

VACCINE DELIVERY RESEARCH DIGEST

UNIVERSITY OF WASHINGTON STRATEGIC ANALYSIS,
RESEARCH & TRAINING (START) CENTER

REPORT TO THE GATES FOUNDATION

PRODUCED BY: SUTTON, A. & SHARMA, M.

AUGUST 2024

Want the Vaccine Delivery Research Digest delivered directly to your inbox?

Subscribe on the Digest website: <http://uwstartcenter.org/publication-digests/vaccine-digest>

List of Articles

- 1 Countering vaccine misinformation: Designing a learning resource for healthcare workers in eight countries.
{[Abstract & START Commentary](#)} {[Full Article](#)}
 - A training program aimed at enhancing the skills and confidence of healthcare workers in recognizing and effectively responding to vaccine misinformation is described.
- 2 Ethiopia National Cholera Elimination Plan 2022-2028: Experiences, Challenges, and the Way Forward.
{[Abstract & START Commentary](#)} {[Full Article](#)}
 - Challenges encountered when implementing Ethiopia's National Cholera Elimination Plan are explored.
- 3 Coverage of Two-Dose Preemptive Cholera Mass Vaccination Campaign in High-Priority Hotspots in Shashemene, Oromia Region, Ethiopia.
{[Abstract & START Commentary](#)} {[Full Article](#)}
 - High 2-dose cholera vaccine coverage was achieved in mass vaccination campaigns in high-priority areas of Ethiopia.
- 4 Typhoid conjugate vaccine perceptions and coverage among children and adults: Findings from a post-campaign coverage survey - Harare, Zimbabwe, 2019.
{[Abstract & START Commentary](#)} {[Full Article](#)}
 - Typhoid conjugate vaccination coverage was evaluated after a vaccination campaign in nine high-risk suburbs of Harare.
- 5 Addressing the re-emergence and resurgence of vaccine-preventable diseases in Africa: A health equity perspective.
{[Abstract & START Commentary](#)} {[Full Article](#)}
 - The reemergence of vaccine-preventable diseases in Africa is highlighted and recommendations for meeting challenges are provided.
- 6 SMS-based interventions for improving child and adolescent vaccine coverage and timeliness: a systematic review.
{[Abstract & START Commentary](#)} {[Full Article](#)}

- The impact of short message service (SMS)-based interventions on childhood and adolescent vaccine coverage and timeliness was assessed through a systematic review of randomized controlled trials.
- 7 A systematic review of interventions to promote human papillomavirus (HPV) vaccination in Africa.
{[Abstract & START Commentary](#)} {[Full Article](#)}
- This systematic review assessed the scope and effectiveness of interventions to improve human papilloma virus (HPV) vaccine uptake in Africa from 2006 to 2021.
- 8 Determinants and prevalence of zero-dose children in Somalia: Analysis of the 2020 Health Demographic Survey data.
{[Abstract & START Commentary](#)} {[Full Article](#)}
- Variables related to socio-demographic, household, health seeking, and community level factors were extracted from the SHDS data to explore associations with zero-dose status among Somali children aged 12-23 months.
- 9 Do pregnant persons want influenza vaccines? Knowledge, attitudes, perceptions, and practices toward influenza vaccines in 8 low- and middle-income countries.
{[Abstract & START Commentary](#)} {[Full Article](#)}
- Data from cross-sectional surveys assessed pregnant persons' attitudes toward seasonal influenza vaccines.
- 10 Assessing population-level target product profiles of universal human influenza A vaccines.
{[Abstract & START Commentary](#)} {[Full Article](#)}
- Authors found that interplay of natural and vaccine-induced immunity could strongly affect seasonal influenza subtype dynamics.
- 11 A World without Measles and Rubella: Addressing the Challenge of Vaccine Hesitancy.
{[Abstract & START Commentary](#)} {[Full Article](#)}
- An overview of evidence-based strategies for addressing vaccine hesitancy in the context of global measles and rubella vaccination challenges is provided.
- 12 Barriers and facilitators to vaccination in Latin America: a thematic synthesis of qualitative studies.
{[Abstract & START Commentary](#)} {[Full Article](#)}

- This systematic review and thematic synthesis of qualitative studies described barriers and facilitators to vaccination in Latin America.

13 Social norms, vaccine confidence, and interpersonal communication as predictors of vaccination intentions: Findings from slum areas in Varanasi, India.

[{Abstract & START Commentary}](#) [{Full Article}](#)

- Interactions between social norms, vaccine confidence, and interpersonal communication in relation to vaccine intentions among caregivers of infants living in six slum areas in Varanasi, India were explored.

14 A designathon to co-create HPV screening and vaccination approaches for mothers and daughters in Nigeria: findings from a community-led participatory event.

[{Abstract & START Commentary}](#) [{Full Article}](#)

- Community-led, innovative approaches to promote HPV screening and vaccination for women and girls in Nigeria were generated through crowdsourcing ideas from mother-daughter dyads.

15 The second annual Vaccination Acceptance Research Network Conference (VARN2023): Shifting the immunization narrative to center equity and community expertise.

[{Abstract & START Commentary}](#) [{Full Article}](#)

- This overview of insights from the Vaccination Acceptance Research Network's 2nd annual conference provides examples of effective approaches that increase vaccine acceptance.

[Appendix](#)

Details of Articles

1. [Countering vaccine misinformation: Designing a learning resource for healthcare workers in eight countries.](#)

Miller E, Michel A, Singh P, Limaye R.

Vaccine. 2024 Jul 13.

PubMed ID: 38997850

ABSTRACT

In response to the pervasive challenges posed by online health misinformation, our objective was to develop a training program aimed at enhancing the skills and confidence of healthcare workers in recognizing and effectively responding to misinformation, with a particular focus on vaccinations. This article discusses the design of a training program aimed at equipping healthcare workers with the skills to combat health misinformation, offering theoretical foundations for integrating evidence-based strategies into problem-based learning to help learners retain and apply information, and also shares examples and insights gained from its application across diverse learner groups. The training curriculum integrates evidence-based misinformation intervention strategies, learner engagement strategies and draws from authentic scenarios across diverse cultural contexts. The trainings were administered from January through July 2023 to 287 participants across eight countries (Cameroon, Guyana, India, Kenya, Mozambique, Nigeria, Philippines, and the United States) in English, French, Spanish, and Portuguese. Throughout the implementation of the training, a key emphasis was placed on a learner-driven approach that fostered real-world application. Participants engaged in role-playing exercises and problem-solving sessions, enabling them to practice their newfound skills in a controlled setting. Our findings contribute to the literature of participatory, problem-based learning for healthcare professionals and vaccine communication and misinformation response, and can serve as a resource for practitioners implementing similar trainings.

WEB: [10.1016/j.vaccine.2024.06.058](https://doi.org/10.1016/j.vaccine.2024.06.058)

IMPACT FACTOR: 4.5

CITED HALF-LIFE: 7.9

START COMMENTARY

Learning objectives and training modules created for this healthcare worker training are found in Table 1. The training consists of four modules, 1) recognizing misinformation, 2) how to debunk misinformation, 3) vaccine science basics including how to explain basic immunology and how to respond to common patient questions/concerns, and 4) understanding and addressing vaccine

hesitancy . The problem-based learning framework used to develop the training is described in Table 3. Trainee feedback suggested use of examples tailored to challenges faced in local communities, an area for future curriculum modification.

[Return to List of Articles](#)

2. [Ethiopia National Cholera Elimination Plan 2022-2028: Experiences, Challenges, and the Way Forward.](#)

Hussen M, Worku Demlie Y, Edosa M, Kebede M, Wossen M, Mulugeta Chane A, et al.

Clin Infect Dis. 2024 Jul 12;79(Supplement_1):S1-S7.

PubMed ID: 38996038

ABSTRACT

Cholera remains a significant public health concern in Ethiopia. More than 15.9 million Ethiopians, constituting 15% of the total population, live in areas with a history of recurrent cholera outbreaks. The last 9 years of national cholera surveillance data show the country has been experiencing cholera outbreaks every year. The current cholera outbreak, starting in August 2022, has affected the entire country, with 841 reported cases and a 3.13% case fatality rate (CFR) in 2022, and >30 000 cases with nearly a 1.4% CFR in 2023. In line with “Ending Cholera-A Global Roadmap to 2030,” the government of Ethiopia is committed to eliminate cholera in the country and has prepared its “National Cholera Elimination Plan (NCP): 2022-2028” with aims to achieve zero local transmission in cholera hotspot areas by 2028 and 90% fatality reduction from the recent (2020-2022) average of 1.8% CFR. The plan is multisectoral, has a clear coordination platform, contains all interventions with in-depth situational analysis, is concordant with existing plans and strategies, and is cascaded at the regional level and implemented with existing government and public structures. Nationwide, total 118 cholera hotspot woredas (districts) were identified, and a comprehensive situation analysis of the existing cholera outbreak response capacity was assessed. This multisectoral and multiyear NCP has forecasted around US\$404 million budget estimates with >90% allocated to improving the country’s water, sanitation, and hygiene (US\$222 million; 55% of total NCP budget) and case management (US\$149 million; 37%). The cholera vaccination strategy included in the NCP exhibited a 5-year oral cholera vaccine (OCV) introduction plan with 2 doses (30 604 889 doses) and single dose (3 031 266 doses) in selected cholera hotspot areas. However, its implementation is challenged due to a lack of financial support, inability to get the requested vaccine for targeted hotspot woredas (due to the current shortage of doses in the OCV global stockpile), recurrent cholera outbreaks, and high humanitarian needs in the country. It is recommended to have a sustainable financial mechanism to support implementation, follow the requested vaccine doses, and reorganize the planned coordination platform to foster the implementation.

WEB: [10.1093/cid/ciae200](https://doi.org/10.1093/cid/ciae200)

IMPACT FACTOR: 8.2

CITED HALF-LIFE: 6.9

START COMMENTARY

The preemptive use of oral cholera vaccine (OCV) in cholera hotspots is an integral part of Ethiopia's 5-year National Cholera Elimination Plan (NCP), but doses initially allocated for use in these areas were instead redistributed to 15 reactive mass vaccination campaigns using a single-dose strategy in response to cholera outbreaks within the country. Additional vaccines have not been procured due to global shortages and the high demand for OCV doses for use in outbreak settings and timeline for availability is unknown. The plan for preemptive vaccination has been delayed, potentially requiring an adjustment to the NCP.

[Return to List of Articles](#)

3. [Coverage of Two-Dose Preemptive Cholera Mass Vaccination Campaign in High-Priority Hotspots in Shashemene, Oromia Region, Ethiopia.](#)

Park S, Gedefaw A, Hailu D, Jeon Y, Mogeni O, Jang G, et al.

Clin Infect Dis. 2024 Jul 12;79(Supplement_1):S33-S42.

PubMed ID: 38996035

ABSTRACT

BACKGROUND: Cholera is a public health priority in Ethiopia. The Ethiopian National Cholera Plan elaborates a multi-year scheme of oral cholera vaccine (OCV) use. Aligned with this, a preemptive OCV campaign was conducted under our Ethiopia Cholera Control and Prevention project. Here, we present the OCV vaccination outcomes.

METHOD: Cholera high-priority hotspots in the Oromia Region, Shashemene Town (ST) and Shashemene Woreda (SW), were selected. Four kebelles (Abosto, Alelu, Arada, and Awasho) in ST and 4 clusters (Faji Gole, Harabate, Toga, and Chabi) in SW were study sites with OCV areas nested within. A total of 40 000 and 60 000 people in ST and SW, respectively, were targeted for a 2-dose OCV (Euvichol-Plus) campaign in 11-15 May (first round [R1]) and 27-31 May (second round [R2]) 2022. Daily administrative OCV coverage and a coverage survey in 277 randomly selected households were conducted.

RESULTS: The administrative OCV coverage was high: 102.0% for R1 and 100.5% for R2 in ST and 99.1% (R1) and 100.0% (R1) in SW. The coverage survey showed 78.0% (95% confidence interval [CI]: 73.1-82.9) of household members with 2-dose OCV and 16.8% (95% CI: 12.4-21.3) with no OCV in ST; and 83.1% (95% CI: 79.6-86.5) with 2-dose OCV and 11.8% (95% CI: 8.8-14.8) with no OCV in SW. The 2-dose coverages in 1-4-, 5-14-, and ≥ 15 -year age groups were 88.3% (95% CI: 70.6-96.1), 88.9% (95% CI: 82.1-95.7), and 71.3% (95% CI: 64.2-78.3), respectively, in ST and 78.2% (95% CI: 68.8-87.7), 91.0% (95% CI: 86.6-95.3), and 78.7% (95% CI: 73.2-84.1) in SW.

CONCLUSIONS: High 2-dose OCV coverage was achieved. Cholera surveillance is needed to assess the vaccine impact and effectiveness.

WEB: [10.1093/cid/ciae233](https://doi.org/10.1093/cid/ciae233)

IMPACT FACTOR: 8.2

CITED HALF-LIFE: 6.9

START COMMENTARY

In both high-priority areas, health workers were the primary source of information for community members and a vital link between community and the oral cholera vaccine (OCV) campaign;

community leaders were also key in vaccine education. Vaccine uptake was high across age groups (71-88%). Among those who did not receive the vaccine, the most commonly cited reason was lack of availability due to work responsibilities during the campaign. Vaccination was provided at both fixed sites via mobile outreach teams which contributed to the high coverage achieved.

[Return to List of Articles](#)

4. [Typhoid conjugate vaccine perceptions and coverage among children and adults: Findings from a post-campaign coverage survey - Harare, Zimbabwe, 2019.](#)

Gharpure R, Longley A, Takamiya M, Hidle A, Munyanyi M, Chawurura T, et al.

Vaccine. 2024 Jul 11.

PubMed ID: 38991917

ABSTRACT

BACKGROUND: In 2019, following a large outbreak of typhoid fever, the Zimbabwe Ministry of Health and Child Care conducted a typhoid conjugate vaccine (TCV) vaccination campaign in nine high-risk suburbs of Harare. We aimed to evaluate TCV vaccination coverage, vaccine perceptions, and adverse events reported after vaccination.

METHODS: We conducted a two-stage cluster survey to estimate vaccination coverage in the campaign target areas among children aged 6 months-15 years and to classify coverage as either adequate ($\geq 75\%$ coverage) or inadequate ($< 75\%$ coverage) among adults aged 16-45 years in one suburb. Questionnaires assessed socio-demographic factors, TCV vaccination history, reasons for receiving or not receiving TCV, adverse events following immunization, and knowledge and attitudes regarding typhoid and TCV.

RESULTS: A total of 1,917 children from 951 households and 298 adults from 135 households enrolled in the survey. Weighted TCV coverage among all children aged 6 months-15 years was 85.3 % (95 % CI: 82.1 %-88.0 %); coverage was 74.8 % (95 % CI: 69.4 %-79.5 %) among children aged 6 months-4 years and 89.3 % (95 % CI: 86.2 %-91.7 %) among children aged 5-15 years. Among adults, TCV coverage was classified as inadequate with a 95 % confidence interval of 55.0 %-73.1 %. Among vaccinated persons, the most reported reason for receiving TCV (96 % across all age groups) was protection from typhoid fever; the most common reasons for non-vaccination were not being in Harare during the vaccination campaign and not being aware of the campaign. Adverse events were infrequently reported in all age groups (10 %) and no serious events were reported.

CONCLUSIONS: The 2019 TCV campaign achieved high coverage among school-aged children (5-15 years). Strategies to increase vaccination coverage should be explored for younger children as part of Zimbabwe's integration of TCV into the routine immunization program, and for adults during future post-outbreak campaigns.

WEB: [10.1016/j.vaccine.2024.06.053](https://doi.org/10.1016/j.vaccine.2024.06.053)

IMPACT FACTOR: 4.5

CITED HALF-LIFE: 7.9

START COMMENTARY

Nearly 90% of children aged 5-15 years received their typhoid conjugate vaccine (TCV) at schools in nine high-risk Harare suburbs suggesting that school-based settings for vaccines were highly effective for this age group. Among children younger than 5 years, 23% were vaccinated at schools, 23% were vaccinated at health facilities, and 22% were vaccinated at shopping centers. Adult vaccine locations also varied, including the street, schools, health facilities and markets. As one of the most frequently cited reasons for not receiving TCV was not being aware of the campaign, targeted messaging with location details may increase TCV coverage. The most frequently reported source of information about the vaccination campaign was community mobilizers, followed by the vaccination team, television or radio, and posters or flyers. More than 80% of households with children who were surveyed were aware of the campaign.

[Return to List of Articles](#)

5. [Addressing the re-emergence and resurgence of vaccine-preventable diseases in Africa: A health equity perspective.](#)

Lubanga A, Bwanali A, Kangoma M, Matola Y, Moyo C, Kaonga B, et al.

Hum Vaccin Immunother. 2024 Jul 10;20(1):2375081.

PubMed ID: 38982713

ABSTRACT

Vaccination is one of the greatest public health achievements of the 20th century, with a tremendous impact in the prevention and control of diseases. However, the recent reemergence of vaccine-preventable diseases calls for a need to evaluate current vaccination practices and disparities in vaccination between high-income countries and low-and-middle-income countries. There are massive deficits in vaccine availability and coverage in resource-constrained settings. Therefore, this perspective seeks to highlight the reemergence of vaccine-preventable diseases in Africa within the lens of health equity and offer recommendations on how the continent should be prepared to deal with the myriad of its health systems challenges. Among the notable factors contributing to the reemergence, stand health inequities affecting vaccine availability and the dynamic vaccine hesitancy. Strengthening health systems and addressing health inequities could prove useful in halting the reemergence of vaccine-preventable diseases.

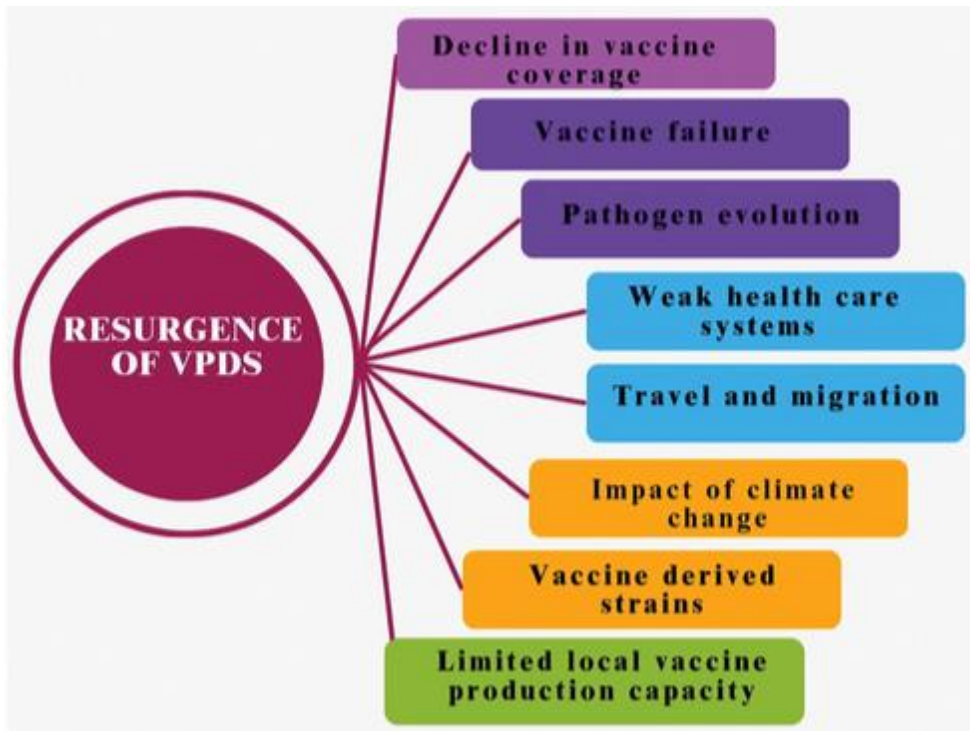
WEB: [10.1080/21645515.2024.2375081](https://doi.org/10.1080/21645515.2024.2375081)

IMPACT FACTOR: 4.1

CITED HALF-LIFE: 4.1

START COMMENTARY

Figure 1 (below) summarizes factors contributing to the reemergence and resurgence of vaccine-preventable diseases in the World Health Organization's African Region, identifying some of the factors involved. Authors highlight the importance of having robust and effective disease surveillance systems for vaccine-preventable diseases to swiftly identify and respond to outbreaks. They point to the major delays in acquisition and distribution of essential vaccines in Africa exacerbated by the COVID-19 pandemic and suggest boosting vaccine manufacturing capacity to Africa address this issue.



[Return to List of Articles](#)

6. [SMS-based interventions for improving child and adolescent vaccine coverage and timeliness: a systematic review.](#)

Currie G, McLeod C, Waddington C, Snelling T.

BMC Public Health. 2024 Jul 03;24(1):1753.

PubMed ID: 38956527

ABSTRACT

BACKGROUND: The aim of this review was to investigate the impact of short message service (SMS)-based interventions on childhood and adolescent vaccine coverage and timeliness.

METHODS: A pre-defined search strategy was used to identify all relevant publications up until July 2022 from electronic databases. Reports of randomised trials written in English and involving children and adolescents less than 18 years old were included. The review was conducted in accordance with PRISMA guidelines.

RESULTS: Thirty randomised trials were identified. Most trials were conducted in high-income countries. There was marked heterogeneity between studies. SMS-based interventions were associated with small to moderate improvements in vaccine coverage and timeliness compared to no SMS reminder. Reminders with embedded education or which were combined with monetary incentives performed better than simple reminders in some settings.

CONCLUSION: Some SMS-based interventions appear effective for improving child vaccine coverage and timeliness in some settings. Future studies should focus on identifying which features of SMS-based strategies, including the message content and timing, are determinants of effectiveness.

WEB: [10.1186/s12889-024-18900-4](https://doi.org/10.1186/s12889-024-18900-4)

IMPACT FACTOR: 3.5

CITED HALF-LIFE: 5.4

START COMMENTARY

Overall, 11 trials were identified that were conducted in low-middle income countries: Nigeria, Kenya, India, Guatemala, Pakistan, and Zimbabwe. Eight of these trials reported higher vaccine coverage among children of parents who received reminders via text messages by short message service (SMS). Two studies found no evidence of improved coverage based on SMS reminders alone but did find a small effect when reminders were paired with incentives like small monetary

sums or phone credits. Of five trials that assessed SMS-based interventions and timeliness of vaccination in low-income countries, all found evidence of improved timeliness in those receiving SMS-based reminders.

[Return to List of Articles](#)

7. [A systematic review of interventions to promote human papillomavirus \(HPV\) vaccination in Africa.](#)

Olaoye O, Macdonald S.

Public Health. 2024 Jul 02;234:47-57.

PubMed ID: 38954882

ABSTRACT

OBJECTIVE: We conducted a systematic review to assess the scope and effectiveness of interventions to improve human papilloma virus (HPV) vaccination in Africa from 2006 to 2021.

STUDY DESIGN: Systematic review.

METHODS: Four databases (Medline, Embase, CINAHL and PsycINFO) were searched for articles published between 2006 and 2021. Articles were screened and included based on eligibility criteria using DistillerSR (Version 2.35). Data were extracted and reported using a narrative synthesis. A quality assessment was also conducted for each study using validated quality appraisal tools.

RESULTS: Out of 7603 articles identified by a systematic search, 18 articles met the inclusion criteria. Included studies comprised impact evaluation and cross-sectional studies published between 2012 and 2021 and conducted in eight African countries namely: Nigeria, Cameroon, South Africa, Kenya, Tanzania, Zambia, Mali, and Malawi. Study quality ranged from high to low quality. Interventions comprised fifteen educational and three multicomponent interventions. Out of thirteen impact evaluation studies (all educational interventions), twelve studies were effective in increasing HPV vaccine uptake and/or improving participants' knowledge, attitudes, and perceptions about the vaccine. Across five cross-sectional studies (two educational and three multicomponent interventions), HPV vaccine uptake rates ranged from 34% to 93.3%, with a consensus on safety and effectiveness in 67.9%-90.3% of participants post-intervention.

CONCLUSION: Educational and multicomponent interventions have been implemented to improve HPV vaccination in Africa. While educational interventions have proven effective at improving HPV vaccine uptake, a more diverse range of interventions with robust impact evaluation study designs are needed to strengthen the available evidence and improve vaccine uptake.

WEB: [10.1016/j.puhe.2024.05.015](https://doi.org/10.1016/j.puhe.2024.05.015)

IMPACT FACTOR: 3.9

CITED HALF-LIFE: 5.2

START COMMENTARY

Educational interventions in the included studies varied, with some using printed materials such as factsheets and pamphlets while others involved home visits, film screenings, and training seminars. Authors identified no pattern between countries, study settings and intervention effectiveness, although almost all interventions reported that interventions were effective. Quality of studies was rated using established quality assessment tools, and most studies were rated as moderate, with only two rated as high and four as low, highlighting the need for further rigorous studies.

[Return to List of Articles](#)

8. [Determinants and prevalence of zero-dose children in Somalia: Analysis of the 2020 Health Demographic Survey data.](#)

Mohamoud S, Ali-Salad M, Bile A, Singh N, Mahmud A, Nor B.

PLOS Glob Public Health. 2024 Jul 05;4(7):e0002612.

PubMed ID: 38954718

ABSTRACT

Despite global progress in childhood vaccination coverage, fragile and humanitarian countries, with high burden of infectious diseases, continue to report a significant number of zero-dose and under-vaccinated children. Efforts to equitably reach zero-dose children remain thus critical. This study assesses the prevalence and determinants of zero-dose children in fragile context of Somalia. We used secondary data from 2020 Somali Health and Demographic Survey (SHDS) to determine status of unvaccinated children aged between 12 to 23 months. Variables related to socio-demographic, household, health seeking, and community level factors were extracted from the SHDS data. Variables that were shown to be significantly associated with zero-dose children at $p < 0.05$ in the single logistic regression analysis were identified and included in a final multiple logistic regression analysis. A total of 2,304 women and their children aged between 12-23 months were used to determine the prevalence and determinants of zero dose children in Somalia. Approximately 60.2% of the children were zero dose children and did not receive any dose of the four basic routine vaccines. Children living in rural and nomadic areas were more likely to be zero dose (aOR 1.515, 95% CI: 1.189-1.93). Mother with primary education and above (aOR 0.519, 95% CI: 0.371-0.725), those who attended antenatal care (aOR 0.161, 95% CI: 0.124-0.209) and postnatal care (aOR 0.145, 95% CI: 0.085-0.245) and listen frequently to radio (aOR 2.212, 95% CI: 1.106-4.424) were less likely to have children with zero dose than with their counterparts. Majority of children under two years of age in Somalia are reported to be zero dose children. Context and population specific interventions that target vulnerable mothers and their children, in rural and nomadic areas, and from lower wealth quintile index families with no education and adequate access to antenatal and postnatal care remain critical.

WEB: [10.1371/journal.pgph.0002612](https://doi.org/10.1371/journal.pgph.0002612)

IMPACT FACTOR: N/A

CITED HALF-LIFE: N/A

START COMMENTARY

Nearly one-third of zero-dose children, defined as children aged 12-23 months having received no doses of any of the four basic routine vaccines (BCG, Polio, DPT, Measles), were from the lowest wealth quintile in this Somali study. Distance to health facility was a barrier for over 60% of identified women with zero-dose children, and only 27% had received any antenatal care at a clinic. More than 73% of zero-dose children lived in rural or nomadic settings. Findings provide evidence for the need for targeted vaccination strategies to reach these populations.

[Return to List of Articles](#)

9. [Do pregnant persons want influenza vaccines? Knowledge, attitudes, perceptions, and practices toward influenza vaccines in 8 low- and middle-income countries.](#)

McCarron M, Yau T, Griffin C, Marcenac P, Ebama M, Lafond K, et al.

J Infect Dis. 2024 Jul 02.

PubMed ID: 38954648

ABSTRACT

BACKGROUND: While vaccination is the most effective way to prevent influenza infection and adverse outcomes, and despite WHO recommendations to vaccinate pregnant persons, access to seasonal influenza vaccines remains low. We explored knowledge, attitudes, and practices of pregnant persons about seasonal influenza vaccines to inform actions to improve vaccine uptake among this priority population.

METHODS: We pooled individual-level data from cross-sectional surveys assessing pregnant persons' attitudes toward seasonal influenza vaccines in eight low- and middle-income countries during 2018-2019. The eight countries used a standard protocol and questionnaire to measure attitudes and intents toward influenza vaccination. We stratified by country-level (presence/absence of a national influenza vaccination program, country income group, geographic region) and individual-level factors.

FINDINGS: Our analysis included 8,556 pregnant persons from eight low- and middle-income countries with and without seasonal influenza vaccination programs. Most pregnant persons (6,323, 74%) were willing to receive influenza vaccine if it was offered for free. Willingness differed by presence of an existing influenza vaccination program; acceptance was higher in countries without influenza vaccination programs (2,383, 89%) than in those with such programs (3,940, 67%, $p < 0.001$).

INTERPRETATION: Most pregnant persons in middle-income countries, regardless of influenza vaccination program status, were willing to be vaccinated against influenza if the vaccine was provided free of charge. National investments in influenza vaccination programs may be well-received by pregnant persons, leading to averted illness both in pregnant persons themselves and in their newborn babies.

FUNDING: US Centers for Disease Control and Prevention.

WEB: [10.1093/infdis/jiae340](https://doi.org/10.1093/infdis/jiae340)

IMPACT FACTOR: 5.0

CITED HALF-LIFE: 9.9

START COMMENTARY

More than 90% of respondents indicated that they would trust information on influenza vaccines from their doctor or medical professional and nearly 70% indicated that they would receive the vaccine during pregnancy if recommended by a doctor. Since 64% did not receive a recommendation to receive the flu vaccine during pregnancy, interventions to increasing doctor recommendations during antenatal medical visits could increase vaccine uptake. Responses indicated that many did not feel comfortable with the amount of information they received regarding safety of influenza vaccine for pregnant persons, so programs that provide information or train medical professionals to provide this information could increase uptake.

[Return to List of Articles](#)

10. [Assessing population-level target product profiles of universal human influenza A vaccines.](#)

Yang Q, Park S, Saad-Roy C, Ahmad I, Viboud C, Arinaminpathy N, et al.

Epidemics. 2024 Jun 29;48:100776.

PubMed ID: 38944025

ABSTRACT

Influenza A has two hemagglutinin groups, with stronger cross-immunity to reinfection within than between groups. Here, we explore the implications of this heterogeneity for proposed cross-protective influenza vaccines that may offer broad, but not universal, protection. While the development goal for the breadth of human influenza A vaccine is to provide cross-group protection, vaccines in current development stages may provide better protection against target groups than non-target groups. To evaluate vaccine formulation and strategies, we propose a novel perspective: a vaccine population-level target product profile (PTPP). Under this perspective, we use dynamical models to quantify the epidemiological impacts of future influenza A vaccines as a function of their properties. Our results show that the interplay of natural and vaccine-induced immunity could strongly affect seasonal subtype dynamics. A broadly protective bivalent vaccine could lower the incidence of both groups and achieve elimination with sufficient vaccination coverage. However, a univalent vaccine at low vaccination rates could permit a resurgence of the non-target group when the vaccine provides weaker immunity than natural infection. Moreover, as a proxy for pandemic simulation, we analyze the invasion of a variant that evades natural immunity. We find that a future vaccine providing sufficiently broad and long-lived cross-group protection at a sufficiently high vaccination rate, could prevent pandemic emergence and lower the pandemic burden. This study highlights that as well as effectiveness, breadth and duration should be considered in epidemiologically informed TPPs for future human influenza A vaccines.

WEB: [10.1016/j.epidem.2024.100776](https://doi.org/10.1016/j.epidem.2024.100776)

IMPACT FACTOR: 3.0

CITED HALF-LIFE: 4.5

START COMMENTARY

Important vaccine characteristics for population-level target product profile are breadth, strength, duration of protection, immunity type, dose regimen, vaccination rate, vaccine acceptability, interaction of vaccine immunity with prior immunity, and evolutionary impacts on seasonal influenza viruses (Table 1). For influenza A, preferred vaccines would provide coverage for all groups (breadth), protection as strong as infection-induced immunity (strength), immunity duration no shorter than infection-induced immunity (duration), and would reduce susceptibility rather than

reducing infectiousness (immunity type). Additionally, an annual dosing regimen with high acceptability and high vaccination rates would be preferred.

[Return to List of Articles](#)

11. [A World without Measles and Rubella: Addressing the Challenge of Vaccine Hesitancy.](#)

Higgins D, O'Leary S.

Vaccines (Basel). 2024 Jun 29;12(6).

PubMed ID: 38932423

ABSTRACT

The worldwide elimination of measles and rubella is feasible, but not without overcoming the substantial challenge of vaccine hesitancy. This challenge is complicated by the spread of misinformation and disinformation fueled by rapidly progressing technologies and evolving forms of online communication. The recent COVID-19 pandemic has only added further complexity to this challenge. However, considerable progress has been made in understanding the scope of the problem and the complex factors that influence vaccine hesitancy. Our understanding of evidence-based strategies for addressing vaccine hesitancy has grown significantly, including evidence for effective communication and behavioral interventions. In this article, we review measles and rubella vaccines and vaccine hesitancy. We then provide an overview of evidence-based strategies for addressing vaccine hesitancy, including communication strategies and behavioral interventions. This article is relevant to healthcare professionals, health system leaders, public health professionals, policymakers, community leaders, and any individuals who have a role in addressing vaccine hesitancy in their communities. Finally, we review future directions and major areas of research need.

WEB: [10.3390/vaccines12060694](https://doi.org/10.3390/vaccines12060694)

IMPACT FACTOR: 5.2

CITED HALF-LIFE: 2.2

START COMMENTARY

Authors provide definitions for vaccine hesitancy, vaccine refusal, vaccine confidence, and vaccine acceptance, and a timeline of vaccine hesitancy events throughout history (Figure 1). Authors include a brief overview of vaccine hesitancy measures, pointing out the need for validated measures that can be used in diverse settings. A key gap described is the lack of standardized surveillance systems to provide timely, actionable information for vaccine hesitancy at the community level.

[Return to List of Articles](#)

12. [Barriers and facilitators to vaccination in Latin America: a thematic synthesis of qualitative studies.](#)

Roberti J, Ini N, Belizan M, Alonso J.

Cad Saude Publica. 2024 Jun 26;40(6):e00165023.

PubMed ID: 38922226

ABSTRACT

Vaccines are often undervalued or underused for a variety of reasons, and vaccine hesitancy is a global challenge that threatens vaccine acceptance and the goals of immunization programs. This review aimed to describe the barriers and facilitators to vaccination in Latin America. The study design was a systematic review and thematic synthesis of qualitative studies reporting on the knowledge or attitudes of adults, parents of children at vaccination age, adolescents and health professionals towards vaccination in Latin America. The databases searched were PubMed, CENTRAL, Scopus, LILACS, SciELO, and CINAHL. A total of 56 studies were included. Facilitators included vaccination being recognized as an effective strategy for preventing infectious diseases and as a requirement for access to social assistance programs, schooling or employment.

Recommendations from health professionals and positive experiences with health services were also identified as facilitators. The main barriers were lack of information or counseling, structural problems such as shortages of vaccines and limited hours of operation, the inability to afford over-the-counter vaccines or transportation to health facilities, certain religious beliefs, misconceptions and safety concerns. Qualitative research can contribute to understanding perceptions and decision-making about vaccination and to designing policies and interventions to increase coverage.

WEB: [10.1590/0102-311XEN165023](https://doi.org/10.1590/0102-311XEN165023)

IMPACT FACTOR: 1.9

CITED HALF-LIFE: 6.6

START COMMENTARY

Health care professionals in included studies reported lack of training related to vaccines, making it difficult for them to provide adequate responses to caregivers with concerns, but this study did not record details about existing or desired trainings. Some reported that they were unaware of vaccination coverage levels in their practice areas. Authors noted that facilitators centered on informed decision-making and reliance on trusted sources of information while barriers were related to difficulties accessing vaccines.

[Return to List of Articles](#)

13. [Social norms, vaccine confidence, and interpersonal communication as predictors of vaccination intentions: Findings from slum areas in Varanasi, India.](#)

Rimal R, Ganjoo R, Jamison A, Parida M, Tharmarajah S.

Vaccine. 2024 Jun 22.

PubMed ID: 38909001

ABSTRACT

In recent years, India has seen significant improvements in childhood immunization, but rates among the urban poor remain stagnant. Disruptions during COVID-19 pandemic have created further challenges. This paper focuses on how social norms, vaccine confidence, and interpersonal communication independently and jointly affect vaccine intentions among caregivers of infants living in six slum areas in Varanasi, India. Data for this study come from the baseline assessments conducted before implementing the Happy Baby Program, an intervention to improve vaccination attitudes and intentions. In-person interviews (N = 2,058) were conducted with caretakers of children up to two years old. Analyses showed that interpersonal communication about vaccines, descriptive norms, injunctive norms, and vaccine confidence were each associated with intentions to vaccinate in both a bivariate and, except for injunctive norms, a multivariate model. In addition, we found significant interactions among these variables, suggesting that the roles of interpersonal communication and vaccine confidence attenuated the relationship between social norms and vaccination intention. Overall, our model explained 46.2 % of the variance in vaccine intention. Given the strengths of the relationships observed in this study, intervention strategies should focus on enhancing social norms and vaccine confidence to promote vaccination.

WEB: [10.1016/j.vaccine.2024.06.006](https://doi.org/10.1016/j.vaccine.2024.06.006)

IMPACT FACTOR: 4.5

CITED HALF-LIFE: 7.9

START COMMENTARY

Authors evaluated how vaccine confidence, descriptive and injunctive social norms, and interpersonal communication about vaccines influence intent to vaccinate among women who were pregnant or who had children younger than 2 years old. Descriptive norms (perception of the prevalence of the behavior in others) were measured through questions about the respondent's perception of the extent to which other caregivers provide vaccines to their infants and young children. Injunctive norms (social pressure to conform) were measured through questions about the extent to which respondents believed other caregivers expect them to vaccinate their child. Vaccine confidence was defined as the extent to which people believe in the efficacy, benefits, and utility of vaccines, and was measured using a previously developed vaccine hesitance scale. Interestingly,

the relationship between either descriptive norms or injunctive norms and intent to vaccinate was highest among those whose interpersonal communication about vaccines was lowest. Only individuals who had access to a smartphone and WhatsApp were included, which may limit generalizability.

[Return to List of Articles](#)

14. [A designathon to co-create HPV screening and vaccination approaches for mothers and daughters in Nigeria: findings from a community-led participatory event.](#)

Kpokiri E, Wapmuk A, Obiezu-Umeh C, Nwaozuru U, Gbaja-Biamila T, Obionu I, et al.

BMC Infect Dis. 2024 Jun 20;24(1):606.

PubMed ID: 3890260738352305

ABSTRACT

BACKGROUND: Oncogenic types of human Papillomavirus (HPV) infection cause substantial morbidity and mortality in Nigeria. Nigeria has low cervical cancer screening and vaccination rates, suggesting the need for community engagement to enhance reach and uptake. We organised a designathon to identify community-led, innovative approaches to promote HPV screening and vaccination for women and girls, respectively, in Nigeria. A designathon is a three-phase participatory process informed by design thinking that includes the preparation phase that includes soliciting innovative ideas from end-users, an intensive collaborative event to co-create intervention components, and follow-up activities.

METHODS: We organised a three-phase designathon for women (30-65yrs) and girls (11-26yrs) in Nigeria. First, we launched a national crowdsourcing open call for ideas on community-driven strategies to support HPV screening among women and vaccination among girls. The open call was promoted widely on social media and at in-person gatherings. All eligible entries were graded by judges and 16 exceptional teams (with 4-6members each). All six geo-political zones of Nigeria were invited to join an in-person event held over three days in Lagos to refine their ideas and present them to a panel of expert judges. The ideas from teams were reviewed and scored based on relevance, feasibility, innovation, potential impact, and mother-daughter team dynamics. We present quantitative data on people who submitted and themes from the textual submissions.

RESULTS: We received a total of 612 submissions to the open call from mother-daughter dyads. Participants submitted ideas via a website designated for the contest (n = 392), in-person (n = 99), email (n = 31), or via an instant messaging application (n = 92). Overall, 470 were eligible for judging after initial screening. The average age of participants for daughters was 19 years and 39 years for mothers. Themes from the top 16 proposals included leveraging local leaders (5/16), faith-based networks (4/16), educational systems (4/16), and other community networks (7/16) to promote awareness of cervical cancer prevention services. After an in-person collaborative event, eight teams were selected to join an innovation training boot camp, for capacity building to implement ideas.

CONCLUSIONS: Innovative strategies are needed to promote HPV screening for mothers and vaccination for girls in Nigeria. Our designathon was able to facilitate Nigerian mother-daughter

teams to develop cervical cancer prevention strategies. Implementation research is needed to assess the effectiveness of these strategies.

WEB: [10.1186/s12879-024-09479-7](https://doi.org/10.1186/s12879-024-09479-7)

IMPACT FACTOR: 3.4

CITED HALF-LIFE: 4.9

START COMMENTARY

After the design phases, eight teams were selected to attend the boot camp and were taught skills to implement their projects within communities. Teams met with experts who provided training in project logistics and implementation science, with topics including budgeting, logistics, storytelling, and research skills. They then spent one week practicing these skills, followed by a second week working within communities to field test their ideas with community partners. Finally, they completed a presentation using practical skills and insights learned during the boot camp.

[Return to List of Articles](#)

15. [The second annual Vaccination Acceptance Research Network Conference \(VARN2023\): Shifting the immunization narrative to center equity and community expertise.](#)

Hopkins K, Lihemo G, Underwood T, Sommers T, Dockery M, Boehman N, et al.

Vaccine. 2024 Jun 19.

PubMed ID: 38897893

ABSTRACT

Promoting vaccine acceptance and demand is an essential, yet often underrecognized component of ensuring that everyone has access to the full benefits of immunization. Convened by the Sabin Vaccine Institute, the Vaccination Acceptance Research Network (VARN) is a global network of multidisciplinary stakeholders driving strengthened vaccination acceptance, demand, and delivery. VARN works to advance and apply social and behavioral science insights, research, and expertise to the challenges and opportunities facing vaccination decision-makers. The second annual VARN conference, *When Communities Lead, Global Immunization Succeeds*, was held June 13-15, 2023, in Bangkok, Thailand. VARN2023 provided a space for the exploration and dissemination of a growing body of evidence, knowledge, and practice for driving action across the vaccination acceptance, demand, and delivery ecosystem. VARN2023 was co-convened by Sabin and UNICEF and co-sponsored by Gavi, the Vaccine Alliance. VARN2023 brought together 231 global, regional, national, sub-national, and community-level representatives from 47 countries. The conference provided a forum to share learnings and solutions from work conducted across 40+ countries. This article is a synthesis of evidence-based insights from the VARN2023 Conference within four key recommendations: (1) Make vaccine equity and inclusion central to programming to improve vaccine confidence, demand, and delivery; (2) Prioritize communities in immunization service delivery through people-centered approaches and tools that amplify community needs to policymakers, build trust, and combat misinformation; (3) Encourage innovative community-centric solutions for improved routine immunization coverage; and (4) Strengthen vaccination across the life course through building vaccine demand, service integration, and improving the immunization service experience. Insights from VARN can be applied to positively impact vaccination acceptance, demand, and uptake around the world.

WEB: [10.1016/j.vaccine.2024.05.075](https://doi.org/10.1016/j.vaccine.2024.05.075)

IMPACT FACTOR: 4.5

CITED HALF-LIFE: 7.9

START COMMENTARY

This overview of insights from the Vaccination Acceptance Research Network's 2nd annual conference contains examples of effective approaches to increase vaccine acceptance. Figure 2 shows key themes and subthemes identified across presentations. One approach that has met with success in multiple settings including Fiji, Vietnam, and parts of Africa is the use of vaccine champions, trusted community members who are trained to confidently provide information about vaccines. The Bingwa Initiative in Africa was highlighted as one such program that empowered youth volunteers to provide accessible and culturally relevant vaccine information to targeted populations.

[Return to List of Articles](#)

Additional Articles of Interest

- 1 Determinants of pneumococcal vaccination dropout among children aged 12-23 months in Ethiopia: a secondary analysis from the 2019 mini demographic and health survey. [{Full Article}](#)
- 2 Comprehensive Review on the Use of Oral Cholera Vaccine (OCV) in Ethiopia: 2019 to 2023. [{Full Article}](#)
- 3 Retention rate of vaccination card and its associated factors among vaccinated children aged 12–23 months in Ethiopia: Multilevel logistic regression analysis. [{Full Article}](#)
- 4 Parents' knowledge and awareness about hepatitis B can influence the vaccination of their children. [{Full Article}](#)
- 5 4CMenB journey to the 10-year anniversary and beyond. [{Full Article}](#)
- 6 Routines, disruptions, revised decisions: A biographical analysis of vaccination trajectories among Filipino caregivers. [{Full Article}](#)
- 7 Enhancing affordability and profit in a non-cooperative, coordinated, hypothetical pediatric vaccine market via sequential optimization. [{Full Article}](#)
- 8 Human papillomavirus vaccination coverage among young women in the three sub-Saharan African countries using Demographic and Health Surveys data. [{Full Article}](#)
- 9 Journey From a Digital Innovation to a Sustainable Health Worker Capacity-Building App in India: Experiences, Challenges, and Lessons Learned. [{Full Article}](#)
- 10 Cost-effective analysis of hepatitis A vaccination in Kerala state, India. [{Full Article}](#)
- 11 Accelerating Global Measles and Rubella Eradication-Saving Millions of Lives, Preventing Disability, and Averting the Next Pandemic. [{Full Article}](#)
- 12 Evolution and Contribution of a Global Partnership against Measles and Rubella, 2001-2023. [{Full Article}](#)
- 13 The Case for Assessing the Drivers of Measles Vaccine Uptake. [{Full Article}](#)
- 14 Vaccination for communicable endemic diseases: optimal allocation of initial and booster vaccine doses. [{Full Article}](#)
- 15 Integrative literature review on human papillomavirus vaccination recommendations in national immunization programs in select areas in the Asia-Pacific region. [{Full Article}](#)
- 16 Rotavirus genotype dynamics in Pakistan: G9 and G12 emerging as dominant strains in vaccinated children (2019). [{Full Article}](#)
- 17 Seroprevalence status of vaccine-preventable diseases in migrants living in shelter centers in Barcelona, Spain. [{Full Article}](#)

Appendix

The literature search for the August 2024 Vaccine Delivery Research Digest was conducted on July 22, 2024. We searched English language articles indexed by the US National Library of Medicine and published between June 15, 2024 and July 14, 2024. The search resulted in 382 items.

SEARCH TERMS

(((((“vaccine”[tiab] OR “vaccines”[tiab] OR “vaccination”[tiab] OR “immunization”[tiab] OR “immunisation”[tiab] OR “vaccines”[MeSH Terms] OR (“vaccination”[MeSH Terms] OR “immunization”[MeSH Terms])) AND (“logistics”[tiab] OR “supply”[tiab] OR “supply chain”[tiab] OR “implementation”[tiab] OR “expenditures”[tiab] OR “financing”[tiab] OR “economics”[tiab] OR “Cost effectiveness”[tiab] OR “coverage”[tiab] OR “attitudes”[tiab] OR “belief”[tiab] OR “beliefs”[tiab] OR “refusal”[tiab] OR “Procurement”[tiab] OR “timeliness”[tiab] OR “systems”[tiab])) OR “vaccine delivery”[tiab] OR “vaccination refusal”[MeSH Terms] OR “immunization programs”[MeSH Terms] OR “zero dose”[tiab] OR “unvaccinated children”[tiab] OR “gavi”[tiab]) NOT (“in vitro”[tiab] OR “immune response”[tiab] OR “gene”[tiab] OR “chemistry”[tiab] OR “genotox”[tiab] OR “sequencing”[tiab] OR “nanoparticle”[tiab] OR “bacteriophage”[tiab] OR “exome”[tiab] OR “exogenous”[tiab] OR “electropor*”[tiab] OR “systems biology”[tiab] OR “animal model”[tiab] OR “cattle”[tiab] OR “sheep”[tiab] OR “goat”[tiab] OR “rat”[tiab] OR “pig”[tiab] OR “mice”[tiab] OR “mouse”[tiab] OR “murine”[tiab] OR “porcine”[tiab] OR “ovine”[tiab] OR “rodent”[tiab] OR “fish”[tiab])) AND “English”[Language] AND 2024/06/15:2024/07/14[Date - Publication]