

Infodemics and the Engagement of Polio Champions in Addressing Vaccine Hesitancy and Refusal

Richard Odindo,
Social and Behaviour Change Specialist,

Abstract: The resurgence of poliovirus in Kenya, detected through human and environmental samples, has raised alarm within the public health sphere, necessitating swift and robust interventions. Compounding this challenge is the concurrent outbreak of poliovirus in neighbouring countries, increasing the risk of cross-border transmission and threatening the region's progress toward polio eradication. In response, the Kenyan Ministry of Health, in collaboration with the Global Polio Eradication Initiative (GPEI), launched a supplementary immunization activity (SIA) featuring the novel oral polio vaccine type 2 (nOPV2) in nine high-risk counties. This campaign aimed to achieve a vaccination coverage rate of at least 95%, a critical threshold for sustaining immunity and preventing the spread of the virus.

Despite the comprehensive planning and mobilization efforts, the campaign faced an unexpected and formidable challenge: the prevalence of infodemics. Defined as the rapid spread of both accurate and inaccurate information during a crisis, infodemics have become a global public health threat, particularly in the digital age. In Kenya, misinformation and disinformation about the polio vaccine—ranging from myths about infertility to allegations of harmful substances—spread swiftly through social media and local networks, undermining trust in the vaccination effort. These false narratives fuelled vaccine hesitancy, particularly in vulnerable communities such as Busia County, where cultural beliefs and mistrust in government initiatives further complicated the situation.

This case study focuses on the critical role played by a polio champion in addressing vaccine hesitancy within Busia County, one of the high-risk regions targeted during the SIA. Polio champions, as individuals who have personally experienced the devastating effects of polio, bring a unique and impactful perspective to public health campaigns. Their lived experiences allow them to connect with communities on a deeply personal level, breaking through barriers of skepticism and distrust.

In Busia County, vaccine hesitancy was particularly evident within a local church community where misinformation had taken root. The church leader's refusal to allow vaccination teams access to the premises risked leaving dozens of children unvaccinated, posing a significant threat to the campaign's success. Traditional approaches by health workers—such as providing scientific evidence and formal assurances—failed to sway the congregation, highlighting the limitations of conventional public health communication in the face of entrenched misinformation.

The intervention of the polio champion proved to be a turning point. Through his heartfelt testimony about the challenges of living with polio, he provided a tangible and emotionally resonant counter-narrative to the misinformation circulating within the community. By addressing fears with empathy and connecting the vaccination effort to the shared aspirations of protecting children's futures, the polio champion was able to

rebuild trust and encourage the church leader to permit the vaccination exercise. This intervention not only facilitated the vaccination of dozens of children but also improved trust in the broader public health campaign.

Key Findings: The study highlights several critical insights:

Trusted Messengers Are Essential: Polio champions' personal stories and credibility make them powerful advocates for vaccination. Their lived experiences address fears and misinformation effectively, transforming abstract health risks into relatable and urgent realities.

Culturally Relevant Engagement Matters: Approaching communities with cultural sensitivity and empathy builds bridges of trust. The polio champion's ability to frame the vaccination effort within the context of shared values—such as the wellbeing of children and the collective fight against disease—helped dismantle resistance and foster cooperation.

Proactive Infodemic Monitoring Is Critical: The rapid spread of misinformation requires equally rapid detection and response mechanisms. Real-time monitoring of local narratives can enable public health teams to anticipate challenges and implement targeted interventions before misinformation takes root.

Recommendations

To address the challenges posed by vaccine hesitancy and infodemics, the study offers the following recommendations:

Scale Up Deployment of Polio Champions: Increase the recruitment, training, and deployment of polio champions across high-risk areas. These trusted individuals can effectively counter misinformation and foster trust in vaccination efforts by sharing their personal narratives.

Empower Community Networks: Collaborate with local leaders, religious figures, and grassroots organizations to amplify accurate health messages and dispel myths. Engaging these trusted figures ensures that health campaigns are grounded in the cultural and social realities of the communities they aim to serve.

Enhance Strategies for Responding to Infodemics: Develop robust systems for tracking misinformation in real time and deploy rapid-response teams to address false narratives. Digital tools, combined with community reporting mechanisms, can help identify and counter misinformation early.

Conclusion

The experience in Busia County demonstrates that combating vaccine hesitancy requires a holistic and community-centered approach. Polio champions, as trusted local advocates, play a pivotal role in rebuilding trust and dispelling fears driven by misinformation. By scaling up the use of such champions, empowering community networks, and enhancing infodemic response strategies, Kenya and other high-risk countries can strengthen their vaccination efforts and move closer to the goal of eradicating polio. This case study serves as a valuable blueprint for addressing similar challenges in other regions, emphasizing the power of culturally tailored interventions in overcoming misinformation and fostering public health resilience.

Keywords: Vaccine Hesitancy, Infodemics, Polio Champions, Community Engagement, Kenya

I. Introduction

In response to the reported cases of poliovirus in Kenya, identified through human and environmental samples, as well as an outbreak in neighbouring countries, the Ministry of Health, with the support of the Global Polio Eradication Initiative (GPEI) partners, executed a novel oral polio vaccine type 2 (nOPV2) supplementary immunization activity (SIA) from November 9 to November 13, 2024. This initiative targeted nine high-risk counties to achieve a vaccination coverage of at least 95%, thereby safeguarding Kenya's polio-free status amidst the potential risk of cross-border transmission.

The primary aim of the campaign was to enhance population immunity among children under five years of age in Nairobi, Machakos, Kiambu, and Kajiado counties, and among individuals under ten years of age in Busia, Bungoma, Trans Nzoia, West Pokot, and Turkana counties. However, vaccine hesitancy, exacerbated by infodemics, posed a notable challenge. Misinformation regarding the polio vaccine—ranging from unfounded claims of infertility risks to various conspiracy theories—significantly eroded public trust in the campaign. This situation reflects a broader global trend observed since the onset of the COVID-19 pandemic, during which misinformation and disinformation have proliferated through digital platforms, thereby complicating public health efforts.

II. Nature of Infodemics in Kenya

The advent of digital technologies and social media platforms in Kenya has transformed the way information is shared, offering unparalleled opportunities for the dissemination of critical health messages. Yet, with this digital revolution has also emerged a formidable twin brother: the rate at which misinformation and disinformation, variously referred to as "infodemics," are spread. The sheer volume of both credible and noncredible information during times of health crisis blurs lines of trust to a place where confusion overrides public health efforts.

In Kenya, vaccine-related infodemics are shaped by historical, cultural, and social settings. Persistent myths about polio vaccines—such as claims that they cause infertility, contain harmful substances or are part of a Western conspiracy to control African populations—exploit long-standing fears within communities. These narratives find fertile ground in environments where mistrust of government initiatives and apprehension toward foreign interventions already exist. The consequences are especially pronounced in regions where literacy rates are low, and access to credible health information is limited.

Social media platforms, especially WhatsApp, Facebook, and Twitter, have emerged as strong amplifiers of this kind of misinformation. Unlike traditional media, which works under some editorial discretion, these platforms allow unverified claims and conspiracy theories to go viral. In rural and semi-urban areas, where digital literacy is generally low, these false narratives are not only shared but believed, shaping perceptions and decision-making at the grassroots level.

This was quite evident during the 2024 polio vaccination campaign in Busia County. The campaign had targeted 279,444 children below the age of ten as the exercise aimed to protect the health of the children and sustain gains made by Kenya toward eradicating polio. However, vaccine hesitancy, informed by infodemics, remained a major challenge in the process. In one of the local church congregations, misinformation flowed that the vaccines were unsafe and part of a hidden agenda. It is these claims that ate away trust, and the leadership ultimately barred vaccination teams from their premises—a far cry from allowing dozens of children to miss potentially lifesaving vaccinations.

What's happening in Busia County speaks to the larger set of challenges brought about by infodemics. In places like this, misinformation does more than sow fear—it solidifies resistance. Cultural beliefs, a sense of historical grievance, and spotty access to information combine to create an ecosystem where myths are given free rein,

often eclipsing official health messages. Health workers approached the church leader repeatedly, offering evidence and reassurance, but were met with deep skepticism at every turn.

Breaking through this impasse required a different approach—one grounded in cultural sensitivity and trust-building. Enter the polio champion, a respected survivor of the disease whose life story carried the weight of lived experience. With humility and empathy, he addressed the congregation, recounting the personal hardships he endured as a result of contracting polio. His words were not merely a plea—they were a vivid illustration of the stakes. He spoke of the physical and emotional toll polio extracts from not only individuals but also from families and entire communities. The message is clear: vaccination is the shield that can protect their children from the same fate.

The testimony of the polio champion struck a chord. His story, so relatable to the congregation, tore down the wall of fear and skepticism that had been built by misinformation. Eventually, the church leader relented, allowing vaccination teams to proceed. Dozens of children were vaccinated that day, and little by little, trust began to rebuild, one conversation at a time.

This incident underlines how complex infodemics can be and the multilateral ways in which they need to be countered. At base, misinformation feeds on fear and distrust; culturally attuned strategies can break that. Trusted messengers like the polio champion fill in the gaps that official channels alone cannot reach. By addressing their fears with respect and empathy, they can replace doubt with understanding and resistance with cooperation.

The experience in Busia County shows the power of local voices in countering global challenges. It shows that to get ahead of the problem, proactive steps are necessary in the way of equipping communities with accurate and accessible health information, monitoring misinformation in real-time, and much more. In a world where myths move quicker than facts, it is not enough to deliver messages to rebuild trust; it requires authentic community engagement on a deep human level.

III. Methods

This study focused on the R2 polio vaccination campaign in Busia County, offering a critical lens through which to examine the challenges posed by vaccine hesitancy and the interventions employed to address it. At the heart of the inquiry was the role of a polio champion—a respected community figure and survivor of polio—whose involvement exemplified the transformative potential of localized and culturally resonant approaches to public health crises.

This study used a multi-method approach for data collection to understand the dynamics. Observations of the activities that involve community engagement allowed an on-the-spot insight into the ways health messages were communicated and received by the community and whether such messages were acted upon or not. These captured interactions between health workers and community members, and their local influential leaders, have emphasized barriers emerging in the way of misinforming the public.

Accordingly, and in this light, an understanding that became deeper resonated with health officials through personal interviews, providing the strategic perspective regarding these operational challenges of the vaccination drive. Officials elaborated on how misinformation had taken root, myths and specific fears driving hesitancy to vaccination, and how conventional outreach couldn't succeed in overcoming barriers. Such interviews also bring into the light the at-the-back thinking behind using a polio champion for making critical dent among these barriers.

Documented outputs from the vaccination campaign, such as vaccination coverage records, reports on community engagement initiatives, and feedback from local stakeholders, were also consulted in the study. This provided a quantitative and qualitative basis for analyzing the outcomes of the campaign and the effectiveness of its strategies.

The following key themes came into focus during the analysis:

The Impact of Infodemics: The findings emphasized the insidious effects of infodemics in setting the trend for public views about the polio vaccine. In Busia County, misinformation had fostered skepticism and deepened distrust in the campaign's intentions, making it an obstacle to achieving vaccination goals. This called for urgent interventions that could dismantle misinformation while rebuilding community trust.

The Role of Polio Champions: The intervention of the polio champion marked a turning point in the campaign. A survivor of polio himself, the champion brought an authenticity and credibility to the vaccination effort that no one else could match. His personal story spoke to the community on a deeply emotional level, bridging the gap between scientific evidence and human experience. This case showed how trusted messengers can effectively address fears and counteract the narratives propagated by misinformation.

Effectiveness of Community-Driven Strategies: The success of the polio champion's engagement underlined the value of culturally sensitive, community-driven approaches to overcome resistance. Indeed, the champion was able to engage with the community, respectfully address their concerns, and reframe vaccination as a collective responsibility, which was key in shifting attitudes and behaviours.

Overall, the study showed that fighting vaccine hesitancy is not just about the distribution of information but calls for an astute understanding of community dynamics and strategies that can be applied in a manner that echoes local values and experiences. The findings make a strong case for integrating trusted community figures into public health campaigns, with an emphasis on the power of human connection in addressing the challenges posed by infodemics and vaccine resistance.

Findings

The challenge of vaccine hesitancy came to a head in Busia County during the polio vaccination campaign when a local church leader refused to allow vaccination teams into the church compound. Such a refusal was deep-seated, based on concerns about the safety of the vaccines, magnified by misinformation circulating within the community. From claims of toxic substances in the vaccine to conspiracy theories about foreign interference, myths and false claims about the polio vaccine had circulated, which put doubt into the minds of the congregants. This decision of the church leader put dozens of children at risk of missing critical immunizations, thus threatening the success of the broader vaccination campaign.

These were resisted by health workers trying to allay the leader's fears. Despite the scientific evidence and reassurances shown, the workers struggled to dispel the distrust fanned by the misinformation. The workers had a formal approach that did not have the cultural or emotional tone to break the skepticism. The standoff showed how far traditional outreach methods could go when faced with deep-seated fears and dynamics specific to the community.

It was at this point, however, that the intervention of the county's polio champion was to prove the real turning point. A survivor of polio himself, the champion's weight of credibility and authenticity had an altogether different dimension. His life story was not simply a narrative; it was a living testament to the devastating impact of the disease. Addressing the congregation, the polio champion shared his personal experience, painting a vivid

picture of the hardships he had to face due to polio. He spoke not only about the physical challenges but also of the emotional and social toll the disease had exacted on his life and his family.

His message was simple yet profound: vaccination was not just a medical intervention; it was a shield, a means of protecting children from the lifelong burdens he had faced. By couching vaccination as an act of love and a way to protect, he spoke directly to the shared values and aspirations of the congregation for their children's futures.

The testimony of the polio champion transformed minds. His story transcended the abstract vaccine safety debates and spoke with the community on a deep level. Skepticism melted to trust as congregants could see in him the echoes of their own hopes and fears. Even more importantly, this same champion moved the church leader's words, who had earlier strongly taken a stand in opposition. The leader, therefore, heeded the sincerity and urgency of the message and allowed access to the vaccination teams into the compound.

The result was immediate and profound: dozens of children were vaccinated against polio that day, protecting them from the disease. Beyond the immediate health benefits, the intervention also began to repair the trust that had been eroded by misinformation. Parents and caregivers who had harboured doubts were reassured by the champion's example and the respectful engagement of the health teams.

This incident epitomizes the power of culturally sensitive, community-driven approaches to addressing vaccine hesitancy. The ability of the polio champion to bridge the gap between science and lived experience has shown that the rebuilding of trust requires more than just information—it demands empathy, authenticity, and deep understanding of the values of the community. His intervention not only ensured the success of the vaccination drive in the church but also provided a powerful model for how to counter misinformation and foster cooperation in similar contexts.

IV. Discussion

The overarching theme of this case illustrates the omnipresence of challenges that infodemics bring forth into vaccination efforts, thus putting to rest any doubt that culturally adapted interventions are among the strongest remedies. This showcases an interface among misinformation and community distrust and trusted locals' ability to advance the way to understanding and cooperation. Lessons learned from this intervention in Busia County also add knowledge for future public health campaigns.

1. Polio Champions: Credibility and Authenticity Beyond Comparison

Polio champions, because they have experienced firsthand the consequences of the disease, carry a credibility that cannot be emulated by volumes of scientific evidence or even advocacy efforts mounted from outside. The life experiences of polio champions help connect abstract health messages with more concrete realities that the communities can easily identify with. In this instance, the story of the polio champion dramatically depicted the implications of polio—in a manner in which no fact and no statistics could hope to.

This authenticity was necessary to overcome deep-seated fears and to fight against disinformation. When the champion in the fight against polio shared his life path, it reframed vaccination from suspicion to shared humanity. His message was laced with emotion, which helped the congregation to connect with him not as an outsider or authority figure but as one who understood their concerns because he had lived through the very challenges they sought to avoid for their children.

2. Empathy and Respect: Bridging the Trust Gap

What worked for the polio champion was not only his personal story, but also his approach: instead of telling the community that their fears were irrational, he listened to them and spoke to their apprehensions in a respectful

manner. Such respectful engagement dismantled the barriers that go up whenever a community feels demeaned or misunderstood.

By engaging the church leader and congregation on their own terms-addressing specific concerns with personal testimony and relatable explanations-the polio champion was able to bridge the divide between the health campaign and the community. His demeanour said this was not about compelling compliance, but about protecting and empowering families. This shift in perception was critical in transforming skepticism into trust, allowing vaccinations to be delivered successfully.

3. Local Advocates: The Key to Combating Misinformation

The success of this intervention really speaks to leveraging local champions in the provision of credible health information in culturally recognizable ways. Local champions, like the polio champion, are steeped within the cultural and social ecology compared to other outsiders. They know the values, beliefs, and fears of the residents of their town and can structure their message in a manner that the target population identifies with.

In this case, the ability of the polio champion to connect emotionally and culturally with the congregation was what broke down the misinformation that had taken root. His testimony, given in a familiar and trusted setting, provided lived evidence against the false narratives on the benefits of vaccination. Such a localized approach proved far more effective than generic health messages or top-down directives and showed that trust is best built by those who share a community's experiences and values.

V. Conclusion

The experiences in Busia County remind one of the crucial place culturally tailored interventions hold in the response to vaccine hesitancy and infodemics. Polio champions show the power of personal stories in breaking down barriers of fear and misinformation, while empathetic engagement builds bridges of mutual understanding and trust. This is how the use of trusted local voices can help deliver accurate, relatable health messages to rebuild confidence in public health initiatives, especially among those communities that resist external influence.

But public health challenges are more and more complex in this information-without-truth environment; thus, the necessity of community-driven and culturally sensitive strategies is ever felt more strongly. This case study gives a way in which vaccination campaigns must integrate such approaches in a manner that no child, especially due to fear and misinformation, is left vulnerable.

Recommendations to Enhance Vaccination Campaigns in the Context of Infodemics

To effectively respond to vaccine hesitancy and sustain progress toward polio eradication, targeted and community-focused strategies need to be implemented. The following recommendations provide actionable steps to combat misinformation and build trust within communities.

1. Scale Up Recruitment, Training, and Deployment of Polio Champions

As survivors of the disease, polio champions hold a special and unmatched capacity to strike a chord with communities. Personal experiences lend an air of authenticity and credibility to the voices of vaccination advocates, turning what could otherwise be abstract health messages into powerful personal stories. Scaling up the recruitment, training, and deployment of polio champions in high-risk areas would amplify their impact.

Recruitment: Identify individuals who have experienced the effects of polio and are respected within their communities. Their relatability and shared history with the audience can create an immediate connection.

Training: Provide polio champions with communication skills, accurate health information, and strategies for addressing community concerns and misinformation. Training should also include cultural sensitivity and techniques for empathetic engagement.

Deployment: Assign polio champions to areas of high vaccine hesitancy and misinformation prevalence, prioritizing areas with low trust in government initiatives. Their presence at these places can build confidence and counteract the effects of misinformation at a grassroots level.

2. Engage Local Leadership, Religious Figures, and Grassroots Organizations

Local leaders, religious leaders, and grassroots organizations often hold considerable sway in their communities. Working with these trusted leaders and organizations can help ensure the health messages are accurate and the myths are debunked.

Engage Religious Leaders: The religious leaders usually enjoy a better reputation and can be used as strong vaccination ambassadors. Engaging them in the development and implementation of health campaigns allows them to overcome resistance and build trust.

Engage Grassroots Organizations: Local organizations have strong roots in their communities. Collaboration with these entities enables health campaigns to reach even the most vulnerable groups.

Create Culturally Appropriate Messages: Collaborate with local leaders to create messages that reflect community values and priorities. The more tailored messages, when provided through trusted voices, are more likely to resonate and help combat misinformation.

3. Create Mechanisms for Real-Time Tracking of Misinformation

Misinformation spreads rapidly, particularly on digital platforms, and requires equally swift countermeasures. Establishing real-time tracking systems and proactive response strategies is essential to staying ahead of false narratives.

Misinformation Monitoring: Use digital tools to monitor social media platforms, online forums, and community channels for emerging misinformation trends. This can help identify and address harmful narratives before they spread widely.

Rapid-Response Strategies: Establish teams capable of responding to misinformation in real time. The composition of such a team should include health professionals, communication experts, and local influencers who can provide information in forms that best resonate with the audience.

Community Reporting Mechanisms: Allow community members to report instances of misinformation they come across. This participatory approach enhances not only monitoring but also creates a shared sense of responsibility in combating misinformation.

VI. Implementing the Recommendations

These strategies can be used by high-risk and vulnerable countries to improve vaccination efforts and address the root causes of vaccine hesitancy:

Polio Champions: Personal stories and cultural familiarity can change perceptions and build trust in vaccination efforts.

Engagement Collaboration: Working with local trusted figures means that health messages reach communities in a way that matters and resonates.

Proactive Misinformation Management: Real-time tracking and addressing of misinformation prevents escalation and helps maintain health campaigns' integrity. Conclusion

This means the fight against vaccine hesitancy and misinformation should be comprehensive, community-centred, and multi-pronged. Scaling up with the use of trusted local voices, developing partnerships with key leaders, and setting up strong tracking systems for misinformation—the efforts would be long-standing protection of populations and sustaining progress toward eradication. These recommendations outline some paths through which public health initiatives could adapt to meet these challenges of the digital era so that no child gets left unprotected due to fear or misinformation.

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