

Technical Brief

Integration Between Health Campaigns: Intervention Co-delivery and Collaboration

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Key Messages

- Health campaigns are often scheduled, planned, and implemented using vertical approaches, with limited or no collaboration and visibility across campaigns
- Repeated vertical campaigns can strain limited human and financial resources and the capacity of public health systems to improve health outcomes
- Some innovative campaign delivery models such as co-delivery or collaboration between campaign components have been demonstrated as more effective and efficient in achieving health goals in comparison to implementation of interventions through vertical campaigns
- Implementation research is needed to test, evaluate, and scale up innovative campaign delivery approaches on co-delivery or improved collaboration between campaigns. Pilots should be considered both for the COVID-19 context and for stable longer-term settings

Purpose

- To provide an introduction to the evidence base on two approaches of health campaign integration (full integration or “co-delivery” of campaigns and partial integration or “collaboration” between campaign components), summarize the lessons learned from past experiences, and highlight the evidence gaps
- To stimulate discussions among countries, donors, and implementing partners to consider integrated health campaign approaches and to share findings on promising and evidence-based campaign integration practices and outcomes

Target Audience(s)

- Regional and country-level stakeholders and policy makers who oversee, plan, implement, or monitor health campaigns
- Global organizations that fund, oversee, coordinate, or issue guidance around health campaigns

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Introduction

Public health campaigns are time-bound, intermittent activities that are deployed to address specific epidemiologic challenges, expediently fill delivery gaps, or provide surge coverage for health interventions. These campaigns have been a core strategy to provide essential health services; to respond to disease outbreaks; and to prevent, control, eliminate, or eradicate targeted diseases, particularly in low- and middle-income countries. For example, supplementary immunization activities in support of global measles elimination reached, on average, 66% of zero-dose children across 14 countries from 2000 to 2014 (1).

High priority health programs that use campaigns include neglected tropical diseases (NTDs), malaria, polio, other vaccine-preventable diseases (e.g., measles, yellow fever, typhoid, tetanus, meningitis, HPV), and vitamin A. To maintain population coverage over time, most campaigns must be repeated periodically, as with semi-yearly vitamin A supplementation, yearly mass drug administration (MDA) for lymphatic filariasis (LF), or distribution of insecticide-treated nets (ITNs) every 3 years. Receiving those interventions through ongoing or routine services in-between campaigns is equally important to maintain coverage.

While optimized to deliver specific results, health campaigns in countries are often scheduled, planned, and implemented using vertical approaches with limited or no knowledge, visibility, or collaboration across programs. A recent review of health campaigns across countries revealed that in 2020 alone each of the 52 countries has 11 or more campaigns planned, with some overlapping too (2). Repeated campaigns can strain limited human and financial resources and the capacity of public health systems to achieve other health outcomes (3). The brief presents a summary of evidence-based practices and opportunities for countries and partners to integrate health campaigns or their components to improve campaign effectiveness and health outcomes.

Health campaigns during COVID-19. The COVID-19 pandemic has severely hampered the delivery of health interventions across the globe, as many countries have paused or scaled back their health campaigns and ongoing/routine services to help avoid further spread of the virus. In July 2020, 335 campaigns had been delayed globally (4). Global guidance on conducting campaigns during the pandemic continues to evolve. Disruption of campaigns will cause countries to bear a disproportionate burden of disease by interrupting access to critical health interventions. As reported in June 2020, 18 out of 29 countries that have suspended their measles campaigns because of COVID-19 are reporting outbreaks (5). In addition, modeling efforts have shown that with disruptions in malaria prevention and treatment campaigns, the death toll in sub-Saharan Africa in the worst-case scenario may exceed the malaria deaths reported globally in the year 2000 (6). This could represent a loss of two decades of progress in malaria control. **As COVID-19-related restrictions are lifted, many countries may require innovative campaign delivery approaches to catch-up on intervention coverage efficiently, effectively, and rapidly.** Such approaches will help prevent outbreaks and address increasing campaign costs.

Methods

We reviewed published and grey literature (2002-present) on co-delivery and collaboration between health programs. We found the available evidence on health campaign integration to be limited and largely dated (over 10 years old). The review was complemented by consultations with several subject matter experts in health campaign delivery (see acknowledgements). The focus of our review was on a small sample of most noted references highlighted by experts with extensive experience in conducting campaigns in different countries. The goal was not to conduct a meta-analysis but to identify the most critical information needed to initiate a dialogue on health campaign integration.

Summary of Findings

Health Campaign Delivery Approaches: Current Evidence and Lessons Learned

Integrated campaign delivery models such as full co-delivery or collaboration between specific campaign components can be more effective and efficient in achieving health goals compared with interventions that are implemented as vertical campaigns. Integration of health campaigns can occur at two levels (7): 1) integration with

ongoing/routine health services, and 2) integration between campaigns. This brief focuses on *integration of campaigns*, including both co-delivery and collaboration between interventions; integration with ongoing/routine health services is addressed in a separate brief. This review explores the following questions:

1. What do we mean by integration of campaigns?

What approaches have countries used to change from vertical campaign delivery to a co-delivery or collaborative approach?

2. Why should countries consider integration of health campaigns?

What are the benefits and challenges of integrating campaigns and their impact on health outcomes in countries?

3. Which health campaigns are most appropriate for integration?

What conditions must be in place in countries to consider campaign integration?

Selected findings are summarized under each of the three questions.

1. What do we mean by integration of campaigns?

Current country health systems are characterized by implementation of integrated and individual interventions. According to WHO's guidance document on integration of other health interventions with immunization (8), integration should not be seen as "two extremes of integrated or not integrated." For the purposes of this brief, we are considering two degrees of health campaign integration: *full integration* and *partial integration* for campaign components such as those below, depending on country context and available resources (9):

- *Planning*: conceptualization phase of campaign activities (e.g., household registration, microplanning)
- *Social Mobilization*: social mobilization and communication among the target population
- *Set-up/preparations*: preparatory work to implement campaigns (e.g., logistics, supply chains, trainings)
- *Management*: oversee the implementation of campaigns and delivery of interventions
- *Implementation of Interventions*: delivery of intervention to the target population
- *Post-campaign*: wrapping-up the campaigns, including any mop-up activities
- *Surveillance, Monitoring, and Evaluation*: Recording, reporting and analysis of campaign data

Full integration: Co-delivery of campaign-based products/health interventions

Full integration involves coordinating **most or all typical campaign components** (microplanning, registration, logistics, implementation, evaluation) to allow **co-delivery or simultaneous delivery of two or more health interventions** at the point of service delivery. For example, multiple countries have used campaigns to effectively integrate distribution of ITNs with measles and polio vaccination, vitamin A, and deworming medications in sub-Saharan African countries (Table 1). Co-delivery of ITNs with other primary campaigns rapidly increased coverage of both the primary and the linked campaign (e.g., high ITN and measles vaccination coverage) (3).

Partial integration: Collaboration and sharing of campaign components

Partial integration involves collaboration or sharing of **specific campaign components** between vertical health programs to improve efficiency and effectiveness of multiple campaigns, but *without* co-delivery of

interventions at the same service delivery points. Collaboration between campaigns can range from communication and information exchange to sharing of personnel and resources or implementing a part of one campaign by another campaign (Table 2) (10). In some countries, programs have used population data generated during campaigns to target such efforts as organizing health camps or expanding outreach services.¹ In Nigeria, in 2010, ITN campaigns leveraged polio campaign’s high-resolution settlement maps to reach nomadic populations (3).

Full or partial campaign integration is a complex service delivery approach. Though fairly dated, the literature (Tables 1 and 2) shows that campaign integration has most often occurred between immunization programs, malaria net distribution, vitamin A supplementation, and/or child deworming programs. Successful integration in terms of improved program coverage and health outcomes have been seen in a wide range of country and programmatic contexts. That said, campaign integration has not been sustained consistently among interventions over time.

2. Why should countries consider integration of health campaigns? What are the benefits and challenges?

Multiple benefits of integrating campaigns were highlighted both in the published and grey literature and through expert consultations. Potential **benefits** to integrated delivery of interventions and decrease in number of campaigns (3,7,9,11–14) are listed as follows:

Increased Coverage and Acceptability

- Rapidly increase coverage of the primary and linked intervention and beneficiary satisfaction
- Help individual health programs expand their reach among hard-to-reach population groups that other health programs have accessed successfully
- Leverage the experiences and best practices of the linked programs to improve coverage in shared target population groups

Cost Savings

- Can promote cost savings through joint microplanning of programs, sharing household registration and logistics, using common data collection approaches, etc.
- Allow programs to share campaign costs
- Achieve operational efficiencies and economies of scale (potential to share fixed costs such as planning, reaching to the communities)

Improved Program Efficiencies

- Building on the campaign experience, infrastructure, partnerships, and human resources of the linked intervention
- Potentially focus on improving the quality of campaigns depending upon the effectiveness of country leadership, coordination, planning, and implementation
- Potentially reduce competition for campaign workers (e.g., health facility staff and community health workers)
- Minimize duplication of efforts and reduce delivery costs across interventions
- Reduce the frequency of campaigns within communities, potentially mitigating refusal or negative perceptions for beneficiaries previously involved in multiple campaigns
- Increase the productivity of a health system by having multiple interventions target the same population groups and geographical units simultaneously
- Increase leadership capacity by promoting collaboration between ministries and partners
- Provide populations living in complex environments (e.g., war settings, national disasters) safe access to multiple interventions

¹ Sue Gerber, Bill and Melinda Gates Foundation, personal communication, July 16, 2020.

Potential policy/programmatic **challenges** to integrating campaigns (3,7,15) include the following:

Policy challenges

- Lack of high-level political commitment or appetite for inter- or intra-program integration due to reluctance of vertical programs to cede control over their resources and the fear of disrupting existing campaign strategies
- The tendency of donor funding approaches and funding allocations to perpetuate vertical campaigns via focus on individual disease prevention/control/elimination goals
- Varied funding cycles for interventions and need to consolidate and combine funding streams
- Restrictions on which health workers can deliver certain health interventions

Programmatic challenges

- Potential adverse impact on the existing coverage of the primary or the linked intervention, if integration is not planned and executed effectively (e.g., poorly coordinated procurement)
- Differing target populations (e.g., age groups, risk factors) coordinating diverse logistical and procurement systems
- Differing timing of intervention depending on the disease
- Overwhelming communities with too much information and services at one time
- Potential for increased costs due to factors such as longer trainings, expanded supervision, and monitoring duties
- Need to train health workers to deliver more than one intervention (e.g., differing trainings needs for delivering interventions via house-to-house versus fixed-site approaches).
- Added complexity to campaign planning (e.g., poorly coordinated microplanning and household census), implementation (e.g., delays due to breakdowns in supply chain, transport, and storage), monitoring and evaluation (e.g., unwieldy checklists and surveys)
- Increased workload for existing health workers given additional program interventions
- More complicated and time-consuming recording/tallying of doses/interventions leading to errors/inaccuracies
- Disruptions to routine services
- Lack of incentives for country program managers and frontline campaign workers to pursue integration, given reduced opportunities for receiving per-diem from multiple campaign.

3. Which health campaigns are most appropriate for integration?

The choice of interventions to co-deliver or collaborate—and the way campaign workers are trained and monitored for co-delivery of interventions—can determine the ultimate success of an integrated campaign. This choice must be evidence based and carefully considered to ensure that integration does not hamper the existing coverage and health outcomes of either the primary or the linked intervention. Inadequate consideration among program leaders can inadvertently result in problematic decisions or even adverse health consequences. For example, in Kenya, measles vaccination and net distribution programs in 2005 both targeted children <5 years of ages, leading to a call for an integrated campaign. To raise adequate funds for nets, Kenya postponed its measles campaign until 2006, which in the interim resulted in a significant measles outbreak that ultimately lasted from 2005 to 2007 (16).

WHO suggests that the following criteria can drive decisions around integrated delivery of immunizations and other health campaigns (3,8). These criteria along with examples are included in the box below.

Box. Criteria for guiding decisions on integrated delivery of health campaigns

- 1. Context:** the circumstances that influence the co-delivery/collaboration decision, such as geographical setting (rural or urban areas), target population of the interventions, political will to promote co-delivery/collaboration among different interventions, existing health care structures for the delivery of interventions, monitoring responsibilities for each intervention, and availability and ability of health workers to work on multiple interventions

Example: In Uganda, the schistosomiasis control program initially targeted school children. But because one-third of children in certain endemic areas were out of school, the intervention failed to reach its coverage goals. It was later integrated with national immunization days to ensure that every time a child was reached for a health service, the child also received deworming medication (8,17).

- 2. Compatibility:** alignment between different intervention components and shared campaign characteristics, such as overlaps in the target population, type of intervention, seasonality of the disease, timing and frequency of service delivery, procurement mechanisms and timing, behavior change requirements and skill level and training of health workers

Example: A pilot project was implemented in Cameroon to integrate the delivery of vitamin A supplementation (VAS) with the higher coverage Community-Directed Treatment with Ivermectin (CDTI) intervention to control onchocerciasis. The interventions were integrated as they were compatible due to complementary target groups, similar supply systems, free of charge drugs, and relatively simple simultaneous delivery mechanisms. Integrated delivery of VAS and CDTI increased the population coverage of both VAS and ivermectin (18).

- 3. Feasibility:** operational and financial viability of integrating the interventions in terms of the following:

- Existing operational capacity and coverage levels of the primary intervention for integration
- Number of interventions to be involved in co-delivery or collaboration
- Mode of service delivery (e.g., fixed site vs. house-to-house)
- Technical ease of the intervention (e.g., oral vs. an injectable vaccine)
- Number of health workers available to provide the additional interventions safely (e.g., in appropriate dose or quantity) and effectively (e.g., without missing any target population)
- Health workers' skills and training requirements to deliver the integrated intervention
- Time required for co-delivery or collaboration between interventions
- Supply chain considerations (size, weight, availability of products) to deliver linked interventions
- Funding availability for integrated interventions

Example: In 2012 and 2013, the Kidal region of Mali missed two consecutive rounds of MDA with ivermectin and albendazole for treatment of LF due to insecurity in the region. However, despite the insecurity, child immunization campaigns continued. In 2014, the national NTD program in Mali integrated the delivery of all LF MDA components (drug delivery, training, supervision, and results sharing) with the national child immunization campaign, demonstrating operational feasibility for integrating interventions. Integration of LF MDA with the vaccine campaign in Kidal was successful and improved coverage outcomes for the target population (19).

- 4. Acceptability:** integrated interventions are acceptable to the community and health workers

Example: During one of the focus groups implemented by a study in Cameroon to assess community acceptability of integrated interventions, a mother in Cameroon stated that if the services are integrated and delivered in one day, there will be more time to do household activities on other days (8).

- 5. Accountability:** clearly defined roles, responsibilities, and monitoring and evaluation strategies to assess outcomes pre- and post-co-delivery/collaboration (e.g., coverage and utilization rates, disease occurrence, quality, acceptability of services)

Example: To ensure accountability, effective monitoring, and supervision of the integrated delivery of VAS with the higher coverage CDTI intervention to control onchocerciasis in sub-Saharan Africa, it was recommended that the health management information system integrate both ivermectin and VAS data and develop a combined checklist for both ivermectin and vitamin A for supervisors at all levels (18).

- 6. Equity:** integrated campaigns should not reduce service access among vulnerable groups

Example: In Niger, integrated nationwide campaigns to distribute polio vaccine and long-lasting insecticide treated nets among children <5 years of age rapidly increased ITN ownership and equity of ITN ownership without any adverse impact on the vaccination distribution and coverage (20).

Conclusions

There is continuing and growing momentum around integrated health services among global health decision makers and partners. Most recent global strategies focus on integration of interventions with routine health services rather than campaigns. Such recommendations, for example, are highlighted in [WHO's Vitamin A supplementation in infants and children 6-59 months of age](#) (21), [the Immunization Agenda 2030](#) (22), and [Gavi 5.0: the Alliance's 2021-25 strategy](#) (23).

Only recently have some global partners revived the issue of campaign integration. This renewed interest can be attributed to the emerging programmatic challenges, budget constraints and the inefficiencies of vertical campaigns exacerbated by the COVID-19 pandemic.

The overview of evidence in the current brief suggests that integration of campaigns can be a

successful strategy in reaching health goals. It is critical to document country level integration experiences (benefits, challenges, and integration criteria) to define a shared learning agenda around full or partial campaign integration and to explore these integration approaches in targeted countries to improve health campaign effectiveness.

However, most countries face competing health priorities and have not had the time or resources to document the processes, outcomes, successes, or challenges of their integration efforts. The evidence base on partial or full integration of campaigns, including information on the technical and operational expertise and processes required to execute integrated campaigns, is limited and dated. Close engagement with country stakeholders is critical to document and learn from their more recent and planned integration experiences.

Key Knowledge Gaps

Some critical knowledge gaps on campaign integration to be filled include the following:

1. **How is “successful integration” defined in country contexts, especially in terms of operational effectiveness, programmatic outputs, outcomes, and impact? What factors determine/influence the effectiveness of the integrated approach, such as equity, health systems barriers, choice of interventions for integration, leadership and collaboration capacity, political will, funding?** These factors need to be researched further to understand the circumstances under which partial or full integration is considered necessary and viable.
2. **How does the choice of criteria—such as feasibility, accountability, equity—that countries use to determine which interventions to co-deliver or collaborate on impact the ultimate success of integrated campaigns?** The literature provides information on potential criteria to help countries determine which campaigns can be integrated successfully. However, more information is needed from field experience on the relative importance of each criterion to guide the choice of interventions for integration.
3. **What are the best program practices and processes that may influence country program decision makers and their partners to support transitioning from a vertical approach to co-delivery or collaboration between health campaigns?** Available literature mostly addresses the benefits and challenges of full or partial integration in terms of coverage and equity outcomes. It does not provide in-depth information on which campaign elements usually get integrated, nor the processes and stakeholders involved in integration. This information is critical to assist countries in planning and implementing integrated models of campaign delivery.
4. **What is the economic and health value of integrated vs. vertical campaigns** in terms of cost effectiveness of integrated interventions, service costs averted, cases averted, and lives saved?

Future Opportunities

Implementation research is needed to test, evaluate, and scale up innovative campaign delivery approaches on co-delivery or improved coordination between campaigns. Pilots should be considered both for the COVID-19 context and for stable longer-term settings. Recommendations based on these pilots should be made available to countries and partners for exploring implementation and scale up of these innovative campaign delivery models. The new Health Campaign Effectiveness Coalition is emerging as a forum for further identifying these gaps through co-developing a learning agenda and dialoguing with countries and partners to help address those gaps.

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Table 1: Examples of Co-delivery of Campaigns (2002-2014)*

Countries	Programs co-delivered	Co-delivery impact
Tanzania (2014)	Measles and rubella supplementary vaccine campaign, mass drug administration (MDA) of ivermectin and albendazole, and vitamin A	Coverage of LF MDA increased from 86% in 2013 to 93% in 2014, and MR vaccination coverage reached 97% in 2014 in comparison to the 2011 campaign that achieved 96% coverage (vitamin A information not provided) (24). Collaborative activities included planning, community sensitization, media campaigns, co-distribution of drugs and vaccines, and monitoring and evaluation.
Mali (2014)	Neglected tropical diseases (NTD) MDA with the National Childhood Immunization Campaign	Integration improved coverage of the target population. All the MDA steps were integrated with vaccine administration including drug delivery, trainings, supervision, and results sharing (19).
Angola, Benin, Botswana, Cameroon, Côte d'Ivoire, Comoros, Eritrea, Gambia, Gabon, Ghana, Guinea, Liberia, Madagascar, Mauritania, Mozambique, Nigeria, Namibia, São Tomé, South Sudan, Swaziland, Rwanda, Togo, Zambia, Zimbabwe (2013 and 2014)	African Vaccination Week (AVW), vitamin A, and deworming	AVW provided a platform to successfully integrate other interventions particularly vitamin A and deworming and increased immunization coverage (11).
Ethiopia (2010)	Co-delivery of malaria and trachoma interventions (MALTRA)	Substantial increase in the screening and treatment of malaria cases and achieved a trachoma treatment rate of 94% due to integrated delivery of the two interventions (25,26).
Madagascar (2009)	Measles campaign and insecticide-treated nets (ITNs)	Increase in both measles and ITN coverage with integration. Higher vaccination campaign coverage in ITN districts (70.8%) than non-ITN districts (59.1%). ITNs provided a robust incentive for children from the poorer households to receive measles vaccines. Also, greater equity for measles vaccination in ITN districts than in non-ITN districts (15).

INTEGRATION BETWEEN HEALTH CAMPAIGNS

Kenya (2008)	HIV testing, malaria, and diarrhea prevention campaigns	HIV and disease prevention campaigns achieved 87% coverage among the estimated targeted population within 7 days (27).
Lao PDR (2007)	Expanded Program on Immunization (EPI) and soil-transmitted helminths (STH)	Coordination of anthelmintic distribution into the existing immunization and vitamin A supplementation campaign accompanied with shared use of the campaign venues, meeting opportunities, simultaneous social mobilization. The study demonstrated higher cost-effectiveness of integrating deworming interventions with existing immunization and vitamin A supplementation campaigns in contrast to implementation of vertical interventions only delivering anthelmintic drugs (28).
Niger (2006)	Polio campaigns and ITNs	Increased ITN coverage and reduced inequities. ITN ownership increased from 6.3% prior to the campaign to 65% after the campaign (20).
Burkina Faso, Ghana, Mali, Uganda, Niger, Haiti, Sierra Leone (2006)	Coordinated delivery of interventions for five NTDs	Coordinated delivery of interventions for five NTDs—lymphatic filariasis, onchocerciasis, schistosomiasis, soil-transmitted helminthiasis and blinding trachoma—in seven sub-Saharan countries substantially increased the geographic coverage for all five NTDs (29).
Tanzania (2005)	Measles vaccine, bednets, vitamin A, mebendazole for children <5 years of age	The integrated child health campaign delivered the key child health interventions (measles vaccine, mebendazole treatment, vitamin A, and a bednet) to ~80% of the target population. For the eligible population, the measles vaccination coverage increased from 76% before the campaign to 82% during the campaign; 39.4% received mebendazole before the campaign and the coverage rate increased to 81% during the campaign; 67.0% of eligible children received vitamin A before the campaign and the coverage rate increased to 85% during the campaign; for bednets, the coverage rate increased from 52.9% to 69.3% due to the campaign (30).
Togo (2005)	Measles and ITNs	The National Integrated Health Campaign achieved high, equitable ITN coverage. Household ownership of at least one ITN increased from 8.0% pre-campaign to 62.5% one-month post-campaign (31).
Nigeria (2004)	LF/onchocerciasis MDA and ITNs	Dramatic increase in ITN coverage among the target population without adversely affecting the MDA coverage, allowing the two interventions to share resources and realize mutual benefits in terms of coverage rates. Among surveyed households with children <5 years of age and pregnant women, 80% owned at least 1 insecticide-treated bed net, a “9-fold increase” from 2003 (32).

Ghana and Zambia (2002)	Measles campaign and ITNs	<p>High coverage of ITNs at a lower cost when linked with the measles campaign as the coverage rates of childhood vaccination are high and there are overlaps in the frequency of these campaigns (12,33,34).</p> <p>Approximately 93% of children aged 9 months to 5 years were vaccinated during the campaign; 94% of households had an insecticide-treated bednet; 68% were observed to have a net hung over a bed. Co-delivery of campaigns for ITNs and measles integrated most of the operational aspects including planning, social mobilization, health worker salaries, supervision resulting in high ITN ownership, and equity at low cost (33).</p>
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*Changes in baseline indicators noted where available from documentation.

Table 2: Examples of Collaboration Between Campaigns (2002-2015)

Countries	Programs collaborating	Collaboration impact
Haiti (2014-2015)	Lymphatic filariasis (LF), soil-transmitted helminths (STH), malaria	Collaboration between the Transmission Assessment Surveys (TAS) for LF, STH, and malaria demonstrated the feasibility of using the LF TAS platform for coordinating assessments for STH and/or malaria (35).
Nigeria (2010)	Polio and insecticide-treated nets (ITNs)	ITN campaigns leveraged polio campaign's high-resolution settlement maps to reach nomadic populations (3).
Ghana (2002)	LF and ITNs	Community wide registration lists generated for the LF campaign in Ghana were utilized for measles vaccination and ITN distribution campaigns (12).

References

1. Portony A, Jit M, HELLERINGER S, Verguet S. Impact of measles supplementary immunization activities on reaching children missed by routine programs. *Vaccine* 2018;36(1):170–8.
2. Campaigns Database Summary—CEE [Internet]. [cited 2020 Jun 29]. Available from: <https://campaign-effectiveness.squarespace.com/campaigns-data-summary>
3. Gittelman D. Revisiting the integration of distribution of insecticide-treated nets with other health interventions through mass campaigns. *Glob Fund to Fight AIDS, TB Malar* 2019. (Please contact [D. Gittelman](#) for information about the paper).
4. Covid-19 Campaign Impact Tracker — CEE [Internet]. [cited 2020 Jul 17]. Available from: <https://www.campaign-effectiveness.org/covid19-campaign-impact-tracker>
5. The New York Times. Slowing the Coronavirus Is Speeding the Spread of Other Diseases. *The New York Times* [Internet]. 2020 [cited 2020 Jun 30]. Available from: <https://www.nytimes.com/2020/06/14/health/coronavirus-vaccines-measles.html>
6. World Health Organization (WHO). The potential impact of health service disruptions on the burden of malaria: a modelling analysis for countries in sub-Saharan Africa [Internet]. 2020. Available from: <https://www.who.int/publications-detail/the-potential-impact-of-health-service-disruptions-on-the-burden-of-malaria>
7. Wallace AS, Ryman TK, Dietz V. Experiences integrating delivery of maternal and child health services with childhood immunization programs: Systematic review update. *J Infect Dis* 2012;205(Suppl 1):S6-19.
8. WHO. Working together: an integration resource guide for immunization services throughout the life course. World Health Organization 2018.
9. Kahn JG, Harris B, Mermin JH, Clasen T, Lugada E, Grabowksy M, et al. Cost of community integrated prevention campaign for malaria, HIV, and diarrhea in rural Kenya. *BMC Health Serv Res* 2011;11(1):346.
10. Grépin K, Reich M. Conceptualizing integration: A framework for analysis applied to neglected tropical disease control partnerships. *PLoS Negl Trop Dis* 2008 Apr;2(4):e174.
11. Mihigo R, Anya B, Okeibunor J, Ajibola S, Boakye-Agyemang C, Muzenda L, et al. African vaccination week as a vehicle for integrated health service delivery. *BMC Health Serv Res* 2015;15(1):358.
12. Grabowsky M, Farrell N, Chimumbwa J, Nobiya T, Wolkon A, Selanikio J. Ghana and Zambia: achieving equity in the distribution of insecticide-treated bednets through links with measles vaccination campaigns. *Reaching the poor with health, nutrition, and population series*. Washington DC, World Bank, 2005 Feb: 65-80.
13. Camber Collective. The Campaign Effectiveness Landscape and Case for Action (2020), developed by Camber Collective in partnership with the Bill & Melinda Gates Foundation and the Task Force for Global Health. 2020. Available at <https://taskforce.org/wp-content/uploads/2020/04/Campaign-Effectiveness-Landscape-and-Case-for-Action-February-2020-Public.pdf>.
14. Kilian A, Opawale A, Zegers de Beyl C, Baba E, Boulay M. Evaluation of the integrated LLIN mass distribution and child health campaign of December 2009 Sokoto, Nigeria. (Please contact [D. Gittelman](#) for information about the paper).
15. Goodson JL, Kulkarni MA, Vanden Eng JL, Wannemuehler KA, Cotte AH, Desrochers RE, et al. Improved equity in measles vaccination from integrating insecticide-treated bednets in a vaccination campaign,

- Madagascar. *Trop Med Int Health* 2012 Apr;17(4):430–7.
16. CDC. Progress in Measles Control -- Kenya 2002--2007 [Internet]. *MMWR* 2007;56(37):969-972. [cited 2020 Jul 14]. Available from: <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5637a5.htm>
 17. Kabatereine NB, Tukahebwa E, Kazibwe F, Namwangye H, Zaramba S, Brooker S, et al. Progress towards countrywide control of schistosomiasis and soil-transmitted helminthiasis in Uganda. *Trans R Soc Trop Med Hyg* 2006 Mar;100(3):208–15.
 18. Haselow N, Obadiah M, Akame J. *The Integration of Vitamin A Supplementation into Community-Directed Treatment with Ivermectin: A Practical Guide for Africa*. Helen Keller International. 2004.
 19. Berthé M, Dembele B, Tounkara C, Dembele M, Dorintié A, Goita S, et al. Integration of Neglected Tropical Disease Mass Drug Administration with the National Childhood Immunization Campaign in Insecure Areas: Perception of Participants in the Kidal Region of Mali. *Hellen Keller International and Republique Du Mali*; 2014.
 20. Thwing J, Hochberg N, Eng J Vanden, Issifi S, James Eliades M, Minkoulou E, et al. Insecticide-treated net ownership and usage in Niger after a nationwide integrated campaign. *Trop Med Int Health* 2008;13(6):827–34.
 21. World Health Organization. *Guideline: Vitamin A supplementation in infants and children 6–59 months of age*. World Health Organization, 2011. Available from <https://www.who.int/publications/i/item/9789241501767>.
 22. World Health Organization. *Immunization Agenda 2030: A Global Strategy to Leave No One Behind*. World Health Organization, Draft 4, April 2020. Available from https://www.who.int/immunization/immunization_agenda_2030/en/.
 23. GAVI. *GAVI 5.0: The Alliance’s 2021–25 Strategy* [Internet]. 2019 [cited 2020 Jul 16]. Available from: https://www.gavi.org/sites/default/files/board/minutes/2019/06 - Gavi 5.0_The Alliances 2021-2025 Strategy.pdf
 24. Mwingira UJ, Means AR, Chikawe M, Kilembe B, Lyimo D, Crowley K, et al. Perspective piece: Integrating neglected tropical disease and immunization programs: The experiences of the Tanzanian Ministry of Health. *Am J Trop Med Hyg* 2016;95(3):505–7.
 25. The Carter Center Ethiopia. *The Fifth MALTRA Week Activity Report Integrated Project for Malaria and Trachoma Control (MALTRA) in Amhara Regional State*. 2010.
 26. Emerson PM, Ngondi J, Biru E, Graves PM, Ejigsemahu Y, Gebre T, et al. Integrating an NTD with One of “The Big Three”: Combined Malaria and Trachoma Survey in Amhara Region of Ethiopia. *PLoS Negl Trop Dis* 2008 Mar;2(3):e197.
 27. Lugada E, Millar D, Haskew J, Grabowsky M, Garg N, Vestergaard M, et al. Rapid implementation of an integrated large-scale HIV counseling and testing, malaria, and diarrhea prevention campaign in rural Kenya. *PLoS One* 2010;5(8):e12435.
 28. Boselli G, Yajima A, Aratchige PE, Feldon KE, Xeuatvongsa A, Phounphenghak K, et al. Integration of deworming into an existing immunisation and vitamin A supplementation campaign is a highly effective approach to maximise health benefits with minimal cost in Lao PDR. *Int Health* 2011;3(4):240–5.
 29. Linehan M, Hanson C, Weaver A, Baker M, Kabore A, Zoerhoff KL, et al. Integrated implementation of programs targeting neglected tropical diseases through preventive chemotherapy: Proving the feasibility at national scale. *Am J Trop Med Hyg* 2011;84(1):5–14.
 30. Skarbinski J, Massaga JJ, Rowe AK, Kachur SP. Distribution of free untreated bednets bundled with

insecticide via an integrated child health campaign in Lindi Region, Tanzania: Lessons for future campaigns. *Am J Trop Med Hyg* 2007;76(6):1100–6.

31. Wolkon A, Vanden Eng JL, Morgah K, Eliades MJ, Thwing J, Terlouw DJ, et al. Rapid scale-up of long-lasting insecticide-treated bed nets through integration into the national immunization program during child health week in Togo, 2004. *Am J Trop Med Hyg* 2010;83(5):1014–9.
32. Blackburn BG, Eigege A, Gotau H, Gerlong G, Miri E, Hawley WA, et al. Successful integration of insecticide-treated bed net distribution with mass drug administration in Central Nigeria. *Am J Trop Med Hyg* 2006;75(4):650–5.
33. Grabowsky M, Nobiya T, Ahun M, Donna R, Lengor M, Zimmerman D, et al. Distributing insecticide-treated bednets during measles vaccination: A low-cost means of achieving high and equitable coverage. *Bull World Health Organ* 2005;83(3):195–201.
34. Grabowsky M, Farrell N, Hawley W, Chimumbwa J, Hoyer S, Wolkon A, et al. Integrating insecticide-treated bednets into a measles vaccination campaign achieves high, rapid and equitable coverage with direct and voucher-based methods. *Trop Med Int Health* 2005;10(11):1151–60.
35. Knipes AK, Frantz Lemoine J, Monestime F, Fayette CR, Direny AN, Desir L, et al. Partnering for impact: Integrated transmission assessment surveys for lymphatic filariasis, soil transmitted helminths and malaria in Haiti. *PLoS Negl Trop Dis* 2017 Feb;11(2):e0005387.