

RAPID REVIEW:

PERCEPTIONS OF COVID-19 VACCINES IN SOUTH AFRICA

As of April 19, 2021, South Africa has recorded 1.56 million COVID-19 cases and almost 54,000 deaths¹ - more than any other country on the African continent. The country has begun the national rollout of the Johnson & Johnson (J&J) COVID-19 vaccine, with over 292 thousand doses administered² it aims to achieve herd immunity by vaccinating at least 67 percent of its population (around 40 million people) by the end of 2021.³ The government suspended its initial rollout of the AstraZeneca (AZ) vaccine due to concerns over its effectiveness, particularly against the new B.1.351 variant, which accounts for 90% of the infections in South Africa.⁴ The J&J vaccine was put on temporary hold in April due to concerns about rare clotting disorders.⁵ Although data show that expected acceptance of COVID-19 vaccines is relatively high, the suspension of two vaccines in South Africa, where fear of infection is decreasing, will likely influence public reactions.

Understanding how individuals and population groups perceive and make sense of COVID-19 vaccines is critical to inform the design and implementation of risk communication and community engagement (RCCE) strategies, and guide interventions aiming to promote and sustain acceptance of COVID-19 vaccines, while encouraging compliance with other COVID-19 preventive measures.

This review synthesises community perceptions of COVID-19 vaccines in South Africa to inform RCCE strategies and policies and provides examples of successful practice. It draws on multiple secondary data sources: scientific literature, qualitative and quantitative studies, grey literature, and mainstream and social media. The review was supported by consultation with four local expert key informants from different fields. It is part of the Social Science in Humanitarian Action Platform ([SSHAP](#)) series on social science considerations relating to COVID-19 vaccines. It was written for SSHAP by Tamara Roldan de Jong and Anthrologica on request of the UNICEF South Africa Country Office. Contributions were made from the RCCE Collective Service East and Southern Africa (ESAR) Region. The brief is the responsibility of SSHAP.

SUMMARY CONSIDERATIONS

- Vaccine hesitancy in South Africa is often intertwined with distrust in institutions, rooted in a history of inequality. An effective pandemic response to COVID-19 requires **tackling this distrust**. Discussions should address misinformation and rumours, but also encourage dialogue about social and political issues, embedded in inequalities.
- There is a need for more diverse data from a range of communities. Most of the available data is from an adult population, with internet access, living in urban and English-speaking settings. Research into other populations focusing on community feedback mechanisms can help to understand the complex array of individual, sociocultural, and political factors that influence vaccine hesitancy and acceptance.⁶
- Effective response to vaccine hesitancy will require information about vaccines that is **accessible, clear and encourages two-way communication**. This includes information about vaccine safety, effectiveness, and trial processes. Use context-specific language to communicate which specific groups, such as the elderly, prisoners and migrants, will be prioritised for vaccination and explain the rationale for these choices.
- It is important to understand and address the specific concerns of various **socio-demographic groups**. As far as possible this should be supported by on-the-ground research and monitoring of vaccine perceptions to identify each group's concerns, preferred channels and communication needs.
- Understanding and responding people's needs and priorities can increase the **acceptance and relevance of COVID-19 vaccines in those contexts**. Avoid isolated efforts, embed the vaccination strategies into people's priorities, noting they may have other livelihood concerns.
- HCWs are an important target audience for RCCE guidance. They are vital as sources of trusted information and promoting vaccine acceptance in their communities. They need access to information and opportunities to discuss their concerns and questions.
- Tailored strategies may be needed to address the different needs and perceptions about and among migrants and refugees. It is important that any such efforts be explained as necessary to protect overall public health, to avoid the perception that these groups are being singled out for special privileges.
- Enhance community-based responses and community resilience to build trust and a **sense of social justice**. Training and coordination with existing community networks and local structures can provide valuable insights.
- One-dimensional and 'easy-to-implement' public health interventions are unlikely to be effective. Work with social scientists and community experts in the development of material and campaigns to ensure that communities are part of the design and development process, and so the response is localised and embedded in the complex realities of communities.

CONCEPTS OF VACCINE HESITANCY AND CONFIDENCE

The World Health Organization defines vaccine hesitancy as a 'delay in acceptance or refusal of vaccines despite the availability of vaccination services'.⁷ It can be seen as a continuum ranging from complete acceptance to complete refusal of a specific vaccine or of vaccination generally.⁸⁻¹⁰ Vaccine confidence refers to the belief that vaccination, along with the providers, private sector, and political actors behind it, serve the public's best health interests.¹¹ Social science research illustrates that vaccine perceptions are shaped by complex socio-political and historical factors.^{8,12} Vaccine confidence leads in turn to vaccine acceptance - the willingness of individuals and communities to be vaccinated. These concepts are described fully by other recent SSHAP outputs relating to vaccine hesitancy,¹³ as well as considerations relating to and online information and misinformation¹⁴ in the context of COVID-19.

VACCINE ACCEPTANCE AND HESITANCY IN SOUTH AFRICA

Several studies of vaccine perceptions have been undertaken in South Africa since the beginning of the COVID-19 outbreak. This evidence consistently shows relatively high rates of likely COVID-19 vaccine acceptance. An Africa CDC survey conducted in September and October 2020 (n=1,056), found that 76% of South Africans surveyed would take the vaccine if it was publicly available and declared safe and effective¹⁵ – listing amongst the highest rates of the 15 African countries surveyed. A survey on vaccine perceptions conducted in January 2021 by the University of Johannesburg and the Human Sciences Research Council (UJ-HSRC) (n=10,618), indicated that 67% of respondents would take a vaccine, 18% would not take the vaccine, and 15% were unsure about taking a COVID-19 vaccine.¹⁶ Data from two John Hopkins University (JHU) studies, in July and November 2020 (n=4094; 3916), showed likely acceptance at 61% and 60%.¹⁷ Two other surveys, by IPSOS in December/January (n=500+)¹⁸ and by the Partnership for Evidence-Based Response to COVID-19 (PERC) in February 2021 (n=1,639)¹⁹ yielded similar results, with 61% of adults in each survey indicating a likelihood to get vaccinated. The largest (n=4,900,000) and most recent survey in South Africa tracked by Facebook and the University of Maryland in April,²⁰ stated a considerably higher rate of COVID-19 vaccine acceptance of almost 70%. A recent rapid assessment survey specifically targeting HCW was undertaken by the Department of Health RSA and UNICEF in February (n=22,751), also found that 70% would accept the vaccine when it becomes available, while 19% remained unsure.²¹ Those last three surveys, it should be noted, were taken during/after the suspension of the AZ and J&J vaccines.

SOCIO-DEMOGRAPHIC CHARACTERISTICS

There are limited data allowing analysis of vaccine acceptance disaggregated by socio-demographic characteristics, and what exists is inconsistent across studies or difficult to compare due to diverse methodologies. The following highlights the demographic trends in acceptance that can be identified based on available data. Additional research is needed to fully understand the priorities and perceptions of different demographic groups.

Gender. Africa CDC data show that willingness to accept the COVID-19 vaccine is quite consistent across gender (73% of men vs. 78% of women).¹⁵ Other surveys, however, indicate that men are more likely than women to accept the vaccine. The November 2020 JHU KAP surveys found that 65% of men and 56% of women would accept a COVID-19 vaccine.¹⁷ The UJ-HSRC study also showed men marginally more inclined than women to accept the vaccine (69% vs 65%, respectively).¹⁶

Age. Data indicate that young people may be less likely than older people to accept the vaccine. In the UJ-HSRC study, the percentage of those surveyed who would definitely or probably get the vaccine was highest amongst those aged over 55 years (74%) and lower in younger groups; only 64% of those between 18 and 34 were likely to take the vaccine.¹⁶ The Africa CDC data show a smaller differential, with 73% of those between 18 and 34 willing to accept a vaccine compared to 78% of those 35 and older.¹⁵ This trend is consistent with global acceptance rates, where vaccine rejectors skew younger than acceptors.²²

Race. Only the UJ-HSRC study provided a racial breakdown of survey responses; 56% of white adults were willing to accept a COVID-19 vaccine compared to 69% of Black African adults, 68% of Indian adults, and 63% of coloured adults.¹⁶

Income and class status. The scant available data do not indicate a clear and consistent association between personal income and vaccine acceptance. Although the UJ-HSRC indicates that acceptance varies by income bracket, no pattern is discernible. The same is true for self-described class status.¹⁶ PERC data show that higher and lower income participants (62%) are equally likely to get vaccinated.¹⁹

Education. Only the UJ-HSRC data are broken down by education level. Those data suggest that acceptance of a vaccine decreases as education increases, with 72% of those with less than matric-level education (grade 12) reporting they will take the vaccine, compared to 62% of those who have completed matric and 59% of those with tertiary education.¹⁶ This contrasts with the Africa CDC report, which notes higher vaccine acceptance among graduates.¹⁵

Urban/Rural. Africa CDC data suggests higher COVID-19 vaccine acceptance among urban (79%) versus rural (69%) participants. The latter study emphasised that in the more heavily urbanised regions of Northern and Eastern Cape, 95% and 98% respectively say they would accept the vaccine.¹⁵ PERC data found a different pattern, suggesting slightly higher (but not significant) levels of acceptance in rural areas when compared to urban

(63% vs 59%).¹⁹ Additional research to address vaccine perceptions in different geographical areas is necessary to allow tailored, localised communication strategies as well as to inform programming and rollout logistics.

MOTIVATIONS FOR VACCINE ACCEPTANCE IN SOUTH AFRICA

It is important to understand the motivations for COVID-19 vaccine acceptance, because tapping into those can help increase the likelihood of vaccine uptake. In the South African UJ-HSRC research, protecting family members and oneself is a strong motivator for taking the vaccine. For instance, among the likely acceptors, 29% say they would be vaccinated for their own protection and 25% for the protection of others. Qualitative data (primarily from black African participants) seem to confirm this, as in the following statement: *'I would definitely get the vaccine as soon as it is available to protect my family and colleagues. It will also assist in getting more people back to work'*.¹⁶

VACCINE ACCESSIBILITY IN SOUTH AFRICA

Vaccine confidence and acceptance can be influenced by a lack of access to the vaccine or inadequate vaccination services. Access to the COVID-19 vaccine can be a tense subject, especially in low and- middle- income countries (LMICs), which struggle on getting sufficient supply of the vaccine on one hand, and ensuring equitable distribution and access across the country, on the other. Both aspects contribute to attitudes towards the new vaccine and the vaccination campaign.²³ Conversations tracked on social media in South Africa in February also reflected concern about accessibility, including which vaccine would be available and how individuals could register for vaccination.²⁴

VACCINE NATIONALISM

Vaccine nationalism refers to prioritising the interests of a single country when it comes to acquiring and administering vaccines²⁵. The term has come into popular use during the COVID-19 pandemic as wealthy countries have purchased more doses than they need whilst under-resourced countries are left to scramble for sufficient supplies for their citizens. Vaccine nationalism threatens the international community's goal of improving global health outcomes and achieving global economic recovery. It can also have a real effect on a population's acceptance of vaccination.

Vaccine shortages in South Africa, and the overall unequal distribution of supplies among rich and poor countries may be a reminder of the crisis in access to HIV treatment from the late 1990s. Antiretroviral drugs were widely available in the west but they were too expensive for most countries in Africa.²⁶ As word of current vaccine shortages spreads, South Africans are saying, in effect, *"here we go again, the global North holding all the vaccines."*(KII 2) Some people on social media have expressed particular frustration with shortages given that South Africa hosted multiple clinical trials of COVID-19 vaccine.²⁷ *"Those kind of global inequalities are going around in the public."*(KII 2)

EQUITABLE ACCESS

South Africa's history of racial and class divisions, inequality, and colonialism create an atmosphere in which scepticism about equitable vaccine access can flourish. The country remains one of the most unequal in the world, according to the World Bank.²⁸ The healthcare system reflects this. There are accentuated inequalities between urban and rural areas and between private health care and the under-resourced public health system that covers 84% of the population, mainly the poor and black working class.^{29,30}

Citizens have mobilised to pressure the government for timely availability of vaccines at the national scale, both through protests and initiatives such as *the People's Vaccine Campaign*.³¹ Online conversations tracked by media analysis also focused on the availability of COVID-19 vaccines in the region. Major concerns have been around whether governments and the COVID-19 Vaccines Global Access (COVAX) initiative are doing enough to guarantee equitable and widespread access to vaccines through transparent acquisition and distribution mechanisms.³²

Some evidence suggests that affordability of an approved COVID-19 vaccine is also a serious concern among South Africans. A GeoPoll survey conducted in November 2020 found that nearly a third of South Africans surveyed think a vaccine will go to those who can pay.²³ Although, in the UJ-HSRC study, 4% of the sampled vaccine hesitant responses expressed concerns about affordability. The government announced in January 2021 that the vaccine would be administered at no charge to all uninsured South Africans,³³ it is likely that concerns will remain among certain population groups.

PRIORITY GROUPS

Healthcare workers (HCW) at the frontline of the pandemic in South Africa are prioritised to the first phase of the rollout. As influential communicators, ensuring their support is critical for vaccine uptake in the following phases. The rapid assessment survey of HCW (n=22,751), found that 19% were unsure they would take the vaccine and 74% would be willing to recommend the vaccination to their patients.²¹ Note that data were collected prior to the launch of the AZ vaccine, which was subsequently halted, and did not include insights about the change to J&J vaccine.

Phase two of the roll out will be for the elderly, people with comorbidities and essential workers. It will also include people living in confined settings, such as care homes and prisons where close contact increases risk. Phase two groups are more difficult to reach than HCW, and outreach strategies, such as setting up vaccination sites at clinics, social grant delivery points, care homes and churches, will be required. (KII 1) Outreach teams of community health workers can be valuable for this type of intervention. However, it should be recognised that eligibility rules may cause conflict with non-priority groups. For instance, social media users displayed anger about a proposal to include prisoners among the priority groups in the vaccine rollout.³² Communication materials should therefore explain the prioritisation criteria for certain populations.

Vulnerable population groups may face unique challenges to vaccine accessibility. Ensuring the scale up of vaccination for hard-to-reach communities, such as refugees, migrants, and other undocumented residents (collectively referred to here as “migrants”) is critical to halting the pandemic by reducing the number of cases that require hospitalization and reduce the number of deaths and herd immunity.³⁴ While reliable figures on undocumented immigrants to South Africa are hard to access, government figures suggest there are 1.6 million residents who were born outside of the country.³⁵ There is also a high rate of internal migration (e.g. labour migrants).³⁶

There is currently little information available on any vaccination plans for the migrant population. These individuals, who may already be invisible to the authorities, are at risk of being overlooked by vaccination campaigns. Experts have expressed concerns that there will be “*either formal or ‘de facto’ discrimination against undocumented migrants when it comes to vaccine access*”.³⁵ They have also expressed concern that the growing emphasis on militarised responses to COVID-19 in South Africa risks undermining efforts to develop ‘migration-aware and mobility-competent’ response strategies and generating even more hostile environments for these populations. In addition, there is a risk that focus on ensuring migrant access to vaccines will be seen as improperly prioritising them. (KII 3) As a result it is important that statements about specific plans to reach migrants make clear that ensuring their inclusion will benefit the South African public at large.

There are concerns about the demand side of vaccination as well. Research about perceptions of migrant groups is scarce, but experiences from other vaccination campaigns demonstrate that a lack of trust in the institutions is a key barrier. Migrants in South Africa have a history of unpleasant encounters with the healthcare system.³⁷ Fear, stigma and mistrust may make them unlikely to seek formal health care or come forward for vaccination even if it is made available to them. Some may be afraid of repercussions, such as deportation, if they are identified as undocumented. (KII 3)

CONSTRAINTS TO VACCINE CONFIDENCE AND ACCEPTANCE

Although a majority of South Africans surveyed across different studies would accept a COVID-19 vaccine if available, there is still a significant minority who remain hesitant; 35-40% are not fully convinced or have some doubts about taking the vaccine.¹⁶ The reasons for this hesitancy need to be understood and addressed.

Considerable attention has been given to conspiracy theories and other mis- and dis-information as drivers of vaccine hesitancy. However, in the South African studies other factors have been identified as equally or more influential. These include concerns about side effects, complacency regarding the individual risk of getting infected with COVID-19,

distrust in the vaccines in general and in the government, disbelief in the existence of COVID-19, lack of knowledge, and lack of time or money to travel to vaccination sites.^{16,18,19}

SAFETY AND EFFECTIVENESS

In several studies, the main reasons South Africans point out for not willing to take the vaccine are concerns related to its safety and effectiveness. A GeoPoll study found that the percentage of respondents who strongly or somewhat agree that vaccines are safe and effective is 56% and 60%, respectively.²³ Among respondents in an IPSOS poll who would not take the vaccine if available, the most frequently cited reasons for hesitancy are concern about the side effects (39%) and concern that a vaccine is moving too quickly through clinical trials (33%).¹⁸ In the UJ-HSRC survey the most common explanations for vaccine non-acceptance are concerns about side effects, concerns about effectiveness and distrust of the vaccines (25%, 18% and 14% respectively).¹⁶ Other research and media monitoring reveals concern about the use of new DNA/mRNA platforms, the lack of long-term safety records, the effectiveness of the vaccine against the new variants of the virus, and the duration of the actual protection that a vaccine can offer.^(KII 1)²⁴ Community feedback data have demonstrated concerns about the safety of the AZ vaccine, especially after some European countries paused use of the vaccine.^{15,38} Africa CDC data indicate that men are more sceptical about the vaccine's safety (66% of men and 74% of women think the COVID 19-vaccine is safe). For instance, targeting men with vaccine-safety information could be a possible beneficial intervention.¹⁵

Some health workers in South Africa have also questioned the safety and efficacy of the COVID-19 vaccine. For instance, the Indaba nurses' union has advised its 17,000 members to boycott the vaccine because they do not trust its safety.³⁹ Among the HCW study undertaken by the Department of Health and partners, 57.5% of the reasons for concern were also related to safety and effectiveness of the vaccine, while only 2% were related to mis- and dis-information.²¹

The perceived safety of vaccines in general also seems to influence perceptions of the COVID-19 vaccine. Of the people who think vaccines in general are safe, 84% are willing to take the COVID-19 vaccine, whereas half (51%) of those who think vaccines are unsafe would take the COVID-19 vaccine.¹⁵ South Africans do not appear to be concerned about the COVID-19 vaccine specifically; 24% of respondents think that vaccines in general are unsafe, while 26% say the same about the COVID-19 vaccine. This suggests that COVID-19 vaccine outreach as part of a comprehensive multi-pronged response may provide an opportunity to address both the safety of COVID-19 vaccination and the safety of vaccination in general and to emphasise the positive effects and benefits of other immunisation efforts

THE IMPACT OF PERCEPTIONS OF RISK

Individual decisions about whether to get vaccinated will be equally influenced by the perceived risk of the vaccination (e.g., side effects) and perceived threat of the disease. If

people are not aware that they or their community are at a potential risk of COVID-19, they may be less motivated to be vaccinated.⁴⁰ For instance, in the Africa CDC survey, those who do not think that the threat of COVID-19 has been exaggerated report a higher willingness to be vaccinated than those who think the threat is exaggerated (82% vs 70%).¹⁵

Respondents in the PERC study report they are aware of the risk COVID-19 poses to their country (86%), however the risk for themselves was less strongly perceived (49%), and 61% stated that their health would be seriously affected if infected by COVID-19.¹⁹ It should be noted that this survey was conducted in February, just after a second wave, and a hard lockdown, making perceptions of risk and threat of the virus more evident among the South African population. In the JHU survey, lower perceptions of threat are found among women, people aged 30 or younger, and rural populations. Those same groups report lower vaccine acceptance than their counterparts.¹⁷

Risk perception can be influenced by a number of factors. In the UJ-HSRC study, some believed that strict adherence to public health protocols, such as physical distancing or mask wearing, was sufficient protection from the virus. Others believed that their immune system would protect them without need for a vaccine.¹⁶ Comments on social media reflect similar scepticism about whether a vaccine is needed to supplement an individual's immune response: "*A vaccine stimulates my immune system to develop antibodies against covid. My immune system does exactly the same on its own. Why would I need a vaccine?*" (Twitter).⁴¹ Belief in the effectiveness of existing and potential treatments, including traditional healings and herbal remedies, also influences vaccine hesitancy. Social media references to herbal remedies as alternative treatments to "western medicine" surged in early February following the suspension of the AZ vaccination campaign.^{19,42} PERC data also suggest that belief in herbal remedies to fight the virus is high (62%) in South Africa. In the Africa CDC survey, 18% of the respondents express confidence that there will be other effective treatments soon, which was a main reason for vaccine hesitancy.¹⁵

MISINFORMATION, RUMOURS AND CONSPIRACY THEORIES

Even before COVID-19, conspiracy theories about vaccines were widespread across Africa. Long-circulating rumours in Nigeria say vaccines make people infertile or contain surveillance chips. Ebola vaccine trials in Ghana were suspended in 2015 due to allegations that scientists were planning to infect people with the disease.⁴³ Conspiracy theories and other rumours about the genesis and existence of COVID-19 have also circulated since the beginning of the pandemic and are likely to affect acceptance of the vaccine as well. In the East and Southern Africa region, South Africa accounts for the highest number of social media engagements generated by rumours and concerns.²⁴

Rumours and misinformation, or the so called *infodemic*.⁴⁴ has been identified as one of the major threats to vaccine acceptance.⁴⁵ However, some experts have warned about putting excessive focus on conspiracy theories as a main factor driving vaccine hesitancy,

as it can undermine efforts to address other “*legitimate concerns and doubts*”. (KII 1; KII 2) In addition, South African data indicate that conspiracy theories are far less influential than other factors, such as fear of side effects, distrust in government and institutions, etc. For example, in the UJ-HSRC survey, conspiracy theories account for only a small (7%) share of the reasons for vaccine refusal. Among the conspiracies expressed by respondents are those related to links between 5G technology and COVID-19,^{15,16} particularly after a local councillor, Chief Justice Mogoeng, made statements in the media about it.⁴¹ Others said they believe the vaccine came from or is associated with the devil,¹⁶ while others link the vaccine with a conspiracy to kill sections of the population¹⁶ – a charge that has frequently been made about the virus itself. Bill Gates has become a target for anti-vaccination conspiracy theories on social media, where users have also blamed him for the B.1.351 variant and have claimed that he planned the pandemic to “destroy Africa”.^{19,41}

Rumours and misinformation are often rooted in a history of colonialism, oppression and exploitation in South Africa. They can easily escalate, especially within the current context of global vaccine inequality. Past experiences can lead to the development of conspiracy theories. It is thus essential to understand the context in which the South Africa vaccination campaign takes place. This includes influences of other African countries’ legacies which have on occasion have experienced unethical medical practices. For example the controversial meningitis drug trial in Nigeria in the 1990s when eleven children died, and others were paralyzed. In South Africa, many recall HIV vaccine trials in the mid-2000s that wrapped up hastily after authorities discovered that not only was the drug powerless against infection, but that it potentially made those who took it even more vulnerable.⁴⁶ Likewise, the polio boycott in Northern Nigeria in 2003, where political and religious leaders argued that the vaccine could be contaminated with anti-fertility agents, HIV, and cancerous agents.⁴⁷ It is important to include and recognise historical events and mistakes when introducing new vaccines.

TRUST IN THE GOVERNMENT AND INSTITUTIONS

Scepticism that the lives of people in South Africa really matter to foreign vaccine developers and the government are also rooted in the country’s history. Vaccine confidence and trust in the response is informed by trust in government and other entities more generally, and also in the historical and contemporary relationships between citizens and the state. Responses that raise concerns about the ability to trust institutional powers, such as the government, ‘the system’, or the WHO, are also reasons for vaccine hesitancy.

Narratives in traditional and social media about the COVID-19 pandemic reflect high levels of distrust in government and allegations of corruption. Sixty eight percent of respondents were satisfied with the South African government’s response to the pandemic, which was amongst the lowest in the African Union southern region. The degree of satisfaction with the government’s response varies by education level: 43% of

those without a secondary school degree report being “very satisfied”, compared to 29% of those with a university degree.¹⁹ Between August 2020 and January 2021, criticism of the government’s response was often connected to broader accusations of corruption against the president and ruling African National Congress (ANC). An auditor general’s report cited “significant faults” in the management processes related to government’s COVID-19 spendings.⁴⁸ Social media users frequently aired frustration at instances of noncompliance with public health measures (e.g., mask wearing and physical distancing) among elected officials.¹⁹

The UJ-HSRC study also reveals that people’s trust and satisfaction with political leadership can be strongly associated with their views on vaccination. For instance, people who thought the president is doing a good job are more likely to want vaccination (73%), compared to those who thought the president is doing a poor job (36%). Notably, vaccine acceptance decreased to 48% amongst those who said they would not vote.¹⁶

Vaccine hesitancy research has demonstrated failure by the governments to respond to important citizens’ needs related to security, water, sanitation, and food security, which may breed mistrust in other areas, including vaccination.⁴⁹ In these contexts, communities are more likely to perceive any government-provided interventions with suspicion.

In South Africa, comments reflecting distrust in western vaccines and worries about Africans being used to test vaccines were widely shared on social media at the time of the rollout of the J&J vaccine, which started without a formal licence in South Africa.⁵⁰ Suspicion about the vaccine was reflected in community feedback and social listening data, such as: “*The vaccine will be used to control people using a registry*”.⁴¹ Reports of planned mandatory vaccinations (e.g. HCWs and children) may amplify mistrust in the government and institutions and generated angry responses on social media.⁵¹ Although the government has denied such plans, fears and rumours remain.⁵²

LACK OF KNOWLEDGE

Many of the above concerns are grounded in a lack of knowledge and information about the vaccine, the trials and the vaccine rollout programme. Data released by PERC showed that of the 39% of respondents who said they would refuse to take the vaccine, one in four stated the main reason was not having enough information to make a decision.¹⁹ Among the HCW survey conducted in February by the Department of Health and partners,²¹ individual concerns were highlighted by the respondents, for instance how to manage pre-existing conditions, effects on breastfeeding and pregnancy and also where and how to get personal health advice. Targeted information and accessible knowledge points ensuring two way communication for HCW is essential to support efforts of explain to people how vaccines work and how they are trialled.

ADDRESSING VACCINE HESITANCY AND INCREASING UPTAKE IN SOUTH AFRICA

As noted, a majority of South Africans surveyed across the different studies would get a COVID-19 vaccine if it was available. However, 35-40% are not fully convinced or have some doubts.¹⁶ This should be the target population for communication and engagement efforts– what experts have called ‘the movable middle,’ who can be swayed from hesitancy to acceptance. (KII 1) Reasonable concerns may be addressed by positive messaging that builds on local terminologies and understandings of health, immunity and social health and engages with people’s values, beliefs, and trust. For instance, the Zulu term *ubuntu* means ‘I am because you are’. So, ‘vaccine *ubuntu*’ frames the message in local terms as ‘I am safe because you are safe and you are safe because I am safe’. Shifting the narrative is an important element when designing more comprehensive interventions, this can help to ground the interventions in local communities’ social and cultural practices and realities. It thus may not only inform, but also shape new sociocultural norms and social practices.⁵³

TRUSTED INFORMATION SOURCES AND INFLUENCERS

People's perceptions of vaccines and vaccination programmes can be influenced and shaped by trusted local actors.¹³ In South Africa, civil organisations are popular, and for many people they are a trusted source of information and advice. This was confirmed by Africa CDC data.¹⁵ Religious leaders, traditional healers and local health providers also have an important role to play, for example publicly vaccinating ministers, imams, rabbis and incorporating the discussions about vaccines into services and ceremonies may encourage acceptance and credulity in national vaccination efforts.⁵⁴ Churches – the most influential organisations in the country – also have a useful role, especially in reaching rural areas.⁵⁵ The Zion Christian Church for example, with estimated 9 million members in the country, could be an important partner to promote vaccine acceptance.⁵⁶ Collaboration with these parties could have benefits in terms of trust towards the vaccine and in reaching some populations that are often excluded. Social media campaigns sharing accurate information and building literacy can also play an important role, especially reaching younger populations. Schools and universities may have the ability to play an important role in reaching adolescent and young adult populations, who are amongst the most hesitant groups.

The JHU KAP survey indicates that the most trusted sources of information noted by South Africans are scientists, doctors, and health experts (74%), followed by the WHO (65%) and local health workers, clinics and community organisations (59%). TV, newspapers, and radio are in the middle rankings around 53%; similarly, ordinary people known personally are similarly trusted as online sources and messaging apps, SMS, and texts messaging (27%, 28%, 29% respectively). Politicians were trusted by the fewest participants (15%).¹⁷ Targeted communication strategies can and should be developed

and shared in collaboration with trusted organisations and individuals. More research is necessary to identify groups, and target and reach those individuals properly.

APPROACHES TO ADDRESS HESITANCY

It is essential that RCCE strategies and vaccination delivery strategies be tailored to individual groups. For example, methods to reach migrants for vaccination need to recognise that they may not have a fixed place of residence and may have specific concerns about engaging with the health system. Lessons on how to engage and reach these communities can be taken from previous experiences with the HIV vaccination campaign, where marginalised groups were the priority target population. Safe spaces with social and environmental conditions conducive to trust were established, so that these populations could feel comfortable.

PARTICIPATORY APPROACHES IN THE WESTERN CAPE

Approaches should also be developed with the guidance of affected groups. For example, following an initial survey suggesting high levels of vaccine hesitancy, emergency medical services (EMS) colleagues in a Western Cape Vaccination Centre used participatory methods to develop a series of initiatives to address this. Initially, a series of focus groups were held with staff (including medics, paramedics, security members, ambulance drivers, cleaners, etc.) to identify themes related to vaccine acceptance. A rapid analysis of these data was then triangulated with qualitative evidence which was used to design a series of interventions. Recognising that addressing concerns was not just about providing the facts, but required a deeper engagement with these concerns, and that it's not just 'what you say' but 'how you say it' and 'who says it' a group of trusted staff members would need to be equipped with the necessary skills and knowledge. Social networks shape vaccination perceptions⁵⁷ and thus staff from multiple parts of the department were selected to be part of the interventions. Finally, the qualitative work led to wider acceptance amongst the rollout team that the technical parts of the rollout were important, but needed a strong focus on equity of access and should be accompanied by a trust building limb. (KII 4)

The set of interventions were as follows: First, a group of staff from different parts of the department were received training to equip them to be trusted sources of vaccine knowledge. Next, a call centre was set up to call all staff members to discuss their concerns and provide answers to questions (where possible, this was done in a language of their choice and calls were done in English, Afrikaans and Xhosa). Next, a series of videos⁵⁸⁻⁶⁰ were created and widely shared among the participants and between their networks. These were not educational videos, but instead were focused on building trust in the process, and sharing experience of staff receiving the vaccine to reduce fear. EMS staffed who received their vaccines first were also encouraged to share on social media to build wider vaccine acceptance. Lastly, an operational team that continued to use the call centre was selected. This team worked solidly on the roll-out logistics ensuring high-

risk staff were prioritised (giving equal preference to urban and rural based staff), supporting colleagues with technical problems (largely with the online registration required) and arranging transport to vaccination sites to reduce vaccine access issues. By early April 2021, 75% of EMS staff had received their vaccines and the major became the availability of vaccines. (KII 4) This localised initiative can serve as an example for how to engage with HCW and emergency personnel using a bottom-up initiative. HCW are an important group to target, as they are promoters of vaccine acceptance and are trusted information sources in their communities. Building Community Resilience

CIVIL SOCIETY AND COMMUNITY-LED APPROACHES

Attempts to address vaccine hesitancy should consider community resilience, recognising that communities may have acquired knowledge and developed response strategies during prior experiences with infectious disease outbreaks. Local capacities can be adapted and used during a crisis to cope, mitigate harm, and recover, while simultaneously building community. Such an approach encourages working together with affected groups to mitigate the impact of the pandemic; in this case it can be applied to promote vaccine acceptance and information.⁶¹⁻⁶³ When evaluating initiatives such as a COVID-19 vaccination programme, it is important to assess existing community-led measures and develop interventions in collaboration with the community that endorse and complement those existing measures and support co-production of knowledge.

Civil organisations in South Africa gained experience in health interventions during the HIV outbreaks. For instance, platforms to discuss health policy change emerged, such as the Treatment Action Campaign (TAC), which aimed to advocate for improved HIV/AIDS health service delivery.⁶⁴ More recently, over 170 Community Action Networks (CANs), similar to TACs, have emerged in the context of the pandemic. The underlying premise of CANs is that many of the challenges arising from COVID-19 – both epidemiological and social – are best addressed at the neighbourhood level. Neighbours connect, usually through a WhatsApp group, and assess the immediate needs of their specific community; they also identify those who are more vulnerable and those who can volunteer to help.⁶⁵ Those self-organising networks, without a hierarchy, are currently generating local- and community-level social data and intelligence to respond to the pandemic. The CANs are one example of an opportunity for government to work with and strengthen networks in order to provide vaccine information and support throughout rollout to the communities at the given moment. However, it is important for the government to recognise the informal nature of community networks to be able to work together. (KII 4)

Government collaboration with community groups can also promote a sense of solidarity and unity across the population. This, in turn, can rebuild trust and tap into one of the main reasons given for vaccine acceptance – to protect others. In moving towards a more coherent and trust-based interface between such initiatives and the formal health system, it is imperative that engagement be bi-directional and sustained over time,

rather than one-off meetings and check-box style public participation, supporting long term engagement of action and research. (KII 4) The state must also recognise the work of informal networks and be willing to resource and support this work without making it dependent on formalisation and bureaucratisation.⁶⁶

SUMMARY TABLE OF MAIN SOURCES

Organisation	Study method	Population (n)	Timeframe of data collection
Africa CDC	Face to face survey	1,056	September – October 2020
Collective service ESAR	Community feedback	-	November – February 2021
Department of Health RSA & UNICEF	HCW - Online survey	22,751	February 2021
Facebook and University of Maryland	Online survey	4,900,000	April 2021
GeoPoll	Telephone surveys	500	November 2020
IPSOS global report	Online survey	500+	January 2021
Johns Hopkins University (JHU)	KAP- online survey (2 times)	Jul 4,094; Nov 3,916	July & November 2020
PERC	Telephone survey	1,639	February 2021
UJ-HSRC	Online survey	10,618	January 2021
UNICEF ESARO C4D	Digital and social media monitoring on immunization	-	November – February 2020

LINKS TO FURTHER RESOURCES

- Videos by the emergency medical services (EMS) colleagues in a Western Cape Vaccination Centre to address vaccine hesitancy :
 - [From ICU to the Vaccination Room](#) with Sindi Dayile:
 - [Still deciding if you want to take the vaccine?](#) Check out this video on the EMS vaccine rollout here!:
 - [Message from EMS Director on EMS rollout](#)
- Community Action Networks: ['Cape Town Together: Organising in a city of islands'](#).
- C-19 People's coalition, [Towards a people's vaccine campaign](#): A call for action.
- WHO. [Data for action: achieving high uptake of COVID-19 vaccines](#). Interim guidance.
- SSHAP. [Community Resilience](#): Key Concepts and their Applications to Epidemic Shocks Brighton: Social Science in Humanitarian Action.
- [Collective Service](#) for Risk Communication and Community Engagement.

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REFERENCES

1. WHO. (2021). *South Africa: WHO Coronavirus Disease (COVID-19) Dashboard*. WHO Coronavirus (COVID-19) Dashboard. <https://covid19.who.int>
2. Pettersson, H., Manley, B., Hernandez, S., & McPhillips, D. (2021, April 19). *Covid-19 vaccine tracker: View vaccinations by country*. CNN. <https://www.cnn.com/interactive/2021/health/global-covid-vaccinations/>
3. Ueckermann, V. (2021, March 2). *COVID-19: Key questions about South Africa's vaccine rollout plan*. The Conversation. <http://theconversation.com/covid-19-key-questions-about-south-africas-vaccine-rollout-plan-155972>
4. Reuters. (2020, December 25). *Explainer: The new coronavirus variant in South Africa - Are concerns justified?* Reuters. <https://www.reuters.com/article/us-health-coronavirus-safrica-variant-ex-idUSKBN28Z0DR>
5. Ellis, E. (2021, April 13). *COVID-19: South Africa suspends use of J&J vaccine, 'hopefully for only a few days'*. Daily Maverick. <https://www.dailymaverick.co.za/article/2021-04-13-south-africa-suspends-use-of-jj-vaccine-hopefully-for-only-a-few-days/>
6. Larson, H. J., Jarrett, C., Eckersberger, E., Smith, D. M. D., & Paterson, P. (2014). Understanding vaccine hesitancy around vaccines and vaccination from a global perspective: A systematic review of published literature, 2007-2012. *Vaccine*, 32(19), 2150–2159. <https://doi.org/10.1016/j.vaccine.2014.01.081>
7. Burki, T. (2019). Vaccine misinformation and social media. *The Lancet Digital Health*, 1(6), e258–e259. [https://doi.org/10.1016/S2589-7500\(19\)30136-0](https://doi.org/10.1016/S2589-7500(19)30136-0)
8. Larson, H. J., Cooper, L. Z., Eskola, J., Katz, S. L., & Ratzan, S. (2011). Addressing the vaccine confidence gap. *The Lancet*, 378(9790), 526–535. [https://doi.org/10.1016/S0140-6736\(11\)60678-8](https://doi.org/10.1016/S0140-6736(11)60678-8)
9. Dubé, E., Gagnon, D., Nickels, E., Jeram, S., & Schuster, M. (2014). Mapping vaccine hesitancy—Country-specific characteristics of a global phenomenon. *Vaccine*, 32(49), 6649–6654. <https://doi.org/10.1016/j.vaccine.2014.09.039>
10. Dubé, E., Vivion, M., & MacDonald, N. E. (2015). Vaccine hesitancy, vaccine refusal and the anti-vaccine movement: Influence, impact and implications. *Expert Review of Vaccines*, 14(1), 99–117. <https://doi.org/10.1586/14760584.2015.964212>
11. *The Vaccine Confidence Project*. (n.d.). The Vaccine Confidence Project. Retrieved 29 March 2021, from <https://www.vaccineconfidence.org/vcp-mission>
12. Larson, H. J., Schulz, W. S., Tucker, J. D., & Smith, D. M. D. (2015). Measuring Vaccine Confidence: Introducing a Global Vaccine Confidence Index. *PLOS Currents Outbreaks*. <https://doi.org/10.1371/currents.outbreaks.ce0f6177bc97332602a8e3fe7d7f7cc4>
13. Hrynick, T., Ripoll, S., & Schmidt-Sane, M. (2020). *Rapid Review: Vaccine Hesitancy and Building Confidence in COVID-19 Vaccination*. SSHAP. <https://www.socialscienceinaction.org/resources/rapid-review-vaccine-hesitancy-and-building-confidence-in-covid-19-vaccination/>
14. Anthrologica. (2020). *Online Information, Mis- and Disinformation in the Context of COVID-19*. Social Science in Humanitarian Action Platform. <https://www.socialscienceinaction.org/resources/key-considerations-online-information-mis-disinformation-context-covid-19/>
15. Africa Centers for Disease Control and Prevention. (2021). *COVID 19 Vaccine Perceptions: A 15 country study*. Africa CDC.
16. Runciman, C., Roberts, B., Alexander, K., Bohler-Muller, N., & Bekker, M. (2021). *UJ-HSRC COVID-19 DEMOCRACY SURVEY: Willingness to take a Covid-19 vaccine: A research briefing*. University of Johannesburg and Human Sciences Research Council.
17. Babalola, S., Krenn, S., Rimal, R., Serlemitsos, E., Shaivitz, M., Shattuck, D., & Storey, D. (2020). *KAP COVID Dashboard* [Global Outbreak Alert and Response Network, Facebook Data for Good.]. <https://ccp.jhu.edu/kap-covid/kap-covid-global-view-2/>
18. IPSOS. (2021, February 9). *Global attitudes: COVID-19 vaccines*. Ipsos. <https://www.ipsos.com/en/global-attitudes-covid-19-vaccine-january-2021>
19. Partnership for Evidence-Based Response to COVID-19 (PERC). (2021). *Finding the Balance: Public Health and Social Measures in South Africa* (No. 3). PERC.

20. DirectRelieve. (2021). *International Vaccine Acceptance Dashboard*. <https://directrelief.maps.arcgis.com/apps/opsdashboard/index.html#/6962c454dbc74aa2bb7fb76bd739e418>
21. UNICEF & Department of Health RSA. (2021, February). *Health worker COVID-19 Vaccine Perceptions Survey—South Africa Risk Communication and Community Engagement*.
22. Lazarus, J. V., Ratzan, S. C., Palayew, A., Gostin, L. O., Larson, H. J., Rabin, K., Kimball, S., & El-Mohandes, A. (2021). A global survey of potential acceptance of a COVID-19 vaccine. *Nature Medicine*, 27(2), 225–228. <https://doi.org/10.1038/s41591-020-1124-9>
23. GeoPoll. (2020). *GeoPoll's 2020 Year End Report: Ongoing Impact of COVID-19 in 6 African Countries—GeoPoll*. <https://www.geopoll.com/blog/covid-africa-year-end-2020/>
24. UNICEF ESARO. (2021). *Social Media report ESAR- February*.
25. Lock, H. (2021, February 11). *Vaccine Nationalism: Everything You Need to Know*. Global Citizen. <https://www.globalcitizen.org/en/content/what-is-vaccine-nationalism/>
26. Hassan, F. (2021, February). Don't Let Drug Companies Create a System of Vaccine Apartheid. *Foreign Policy*. <https://foreignpolicy.com/2021/02/23/don't-let-drug-companies-create-a-system-of-vaccine-apartheid/>
27. Makoni, M. (2020). COVID-19 vaccine trials in Africa. *The Lancet Respiratory Medicine*, 8(11), e79–e80. [https://doi.org/10.1016/S2213-2600\(20\)30401-X](https://doi.org/10.1016/S2213-2600(20)30401-X)
28. World Bank. (2019). *Poverty & Equity Data Portal*. <https://povertydata.worldbank.org/Poverty/Home>
29. Bangalee, V., & Suleman, F. (2020). Access considerations for a COVID-19 vaccine for South Africa. *South African Family Practice: Official Journal of the South African Academy of Family Practice/Primary Care*, 62(1), e1–e4. <https://doi.org/10.4102/safp.v62i1.5152>
30. Rispel, L. (2018, June 28). *South Africa's universal health care plan falls short of fixing an ailing system*. The Conversation. <http://theconversation.com/south-africas-universal-health-care-plan-falls-short-of-fixing-an-ailing-system-99028>
31. C19 People's Coalition. (2021, January 12). Towards a People's Vaccine Campaign – A Call To Action. *C19 People's Coalition*. <https://c19peoplescoalition.org.za/towards-a-peoples-vaccine-campaign-a-call-to-action/>
32. UNICEF ESARO C4D. (2020). *Digital and Social Media Monitor on Immunization in Eastern and Southern Africa*. (No. 2).
33. Singh, O. (2021, January 27). Covid-19 vaccines 'a public good' and will be available for free. *TimesLIVE*. <https://www.timeslive.co.za/news/south-africa/2021-01-27-covid-19-vaccines-a-public-good-and-will-be-available-for-free/>
34. Vearey, J. (2021, January). *Refugees and migrants are vulnerable to 'vaccine nationalism' as host nations put their own citizens first – maHp*. <https://www.maHPsa.org/refugees-and-migrants-are-vulnerable-to-vaccine-nationalism-as-host-nations-put-their-own-citizens-first/>
35. Moloney, A., & Bhalla, N. (2021, January 21). Refile Analysis: 'Invisible' migrants risk being last in line for COVID-19 vaccination. *Thomson Reuters Foundation*. <https://www.reuters.com/article/health-coronavirus-migrants-idINL8N2JU63D>
36. Yu, D. (2021, February). *South African internal migrants fare better in the job market in two regions*. The Conversation. <http://theconversation.com/south-african-internal-migrants-fare-better-in-the-job-market-in-two-regions-152786>
37. Egwu, P. (2021, February 4). *Coronavirus: Migrants in SA fear being excluded from the Covid-19 vaccination campaign*. Daily Maverick. <https://www.dailymaverick.co.za/article/2021-02-05-migrants-in-sa-fear-being-excluded-from-the-covid-19-vaccination-campaign/>
38. COVID-19 Community Feedback Sub-Working Group for East and Southern Africa. (2021, January). *Community feedback priorities*.
39. Cocks, T. (2021, February 10). As vaccines arrive, South Africa faces widespread scepticism over safety. *Reuters*. <https://www.reuters.com/article/us-health-coronavirus-safrica-anti-vacci-idUSKBN2A81WJ>
40. WHO. (2020). *Behavioural considerations for acceptance and uptake of COVID-19 vaccines*. <https://www.who.int/publications-detail-redirect/9789240016927>
41. UNICEF ESARO C4D. (2021). *Digital and Social Media Monitor on Immunization in Eastern and Southern Africa*. (No. 3). UNICEF ESARO.

42. UNICEF ESARO C4D. (2021). *Digital and Social Media Monitor on Immunization in Eastern and Southern Africa*. (No. 4). UNICEF ESARO.
43. Kummervold, P. E., Schulz, W. S., Smout, E., Fernandez-Luque, L., & Larson, H. J. (2017). Controversial Ebola vaccine trials in Ghana: A thematic analysis of critiques and rebuttals in digital news. *BMC Public Health*, 17(1), 642. <https://doi.org/10.1186/s12889-017-4618-8>
44. WHO. (2020). *Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation*. <https://www.who.int/news/item/23-09-2020-managing-the-covid-19-infodemic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation>
45. WHO. (2020). *Immunizing the public against misinformation*. <https://www.who.int/news-room/feature-stories/detail/immunizing-the-public-against-misinformation>
46. Lawal, S., & Brown, L. (2021, March 4). Behind vaccine doubts in Africa, a deeper legacy of distrust. *Christian Science Monitor*. <https://www.csmonitor.com/World/Africa/2021/0304/Behind-vaccine-doubts-in-Africa-a-deeper-legacy-of-distrust>
47. Jegede, A. S. (2007). What Led to the Nigerian Boycott of the Polio Vaccination Campaign? *PLoS Medicine*, 4(3). <https://doi.org/10.1371/journal.pmed.0040073>
48. BusinessTech. (2020, December). *Auditor-General uncovers major problems with South Africa's Covid-19 spending*. <https://businesstech.co.za/news/government/455772/auditor-general-uncovers-major-problems-with-south-africas-covid-19-spending/>
49. Dzinamarira, T., Nachipo, B., Phiri, B., & Musuka, G. (2021). COVID-19 Vaccine Roll-Out in South Africa and Zimbabwe: Urgent Need to Address Community Preparedness, Fears and Hesitancy. *Vaccines*, 9(3), 250. <https://doi.org/10.3390/vaccines9030250>
50. Wa Afrika, M. (2021, February 28). 'Don't use South Africans as vaccine guinea pigs'. <https://www.iol.co.za/sundayindependent/news/dont-use-south-africans-as-vaccine-guinea-pigs-6bc4358e-49c2-4435-96a9-62142effc965>
51. Africa Infodemic Response Alliance (AIRA). (2021). *COVID-19 Infodemic Trends in the African Region*. https://docs.google.com/document/d/1Jgb-tiL-dWT49hY17Fe9IKmAHVP1gb9gxywkFFQntBM/edit?usp=embed_facebook
52. Felix, J. (2021, January). *Covid-19 vaccine: No one in SA will be forced to take the jab, says Mkhize*. News24. <https://www.news24.com/news24/southafrica/news/covid-19-vaccines-no-one-in-sa-will-be-forced-to-take-the-jab-says-mkhize-20210107>
53. Westhuizen, H.-M. van der, Kotze, K., Tonkin-Crine, S., Gobat, N., & Greenhalgh, T. (2020). Face coverings for covid-19: From medical intervention to social practice. *BMJ*, 370, m3021. <https://doi.org/10.1136/bmj.m3021>
54. Tomlinson, M., & Kagee, A. (2021, February 10). *South Africa needs a massive awareness campaign to overcome Covid vaccine hesitancy*. Daily Maverick. <https://www.dailymaverick.co.za/article/2021-02-10-south-africa-needs-a-massive-awareness-campaign-to-overcome-covid-vaccine-hesitancy/>
55. Erasmus, J. C. (2005). Religion and social transformation: A case study from South Africa. *Transformation: An International Journal of Holistic Mission Studies*, 22(3), 139-148. <https://doi.org/10.1177/026537880502200303>
56. African Rainbow Capital. (2020, February 2). Zion Christian Church (ZCC) and TymeBank announce unique banking partnership. *African Rainbow Capital*. <https://africanrainbowcapital.co.za/zion-christian-church-zcc-and-tymbank-announce-unique-banking-partnership/>
57. Cooper, S., Schmidt, B.-M., Sambala, E. Z., Swartz, A., Colvin, C. J., Leon, N., Betsch, C., & Wiysonge, C. S. (2019). Factors that influence parents' and informal caregivers' acceptance of routine childhood vaccination: A qualitative evidence synthesis. *Cochrane Database of Systematic Reviews*, 2. <https://doi.org/10.1002/14651858.CD013265>
58. Western Cape Metro- Emergency Medical Services staff. (2021). *Message from EMS Director on EMS rollout*. <https://vimeo.com/515744104>
59. Western Cape Metro- Emergency Medical Services staff. (2021). *From ICU to the Vaccination Room with Sindi Dayile*. <https://vimeo.com/518782921>
60. Western Cape Metro- Emergency Medical Services staff. (2021). *Still deciding if you want to take the vaccine? Check out this video on the EMS vaccine rollout here!* <https://vimeo.com/517179461>

61. Global Resilience Partnership. (2020, April 2). *Building Community Resilience in the Face of Covid-19*. Global Resilience Partnership.
<https://www.globalresiliencepartnership.org/building-community-resilience-in-the-face-of-covid-19/>
62. Schmidt-Sane, M., Niederberger, E., & Hrynicky, T. (2021). *Key Considerations: Operational Considerations for Building Community Resilience for COVID-19 Response and Recovery*. Institute of Development Studies (IDS). <https://doi.org/10.19088/SSHAP.2021.002>
63. Norris, F. H., Stevens, S. P., Pfefferbaum, B., Wyche, K. F., & Pfefferbaum, R. L. (2008). Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology*, 41(1–2), 127–150. <https://doi.org/10.1007/s10464-007-9156-6>
64. Sabi, S. C., & Rieker, M. (2017). The role of civil society in health policy making in South Africa: A review of the strategies adopted by the Treatment Action Campaign. *African Journal of AIDS Research*, 16(1), 57–64. <https://doi.org/10.2989/16085906.2017.1296874>
65. Van Ryneveld, M., Whyte, E., & Brady, L. (2020). What Is COVID-19 Teaching Us About Community Health Systems? A Reflection From a Rapid Community-Led Mutual Aid Response in Cape Town, South Africa. *International Journal of Health Policy and Management*, 0. <https://doi.org/10.34172/ijhpm.2020.167>
66. Schmidt-Sane, M., Hrynicky, T., & Niederberger, E. (2021). *Community Resilience: Key Concepts and their Applications to Epidemic Shocks*. Institute of Development Studies (IDS). <https://doi.org/10.19088/SSHAP.2021.003>