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Assessing strategies to increase vaccine uptake in Tanzania

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Key messages

- **Combining Global VAX with partners' coordination and result-based supportive supervision emerges as a highly recommended approach to enhance vaccine access through global partnerships, while ensuring accountability and support at the local level.**
- **Pilot programs should be launched, with international donor support, to promote behavioral insights in regions with low vaccine uptake. Pilot results can then be used to refine strategies and inform the scale up and implementation of programs at the national level.**
- **Robust monitoring and evaluation systems must be established to track progress of programs, review strategies, and sustain public confidence in vaccination efforts.**
- **Tailored training should be provided to Community Health Workers (CHWs) and vaccine ambassadors engaged in promoting vaccination within local communities, to ensure the dissemination of accurate information.**

Vaccine hesitancy in Tanzania

Vaccine hesitancy in Tanzania presents a significant public health challenge, particularly in the context of the COVID-19 pandemic.

Despite efforts by the Tanzanian government to promote vaccination, including initiatives led by President Samia Suluhu Hassan, widespread reluctance to accept COVID-19 vaccines persists. This hesitancy is fuelled by fears of side effects, misinformation about vaccine safety and effectiveness, and a lingering mistrust in the healthcare system, exacerbated by the previous administration's downplaying of the pandemic's severity.

The persistance of vaccine hesitancy poses serious risks, delaying the achievement of herd immunity and perpetuating the virus's spread, which could lead to further loss of lives and economic disruption. If the issue is not adequately addressed, Tanzania may face prolonged health crises, economic instability, and diminished public trust in future health initiatives.

Addressing this issue is crucial to ensuring a workable public health system, restoring confidence in the overall healthcare system, and ensuring successfully navigation of the country out of the pandemic as well as similar outbreaks that may/will require vaccines to stop the spread.

Alternatives strategies available to improve COVID-19 vaccine uptake in Tanzania

There are various strategies that can be effective to improve the uptake of the COVID-19 vaccine. In 2021, a team of local researchers in Tanzania received PEP support to conduct an experimental evaluation to assess the impact of a particular **strategy, related to the application of behavioral insights.**

The intervention consisted in implementing an **SMS campaign, sending various messages regarding the impact COVID-19**, to see if it may encourage people (in a selected community) to be vaccinated. The objective of the study was to provide evidence that could be used to inform decisions related to initiatives aimed at tackling vaccine hesitancy in the country.

However, in order to situate their specific findings into a broader context of alternative options available (for government interventions to improve vaccine uptake), the research project team also identified **two other sets of strategies that have been implemented in Tanzania**

- **Engagement of community health workers (CHWs) and use of vaccine ambassadors**
- **Development partners' support, coordination and results-based supportive supervisio**n

The researchers then proceeded to analyze and compare the pros and cons of the three options.

Option 1 - Applying behavioral insights to improve vaccine uptake

- *Use tailored messaging and behavioral insights to increase vaccine confidence and willingness, particularly in at-risk groups.*

There is substantial evidence that adapting messaging to intended audiences increases impact on behaviors. New research from The Behavioral Insights Team (BIT), which tested four messages with 30,000+ people, shows that effective messaging can increase willingness to get the COVID-19 vaccine, including among at-risk groups.

The PEP-supported SMS campaign experiment consisted mainly in targeting Tanzanian mobile phone subscribers with two different types of SMS contents - both aimed at increasing vaccine uptake but hypothesizing different mechanisms by which Tanzanians may be induced to agree to get vaccinaned; one based on empathy (altruism for others) and the other on self interest (focused on long term health impacts). The design followed the model of other similar initiatives: two led by the UNDP (in Sudan, to discourage panic, and in Egypt, to address a variety of domestic behaviours), and another by the London Borough of Havering, working within the national vaccination distribution plan framework to address concerns of at-risk groups in their community.

Option 2 - Engaging CHWs & vaccine ambassadors

- *Utilize CHWs for community mobilization, service delivery, and vaccine tracking.*
- *Train vaccine ambassadors, including trusted community leaders, to address vaccine myths and promote uptake.*

In Tanzania, **community health workers** (CHWs) have long been used in interventions related to different diseases, because they link the community with health facilities. Their responsibilities include a mix of health promotion and basic curative services delivered in the community. Since 2021, CARE Tanzania – an NGO collaborating with government to promote vaccine access across the country - has engaged CHWs to address misconceptions about vaccination, while improving health communication and data management tools to increase vaccine uptake.

Vaccine ambassadors are trusted community members (e.g. political or religious leaders, artists, etc.) who are engaged and trained to spread important health information in their neighborhoods. Their role is to increase public knowledge about the vaccine, addressing concerns and misinformation, and sharing educational resources with their network of family, friends, and local organizations.

Option 3 - Global Vax and partners coordination

- *Leverage Global VAX to ensure vaccine availability in hard-to-reach areas.*
- *Enhance partner coordination for targeted vaccination efforts, with a focus on supportive supervision and monitoring.*

Strong leadership and coordination are necessary to respond effectively to health crises. The launch of the Global Vaccine Access (Global VAX), in June 2022, marked a pivotal moment in Tanzania's fight against COVID-19. The initiative leverages international resources and technical expertise to ensure that vaccines reach rural and remote populations, while enhancing healthcare workers' ability to support immunization efforts and track vaccine safety, data, and analytics.

In Tanzania, development partners play a crucial role in supporting regional authorities to meet vaccination coverage targets. One key strategy for enhancing these efforts is the introduction of "partner coordination and results-based supportive supervision". One example is the "partner mapping" initiative launched by WHO in the Manyara region, to prevent fragmentation and duplication of efforts, while ensuring program coherence and alignment with targets. It also included a "supportive supervisory plan" to closely monitor processes before, during, and after campaigns. By leveraging WHO's technical leadership, implementing partners working in Manyara managed to increase vaccination rates from 3% to 20% in just a few days.

Evaluation of alternative strategies

To assess the comparative advantages and disadvantages of the three proposed alternative strategies, the authors used two main sources of information:

- A structured consultation process, involving a series of in-person meetings, through which they collected the insights and opinions of multiple stakeholders, including healthcare providers, policymakers, and community leaders.
- A systematic literature review, to gather evidence on COVID-19 vaccine uptake, focusing on studies that addressed the effectiveness, efficiency and equity effects of initiatives aimed at improving vaccination rates in similar settings.

	Advantages	Disdvantages
Option 1	• Behavioural insights align with WHO guidelines and help in reducing virus transmission by understanding decision-making processes. • It complements restrictive measures by offering a nuanced, tailored approach to changing perceptions and behaviours around vaccination.	• Results from the experimental study found no indication of a positive impact three weeks after the SMS campaign. • Simple messaging might not be enough to convince people to get vaccinated; deeper, more comprehensive knowledge is required. • The approach may lack immediate impact, as behaviour change can take time to manifest.
Option 2	• CHWs have long-standing credibility in the community, bridging the gap between health facilities and the public. • CHWs are effective in planning, mobilization, and service delivery. • Vaccine ambassadors are well-positioned to dispel myths and misinformation, leveraging trust within the community.	• CHWs may hold personal biases and misconceptions, leading to the spread of incorrect information. • Vaccine ambassadors often lack medical expertise, increasing the risk of misinformation. • Sustainability issues arise due to a lack of financial resources for transportation, accommodation, and time compensation for vaccine ambassadors.
Option 3	• Global VAX ensures vaccine availability in hard-to-reach areas and strengthens healthcare worker capacity. • Partner coordination helps address resource gaps and reduces duplication of efforts, allowing for a more targeted approach.	• Vaccine hesitancy persists despite the availability of vaccines. • Implementation challenges occur due to overlapping responsibilities among partners, especially in shared regions. • Insufficient support materials and resources for effective supportive supervision.

Each alternative strategy has also been evaluated based on a set of policy-relevant criteria that are typically used to assess options for government intervention: efficacy, effectiveness, equity, political feasibility, administrative feasibility/cost, and relevance to the local context (see left-side text box).

The results of this comparative evaluation are presented on page 4 (table 1 and below).

Effective: Producing a desired outcome (i.e. increase vaccine uptake)

Efficient: Producing desired outcome without wasting materials, time, or energy.

Equity: The benefits (inputs) are made available to all target beneficiaries, irrespective of their characteristics or attributes.

Political feasibility: Option's attractiveness to political leaders – i.e. the option is considered "politically feasible" if it increases the popularity of political leaders.

Administrative feasibility: Level of logistical challenges associated with implementing the intervention. This also largely entails assessing the cost, or "affordability", of the option for the government.

Table 1 - Comparative evaluation of alternative strategies based on policy-relevant criteria

	Behaviour insights (e.g. SMS campaign)	CHWs & vaccine ambassador programs	Global VAX & partner coordination
Efficiency	*Yes*	*Partially yes*	*Partially yes*
Effectiveness	*Yes*[1]	*No*	*Partially yes*
Equity	*Yes*	*Yes*	*Yes*
Political feasibility	*Yes*	*Yes*	*Yes*
Administrative feasibility (Costs)	*Partially yes*	*Yes, but cost of the program likely to be higher*	*Partially yes*
Relevance in context	*Yes*	*Yes*	*Yes*
Recommended	*Yes*	*Yes*	*Yes*

1. Although the PEP experimental study did not reveal significant impact, possibly due to various factors, evidence still suggests that SMS campaigns are effective in improving COVID-19 vaccine uptake (Milkman et al., 2021)

As the application of behavioural insights through SMS campaigns is not only effective in achieving the desired results, but also requires fewer resources and can be scaled rapidly, it presents a clear advantage and emerges as the most efficient option (as it can deliver outcomes with less effort and time).

The other two options are rated as partially efficient as they are much more resource-intensive. The third option - Global Vax and partner coordination - is assessed as partially effective as it as demonstrated some level of success but not consistently across all contexts. The option of CHWs & vaccine ambassador programs, on the other hand, is not considered effective, as it may not achieve widespread or timely impact due to operational constraints and resource limitations.

Costs (reflected under administrative feasibility) play a critical role in governmental decision-making. While the CHWs & vaccine ambassador programs are considered feasible, these programs will require substantial investments in training, deployment, and logistical support. By comparison, the other two options are assessed as relatively more cost-effective.

Conclusions and policy recommendations

Upon comprehensive evaluation of the alternative strategies, the **strategy combining Global VAX with partners' coordination and result-based supportive supervision** (option 3) emerges as a highly recommended approach. This policy not only enhances vaccine access through global partnerships but also ensures accountability and support at the local level, thus improving overall effectiveness and administrative feasibility. Even if not perfectly efficient, this approach still provides the most practical balance between resources, accountability, and vaccine access. Additionally, this option aligns well with political and equity considerations, as it leverages international support to bolster national health initiatives.

Despite the observed null results from the experimental study, the **strategy of applying behavioral insights** (through targeted communication strategies and incentives) should still be considered as a relevant approach to improve the efficacy and relevance of vaccination campaigns, i.e. as it contributes to addressing vaccine

hesitancy and promoting positive health behaviors. Moreover, its cost-effectiveness and adaptability to local contexts make it a politically feasible and administratively viable option. However, to ensure effectiveness, messaging campaigns should be updated based on factors identified by investigating social and behavioral factors that influence vaccine acceptance and uptake.

The recommendation is therefore to combine these two approaches – both politically and administratively feasible - so as to offer a balanced solution that maximizes efficacy, ensures equitable access, and ultimately enhances the public health response to the pandemic.

Meanwhile, and despite limitations due to related administrative costs, Tanzania can still proceed with engaging **community health workers (CHWs) and vaccine ambassadors**, as this strategy also offers important outreach advantages. This should also be complemented by enhanced outreach and education programs, including health education campaigns, at the community level. Despite Tanzania's long and distinguished history with community health workers (CHWs), a comprehensive needs assessment is necessary to determine their total value, including their size, distribution, and the roles they play. This will enable more effective resource planning and allocation.

Road map for implementation of policy recommendations

Pilot programs: With international donor support, launch pilot projects promoting behavioural insights in regions with the lowest vaccine uptake. Utilize CHWs and ambassadors to engage in door-to-door campaigns, community meetings, and local media outreach. Monitor and evaluate these pilots for effectiveness, adjusting strategies as necessary.

Scale-up and partner engagement: Based on pilot results, scale up the program nationally. Engage development partners for resources and support, particularly in hard-to-reach areas. Strengthen coordination mechanisms to avoid duplication and ensure efficient resource use.

Needs assessment and training: Conduct a comprehensive needs assessment to understand the specific gaps in CHWs' knowledge and the community's vaccine concerns. Follow this with targeted training programs that address these gaps, ensuring that CHWs and vaccine ambassadors are well-equipped to provide accurate information.

Continuous monitoring and adaptation: Establish a robust monitoring and evaluation framework to track vaccine uptake and public sentiment. Use this data to continuously adapt strategies, ensuring sustained effectiveness and community trust.

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To find out more about the scientific research methods and findings, read the full PEP working paper.