Rapid Response Brief

Date: August 2024

What can research evidence tell us about:

Why vaccine coverage, which dropped during the COVID-19 pandemic, is slow to recover, particularly in Kampala and Wakiso

Key messages

The slow recovery of vaccine coverage after the COVID-19 pandemic is driven by a few intertwined factors:

➔ **Pandemic Strain:** Ongoing COVID-19 variants need continuous vaccine research and development, which has shifted funding and other resources from routine vaccines.

➔ **Vaccine Hesitancy:** Misinformation and distrust during the COVID-19 pandemic increased vaccine hesitancy. Public confidence in health institutions decreased, impacting the uptake of childhood vaccines.

➔ **Urban Challenges:** Economic hardship during the pandemic led to foregoing healthcare by low-income households. The slow economic recovery continues to impact healthcare utilization, including vaccination services, as hidden costs like transportation and purchasing vaccination cards reduce access to immunization in urban areas.

➔ **Healthcare delivery challenges:** Vaccine stock-outs, long waiting times, poor health education, lack of exposure to mass media on benefits of vaccination all impact immunisation uptake.

Where did this Rapid Response come from?

This document was created in response to a specific question from a policy maker in Uganda.

It was prepared by the Center for Rapid Evidence Synthesis (ACRES), at the Uganda country node of the Regional East African Community Health (REACH) Policy Initiative

✚ Included:

- **Key findings** from research
- **Considerations about the relevance** of this research for policy decisions in Uganda

✖ Not included:

- Recommendations
- Detailed descriptions

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Short summary

Background: The COVID-19 pandemic caused a major disruption to the delivery of healthcare services, including routine immunization, leading to a sharp decline in vaccine coverage. In 2021, 25 million children missed their routine vaccinations, the highest in nearly 20 years. In Uganda, urban areas like Kampala have been hit particularly hard, with only 41.4% of children fully vaccinated. Nationwide childhood vaccination coverage has dropped to 85%, well below pre-pandemic levels of over 90%. This drop has resulted in more children being partially vaccinated or missing vaccines altogether, leaving the population vulnerable to outbreaks of diseases like measles and polio. The Ministry of Health's expanded program on immunisation, which includes static and outreach services, has tried to maintain access, but physical barriers, sociocultural issues, and knowledge gaps continue to affect vaccine uptake, especially in marginalized and hard-to-reach communities. In response to these challenges, the assistant commissioner for health information reached out to ACRES for support in characterizing problem of low vaccine coverage in peri-urban areas of Kampala and Wakiso.

Rapid Response question: Why vaccine coverage, which dropped during the COVID-19 pandemic, is not recovering, particularly in Kampala and Wakiso?

Findings: The findings indicate that the COVID-19 pandemic greatly impacted vaccine coverage, leading to a slow recovery to pre-pandemic levels. Key factors contributing to this decline include:
The continued strain of the pandemic due to the emergence of new COVID-19 variants has required ongoing surveillance and research, diverting resources from routine vaccination programs. This reallocation of funds has strained the delivery of essential vaccines, hindering recovery efforts.
The pandemic also exacerbated vaccine hesitancy, fueled by misinformation and distrust in health authorities. Rapid vaccine development during the pandemic raised safety concerns and led to a decline in public confidence, affecting not only COVID-19 vaccinations but also routine immunizations. For instance, in Uganda, the requirement for written consent for COVID-19 vaccination further diminished trust in health institutions, complicating efforts to achieve immunization goals.
Economic hardships caused by the pandemic disproportionately affected vulnerable urban populations, increasing poverty and unemployment. These challenges made healthcare, including vaccines, less accessible. Studies revealed that children both in urban slums and non-slum areas were often only partially vaccinated, with barriers including hidden costs like having to buy immunisation cards, funds for transport to health facilities, lack of awareness about vaccination schedules and service delivery issues like vaccine stockouts and long wait times.

Conclusion: The slow recovery of vaccination coverage after COVID-19 comes down to a mix of ongoing challenges. The pandemic's continued strain, especially with new variants coming up, has shifted resources and attention to COVID-19 vaccines, leaving routine vaccinations struggling. On top of that, vaccine hesitancy that increased during the pandemic period—driven by misinformation and mistrust—has made people more skeptical of all vaccines, not just COVID-19 related ones. For the urban poor, the loss of income and slow economic recovery due to the pandemic has made it even harder to access healthcare because of hidden costs associated with vaccination services, worsening existing inequalities. All these factors—along with issues like lack of awareness, and poor health education—are slowing down the return to pre-pandemic vaccination levels in Uganda.

How this Rapid Response was prepared

After clarifying the question being asked, we searched for systematic reviews, local or national evidence from Uganda, and other relevant research.

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Background

The COVID-19 pandemic significantly disrupted the delivery of health services globally, including routine immunization services, leading to a substantial decline in vaccination coverage (1). In 2021, 25 million children missed routine vaccinations, the highest number in nearly two decades (2). The impact of the pandemic on vaccination services varied across countries and regions, with some experiencing persistent shortfalls in service volume for BCG, DPT1, and DPT3 vaccines (3). In Uganda particularly, urban areas like Kampala face unique challenges, with only 41.4% of children fully vaccinated. This has been attributed to inadequate information, vaccine stock-outs, and hidden costs of vaccination (4).

Recent routine data from the Uganda District Health Information System (DHIS2) shows that nationwide, all childhood vaccination coverage stands at 85% (DHIS2 2023), which is way below pre-pandemic levels of greater than 90% (DHIS2 2019). This trend is worrying, as the data reveal pockets of partially vaccinated children as well as those who have never been vaccinated before. This increase in partially vaccinated and unvaccinated children erodes population immunity and increases susceptibility to vaccine preventable diseases, as exemplified by the recent outbreaks of measles and poliovirus in Uganda.

The Ministry of Health (MOH) expanded program on immunisation ensures the availability of routine immunisation services through both static and outreach programs. The outreach model increases access for those communities that are far from health facilities. As recognised in the national immunisation strategy (2024-2028), physical impediments to immunisation service locations, sociocultural barriers, and knowledge gaps are some of the factors preventing people from using and accessing immunisation services. Peri-urban and impoverished communities, affluent gated communities, island communities, hilly regions, sparsely inhabited places, insecure communities, and migrant communities are most affected. Furthermore, during epidemics and outbreaks, these barriers impact the use and accessibility of vaccination for all target populations, including adult vaccination (5).

Thus, the slow recovery of vaccination coverage prompted the assistant commissioner for the division of health information to contact ACRES to support him in characterising the problem of low vaccine coverage, specifically in the peri-urban settings of Kampala and Wakiso.

Rapid Response question: Why vaccine coverage, which dropped during the COVID-19 pandemic, is not recovering, particularly in Kampala and Wakiso?

Summary of findings

The global health landscape has undergone a significant transformation following the COVID-19 pandemic, with a notable consequence being the slow recovery of vaccine coverage across various regions. This brief summarizes the evidence on the key factors contributing to the drop in vaccine coverage during the COVID-19 pandemic and the slow recovery to pre-pandemic levels:

i) Continued strain of the pandemic
ii) Vaccine hesitancy due to distrust and the spread of misinformation
iii) Dynamics in urban settings

Continued strain of the pandemic

The ongoing COVID-19 variants and the continued strain on resources of the pandemic manifested through the continuous evolution of COVID-19 variants has necessitated ongoing surveillance, research and development efforts to create vaccines that provide effective protection against emerging COVID-19 strains (6). This means that funds are being reallocated and shifted to support the research and development of COVID-19 vaccines, which strains the delivery of other routine vaccines.

Vaccine hesitancy due to distrust and the spread of misinformation

The COVID-19 pandemic fueled a surge in misinformation and conspiracy theories surrounding vaccines. The rapid development and deployment of COVID-19 vaccines raised concerns about their safety and efficacy, leading to increased vaccine hesitancy (7-9). The pandemic exposed existing vulnerabilities in public trust in healthcare institutions. A lack of consistent messaging and perceived conflicting guidance from health authorities contributed to a decline in confidence in vaccination programs (10). This was worsened for instance, in Uganda, by the requirement for written consent before receiving the COVID-19 vaccine, showing that public institutions did not want to be accountable for the adverse effects of rapidly developed vaccines (8). This decline in confidence in COVID-19 vaccines has had a spillover effect on other routine vaccinations and has made it harder to reach immunization goals for other vaccine preventable diseases. This is being manifested by parental refusal to take their children for immunization even when provided with information on the benefits of vaccination (11).

Dynamics in urban settings

The economic downturn from the pandemic disproportionately affected vulnerable populations, specifically the urban poor leading to increased poverty and unemployment. These economic hardships made it difficult for families to afford healthcare services, including vaccines, further exacerbating existing health inequalities. Loss in income also led to forgoing access to healthcare services, including immunization programs, particularly among the urban poor. The lack of affordable healthcare and transportation options contributed to lower vaccination rates among vulnerable communities (12).

A study conducted in Kampala showed that more than half of the included children were partially vaccinated, and 1% had not received any vaccinations. Fully immunized children were more likely to live in high-income households than partially immunized children. Most parents reported that they had missed some or all the recommended immunizations because they were unaware of the timing of the next shot. Men in the slums participated in a focus group discussion and noted that health staff stress the importance of follow-up appointments but do not explain the vaccines they have received or their advantages. Long wait times at medical facilities, vaccine stock-outs at the facilities, and unanticipated vaccination-related expenditures like buying cards were other frequent barriers given for not getting vaccinated. The study found that living in slums or non-slum areas did not preclude being partially vaccinated (4). Thus, living in an urban or peri-urban area does not always grant access to health services that permit on-time vaccination, and the hidden costs of vaccination exacerbate inequities in accessing immunization for the urban poor.

Conversely, a study conducted in Lira City found that having fully immunised children was associated with knowledge of when to start vaccination, knowledge about the number of visits needed to complete a child's vaccination, and a lack of fear of vaccine side effects. The predictors of adherence to routine immunisation schedule were flexible clinical hours, maternal expectations of the benefits of immunisation, and maternal knowledge of immunisation schedules (13).

A study comparing immunization coverage in a rural district and urban slums revealed a low full immunisation status among both rural and urban slum children. This was attributed to the child's residence and the parents' occupation. Lack of health education and poor access to messages on immunisation (inadequate access to mass media) were other contributing factors (14). Educational messages on the importance of immunisation targeting these underserved populations will improve full immunisation coverage

A study conducted two years after the pandemic in 12 sub-Saharan countries, including Uganda, found that older mothers, lower mothers' education, children being older (> 2 years), having children with chronic illnesses, having difficulty accessing healthcare facilities, having low perceived risk for infectious diseases and that disease severity would not worsen among non-vaccinated children, perceiving vaccines as unnecessary, and needless for breastfed babies and when the provision of vaccine information did not motivate parents to vaccinate their children all increased the likelihood of non-vaccination. Only believing that vaccines were safe for children decreased the odds of non-vaccination (11).

A qualitative analysis of the socio-behavioral complexities of childhood vaccination in urban poor settlements in Kenya found that various social, behavioral, cultural, and contextual factors influence caregiver vaccination decisions in urban poor settings. Attitude factors such as perceived vaccine benefits, cultural beliefs, and emotional factors including parental love and subjective norms, like fear of social judgment, and perceived behavioral control factors, such as self-control and gender-based influences, affect uptake of vaccination. The cost of vaccinations and the attitudes of healthcare professionals are two more practical factors that had an impact on vaccination uptake (15).

Conclusions

The slow recovery of vaccination coverage following the COVID-19 pandemic can be attributed to a number of intertwined factors. The continued strain of the pandemic, driven by ongoing COVID-19 variants, has diverted resources and focus towards COVID-19 vaccine research and development, reducing attention to routine immunizations. Vaccine hesitancy, fueled by mistrust and misinformation during the COVID-19 pandemic, further undermined public confidence, creating spillover effects that have extended to routine vaccines. Additionally, the economic impact of the pandemic has disproportionately affected the urban poor, exacerbating existing health inequities by limiting access to healthcare services, including vaccination. These factors, combined with other issues such as poor information and communication, hidden costs, and inadequate health education, have collectively hindered recovery to pre-pandemic vaccination coverage levels in Uganda.

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What is Rapid Response?

Rapid Responses address the needs of policymakers and managers for research evidence that has been appraised and contextualised in a matter of hours or days, if it is going to be of value to them. The Responses address questions about arrangements for organising, financing and governing systems, and strategies for implementing changes.

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Conflicts of interest
None known.

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