Curr HIV/AIDS Rep.* 2022;19:5–16; 4. Kontovazainitis G-C, et al. *J Perinat Med.* 2023;doi: 10.1515/jpm-2022-0463; 5. Pathiranthna ML, et al. *Healthcare (Basel).* 2022;10:203; 6. DeSilva M, et al. *N Engl J Med.* 2022;387:187–9; 7. Halasa NB, et al. *N Engl J Med.* 2022;387:109–19; 8. Sonani B, et al. *Clin Rheumatol.* 2021;40:797–8; 9. Di Fusco M, et al. *Expert Rev Vaccines.* 2022;21:435–51; 10. Marra AR, et al. *J Infect.* 2022;84:297–310; 11. Prendki V, et al. *Clin Microbiol Infect.* 2022;28:785–91; 12. Newman J, et al. *Nat Microbiol.* 2022;7:1180–8; 13. Afshar ZM, et al. *Rev Med Virol.* 2022;32:e2309.



# What prevents people from getting vaccinated?

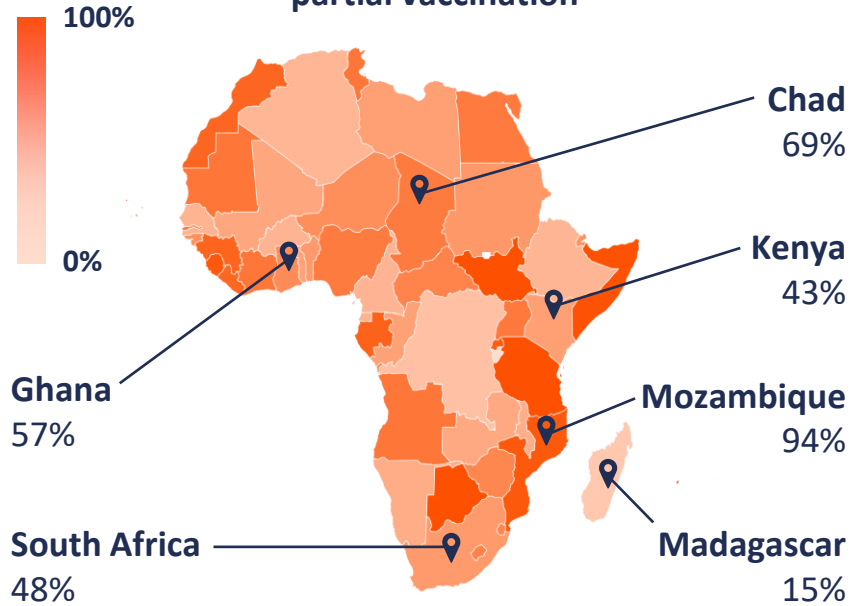
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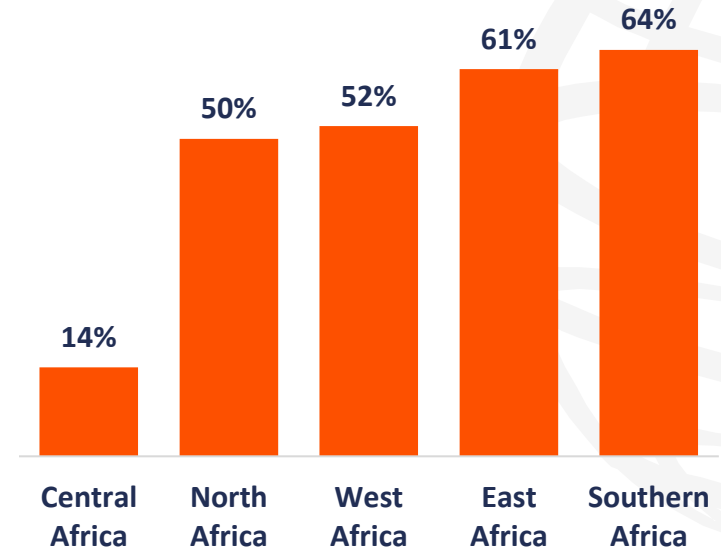
# COVID-19 vaccination uptake varies across African countries

Proportion of eligible population receiving partial vaccination<sup>1</sup>



Data updated 05 February 2023

Vaccine acceptance varies across African regions<sup>2</sup>



Data from 2022

1. Africa CDC. COVID-19 Vaccination. Available at: <https://africacdc.org/covid-19-vaccination/> (accessed 13 March 2023);

2. Njoga EO, et al. *Vaccines (Basel)*. 2022;10:1934.

# Several drivers lead to low vaccine uptake in Africa

## Drivers of vaccine hesitancy

### Vaccine concerns

- Inadequate testing<sup>1</sup>
- Fear of side effects<sup>1</sup>
- Lack of confidence in efficacy<sup>1</sup>
- Distrust/suspicion of vaccines<sup>1</sup>

### Misinformation

- Myths spread on social media<sup>2</sup>
- Data misinterpretation<sup>2</sup>
- Conspiracy theories<sup>1</sup>

## Other drivers leading to low vaccination rates



### Socio-political drivers

- Vaccine hoarding<sup>1</sup>
- Mistrust of political leaders<sup>1</sup>
- Political instability<sup>1</sup>



### Vaccine inequality

- Low supply, high demand<sup>1</sup>
- Vaccines bought up by HICs<sup>1</sup>
- Donations of expired vaccines<sup>3</sup>



### Government policy

- Denial of severity of COVID-19<sup>2</sup>
- Lack of clarity creating doubt over who vaccine is for<sup>2</sup>



### Logistical challenges

- Manufactured overseas<sup>4</sup>
- Complex storage needs<sup>4</sup>
- Available at limited locations<sup>5</sup>

HIC, high-income country.

1. Njoga EO, et al. *Vaccines (Basel)*. 2022;10:1934; 2. Kabakama S, et al. *Trop Med Infect Dis*. 2022;7:130; 3. Lawal L, et al. *Hum Vaccin Immunother*. 2022;18:203445; 4. Kritharis A, et al. *Can J Chem Eng*. 2022;100:1670–5; 5. Sulub S, Mohamed M. *Vaccines (Basel)*. 2022;10:1076.

# How can healthcare workers help to improve COVID-19 vaccine uptake?

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# Ebola outbreak offers insight into challenges for HCW



## During and after the Ebola outbreak, challenges arose during vaccination efforts:



Challenges arose during Ebola virus vaccine trials<sup>3</sup>

Concerns about foreign vaccine<sup>3</sup>  
Security issues faced by Ebola virus response teams<sup>3</sup>



High levels of mistrust surrounding vaccine and surveillance team<sup>4</sup>

Misinformation, e.g. disease origin<sup>4</sup>  
Reports of violence towards HCW<sup>4</sup>



Cost, community attitude and perceived risk of Ebola affected vaccine uptake<sup>4</sup>

Need tailored approach for future campaigns<sup>4</sup>



Poor road networks and need for specialist storage slowed vaccine rollout<sup>5</sup>

Importance of infrastructure for future campaigns<sup>5</sup>

## Distrust and misinformation were major barriers to Ebola vaccination campaigns<sup>4</sup>

HCW, healthcare worker.

1. Wolf J, et al. *NPJ Vaccines*. 2020;5:51; 2. Samarasekera U. *Lancet Microbe*. 2023;4:e139; 3. Henao-Restrepo AM, et al. *Lancet*. 2017;389:505–18; 4. Kpanake L, et al. *Hum Vaccin Immunother*. 2018;14:2391–6; 5. Jusu MO, et al. *J Infect Dis*. 2018;217:S48–S55.

# Strategies to overcome key vaccine rollout challenges

## Lack of awareness/ mistrust of vaccines

- Share education on vaccine production and approval<sup>1</sup>
- Ensure clear communication with community leaders and government<sup>1</sup>
- Engage with public locally to strengthen community confidence<sup>2</sup>
- Address community concerns quickly to build sustainable relationships<sup>2</sup>

## Poor co-ordination between stakeholders

- Engage with stakeholders early with detailed planning<sup>2</sup>
- Ensure co-ordination between health agencies, government agencies and international partners<sup>2</sup>
- Ensure clear, consistent community communication strategy<sup>2</sup>

## Vaccine hesitancy, scepticism or resistance

- Adapt rollout to tackle specific concerns and barriers to access<sup>2</sup>
- Integrate vaccination campaigns to decrease time burden on communities and HCWs<sup>2</sup>
- Recruit local HCW and engage trusted community figures<sup>2,3</sup>

HCW, healthcare worker.

1. Wolf J, et al. *NPJ Vaccines*. 2020;5:51; 2. Collins J, et al. *BMJ Global Health*. 2021;6:e006951; 3. Kpanake L, et al. *Hum Vaccin Immunother*. 2018;14:2391–6.