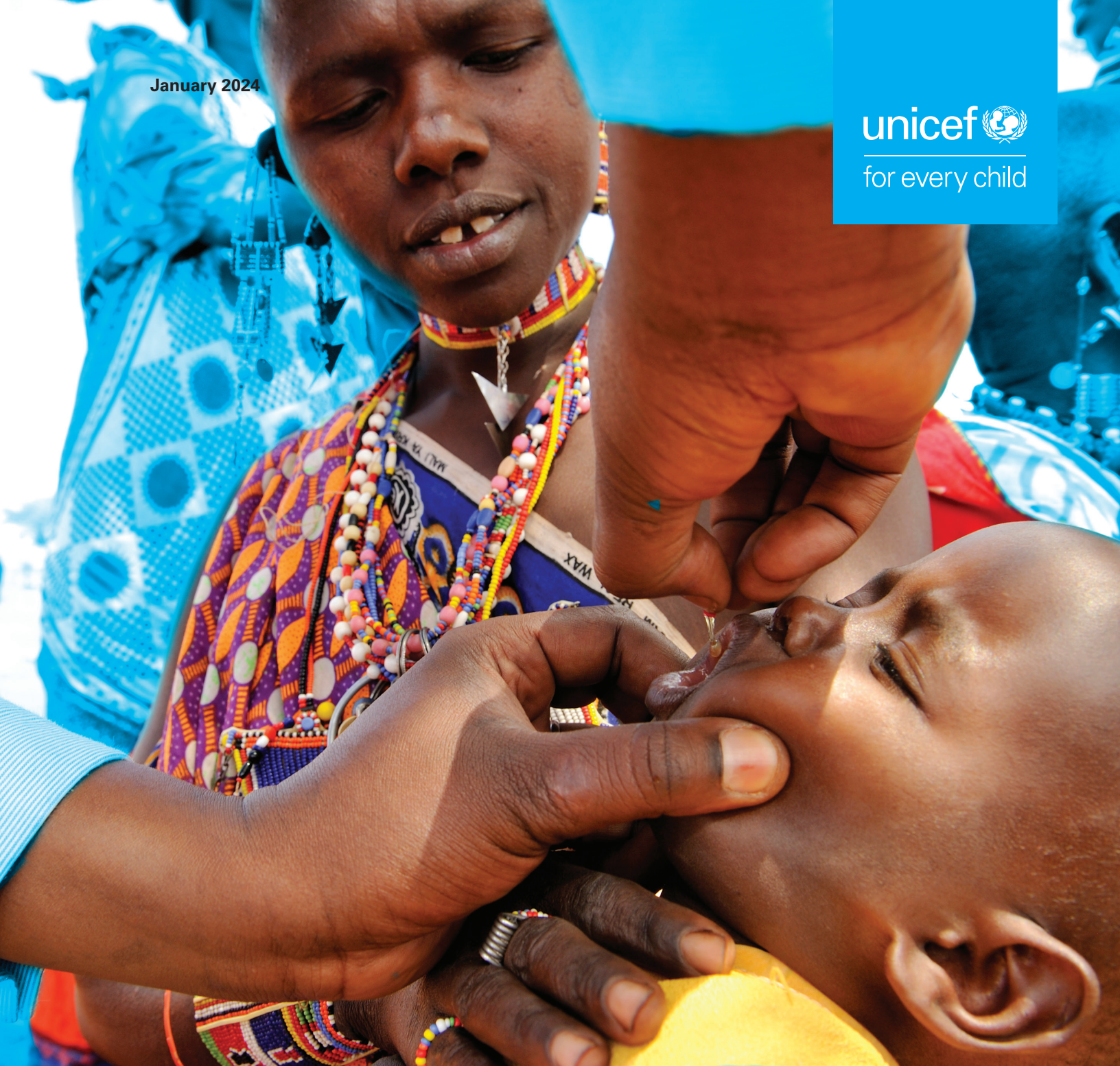


January 2024

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Approaches to the delivery of
Vitamin A
supplementation
in Eastern and Southern Africa

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Less than **two thirds** of children aged 6-59 months in the region currently receive adequate **Vitamin A Supplementation**



Key messages

Vitamin A deficiency continues to be a serious public health problem in Eastern and Southern Africa (ESA) due to widespread poor diets of young children. However, less than two thirds of children aged 6-59 months in the region currently receive adequate Vitamin A Supplementation (VAS).

In almost all ESA countries, VAS is now delivered through routine child health services at fixed health facilities. This is recommended as a very low-cost approach that is effective in reaching children aged 6-12 months. However, to reach children aged 12-59 months and children in hard-to-reach populations, it is essential that this is accompanied by community outreach.

Where a strong cadre of community health staff exists, continuous delivery of VAS can be integrated into their routine tasks. Where community health capacity is low, while capacity is being strengthened, countries can continue using bi-annual child health events (CHEs). Wherever possible, CHEs should be integrated into government workforce tasks and schedules and deliver multiple child health and nutrition services to reduce costs and increase uptake.

To reach hard-to-reach populations, countries can capitalize on opportunities such as mobile health teams or 'zero coverage' campaigns.

To inform scale up, VAS monitoring must be integrated into routine health management information systems, ideally in a way that captures two dose coverage.

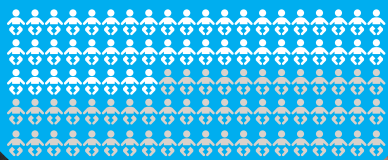
Micronutrient surveys are needed to inform the targeting of VAS programmes. Where recent micronutrient survey data is unavailable, countries can use proxy indicators to inform targeting.

Donor investments continue to be needed in ESA to strengthen national systems, support governments as they transition to routine models of VAS delivery and support studies to inform resource targeting.



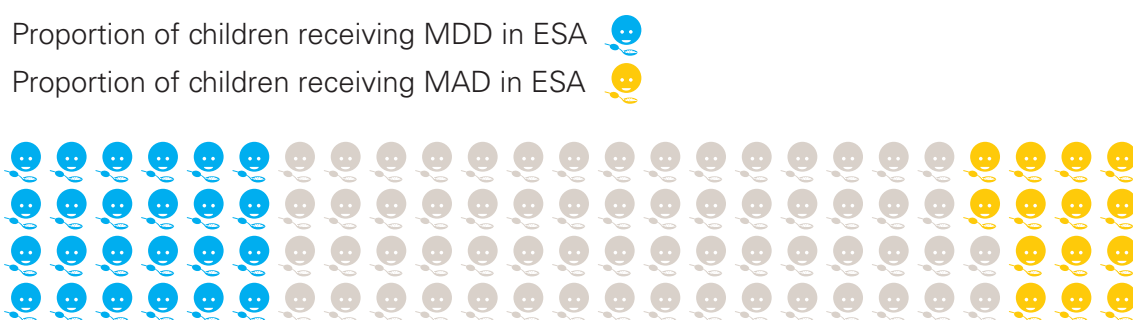
Vitamin A Deficiency
levels remain high in
Sub-Saharan Africa at

48%



Background

Only **24%** of children aged 6-23 months in Eastern and Southern Africa (ESA) receive a diet with minimum dietary diversity (MDD) and only 14% receive a minimum acceptable diet (MAD).¹ Poor diets lead to micronutrient deficiencies including Vitamin A Deficiency (VAD) which is a major contributor to deaths from diarrhoea and measles and a major cause of preventable childhood blindness. Latest estimates from 2013 show that VAD levels remain high in Sub-Saharan Africa at 48%, despite major declines in much of the rest of the world.²

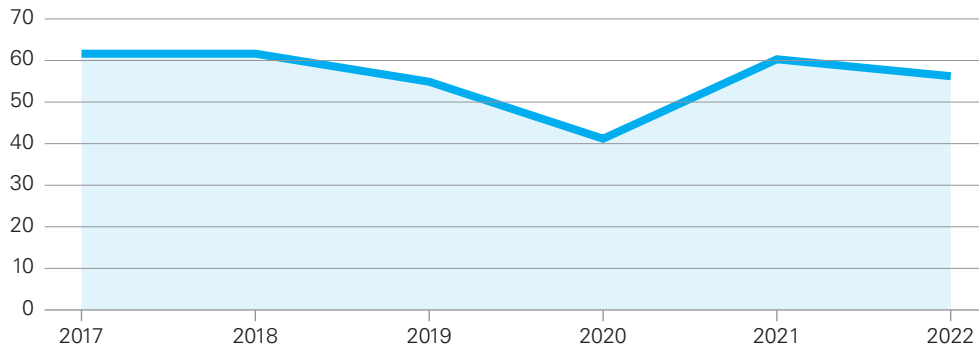


The quality of child diets, measured by diet diversity,³ must be improved to address VAD. Until poor diets are addressed, vitamin A supplementation (VAS) will remain a necessary, life-saving intervention⁴ associated with clinically meaningful reductions in child morbidity and mortality.⁵ In countries where VAD is a public health concern, two adequately spaced doses of vitamin A are recommended for children

aged 6-59 months. Eighty percent two dose coverage is usually considered a strong national programme. Trend data from ESA countries over the last five years reveal that VAS coverage was severely disrupted by the COVID-19 pandemic in 2020. While there was significant 'bounce back' in 2021 due to initial donor support, coverage subsequently fell to 57% in 2022 (Figure 1) and is in overall decline.

- 1 UNICEF Global Database on Infant and Young Child Feeding (data 2014 to 2020) <https://data.unicef.org/topic/nutrition/diets/>
- 2 Stevens GA, et al (2013) Trends and mortality effects of vitamin A deficiency in children in 138 low-income and middle-income countries between 1991 and 2013: a pooled analysis of population-based surveys. *The Lancet Global Health*, Volume 3, Issue 9, e528 - e536
- 3 Steyn N, et al (2006) Food variety and dietary diversity scores in children: Are they good indicators of dietary adequacy? *Public Health Nutrition*, 9(5), 644-650. doi:10.1079/PHN2005912
- 4 Wirth JP, et al (2017) Vitamin A Supplementation Programs and Country-Level Evidence of Vitamin A Deficiency. *Nutrients*. 2017; 9(3):190. <https://doi.org/10.3390/nu9030190>
- 5 Imdad A, et al (2022) Vitamin A supplementation for preventing morbidity and mortality in children from six months to five years of age. *Cochrane Database Syst Rev*. 2022 Mar 16;3(3):CD008524. doi: 10.1002/14651858.CD008524.pub4. PMID: 35294044; PMCID: PMC8925277.

FIGURE 1

Trends in two dose coverage of VAS in 17 ESA countries

Declines in two-dose coverage are partly due to the phasing out of polio supplementary immunization activities (SIAs), within which VAS was typically integrated, and which tended to achieve very high coverage.⁶ Many countries initially shifted to the use of bi-annual campaigns (Child Health Events (CHEs)), either to deliver VAS and de-worming alone, or as part of a package of multiple child health services. However, CHEs are very expensive to run, often rely on external support, and are vulnerable to interruption due to funding delays and crises. Analysis of the impact of COVID-19 on nutrition programming in

ESA showed that countries delivering VAS via CHEs experienced the greatest disruption in VAS delivery during 2020, compared to countries using routine models of delivery.⁷ In response to these issues, many countries are now exploring more sustainable and resilient approaches to the delivery of VAS. The purpose of this study is to understand VAS approaches currently being used in ESA countries, their strengths, weaknesses and enabling factors, and to understand directions of travel to inform country-level decision-making and donor investments.

6 UNICEF (2018) Coverage at a Crossroads: New directions for vitamin A supplementation programmes. New York: UNICEF

7 United Nations Children's Fund, Lessons learned from the nutrition response to COVID-19 in Eastern and Southern Africa. UNICEF Eastern and Southern Africa Regional Office, 2024.

Methodology

An online survey of UNICEF nutrition teams in 21 countries in ESAR was undertaken between April and May 2022, with responses from 20 countries. The survey asked a range of questions related to the predominant VAS delivery platforms and approaches used in each country, as well as pilot programmes being carried out. Between July and October 2022, key informant interviews (KIIs) were carried out with UNICEF nutrition staff from eight of these countries to provide deeper understanding of VAS delivery approaches used and their strengths, weaknesses, and challenges. Results were analysed by the ESARO nutrition team and are summarized in this report.



Findings

An overview of VAS delivery approaches in Eastern and Southern Africa

Results reveal that three platforms are used to deliver VAS in ESA countries: bi-annual campaigns, facility-based child health services, and community-based child health or Early Childhood Development (ECD) services. The common features of each of these platforms are described in Table 1 according to each of the well understood health system building blocks.

TABLE 1

Features of VAS delivery platforms

| Health System Building Block | 1. Campaign delivery | 2. Health facility delivery | 3. Community platform delivery |
|------------------------------|--|---|---|
| Service delivery | Bi-annual Delivered in parallel to routine child health and nutrition services. Stand-alone or integrated with other campaigns or Child Health Events (CHEs) | Continuous Embedded within routine package of facility-based <5 child health and nutrition services. | Continuous Embedded within package of <5 child health and nutrition community services. |
| Health workforce | Health-facility and community-based health staff as a supplement to routine activities (sometimes paid per diems). In humanitarian contexts partner staff may be used. | Health facility staff | Community health workers |
| Information | Parallel reporting system Where campaigns are embedded within government systems, data may be fed into the national Health Information System (HIS) at higher (usually national) levels. | Embedded within routine facility-level reporting through the HMIS. | Embedded within routine facility-level reporting through the HMIS. |
| Products | VA capsules procured by partners In stable contexts, supplies are usually managed within the national supply chain. In humanitarian contexts supplies may be managed by partners. | VA capsules usually procured by partners Supplies managed within national supply chain for distribution to health facilities for use | VA capsules usually procured by partners Supplies managed within national supply chain for distribution to health facilities to be included in community health worker supply kits |
| Financing | Resource intensive – often requires partner support which can make campaigns ad hoc depending on availability of funds. Where campaigns are embedded within national systems Government may cover delivery costs. | Low supplementary cost for routine delivery - costs absorbed by government. | Low supplementary cost for routine delivery - costs absorbed by government. |
| Leadership/governance | Government-led but may be partner-led in humanitarian contexts. | Government-led | Government-led |

The combination in which these platforms are used, and the extent to which they are integrated into government systems in ESA countries, can be broadly described in terms of five different approaches. These are described here and summarised in Table 2.

01

Approach one: Continuous delivery through routine health services with continuous community outreach

VAS is delivered continuously throughout the year as part of routine child health services delivered at health facilities, and continuously through routine community health or ECD services. Campaigns are not used. VAS delivery is integrated into national health system plans, budgets, supply chains, and reporting, although donors may still provide support for supplements.

This approach is used in Kenya (case study one), Mozambique (case study two), Malawi (case study three), South Africa (case study four) and Lesotho. In Kenya VAS is delivered through different community platforms, depending on the district. In Mozambique and Malawi, VAS is integrated into the routine tasks of CHWs. In South Africa, fixed health delivery is complemented with community mobilisation through either community health or ECD services. This approach is also being tested in Burundi and Tanzania.

02

Approach two: Continuous delivery through routine health services plus regular government campaigns

VAS is delivered continuously throughout the year as part of routine child health services delivered at health facilities. This is complemented with regular bi-annual campaigns managed by Government. VAS delivery is integrated into national health system plans, budgets, supply chains, and reporting, although donors may still provide support for supplements. Campaigns are regular, planned and integrated into government workforce tasks and schedules.

This is the approach being used in Botswana, Ethiopia Namibia, Eswatini, Uganda and Zimbabwe. Case study five and six describes how this approach is being applied in Uganda and Zimbabwe.

03

Approach three: Continuous delivery through routine health services plus parallel catch-up campaigns

VAS is delivered continuously throughout the year as part of routine child health services delivered at health facilities. This is complemented with ad hoc 'catch up' campaigns to boost coverage and/or when funds are available. VAS delivery through health facilities is integrated into national health system plans, budgets, supply chains, and reporting, often with donor support for supplements. Campaigns are donor-driven and supported.

This is the approach being used in Angola, Eritrea, Somalia and Madagascar. Catch up campaigns are also used in emergency-affected areas of Ethiopia. In Eritrea, in hard-to-reach areas VAS is delivered through mobile health teams rather than fixed health facilities.

04

Approach four: Government campaigns only

VAS is delivered solely through regular, bi-annual campaigns managed by Government. Campaigns are regular, planned and integrated into government workforce tasks and schedules, national health system plans, budgets, supply chains, and reporting. Donors may still provide support for supplements.

This approach is being used in Rwanda, Zambia (case study seven), Burundi and Tanzania. In Rwanda and Zambia this approach is well-established and accepted and there are no plans to shift to continuous VAS delivery. In Burundi and Tanzania, continuous delivery through routine child health services is being piloted, with the intention to scale up nation-wide.

05

Approach five: Parallel campaigns only

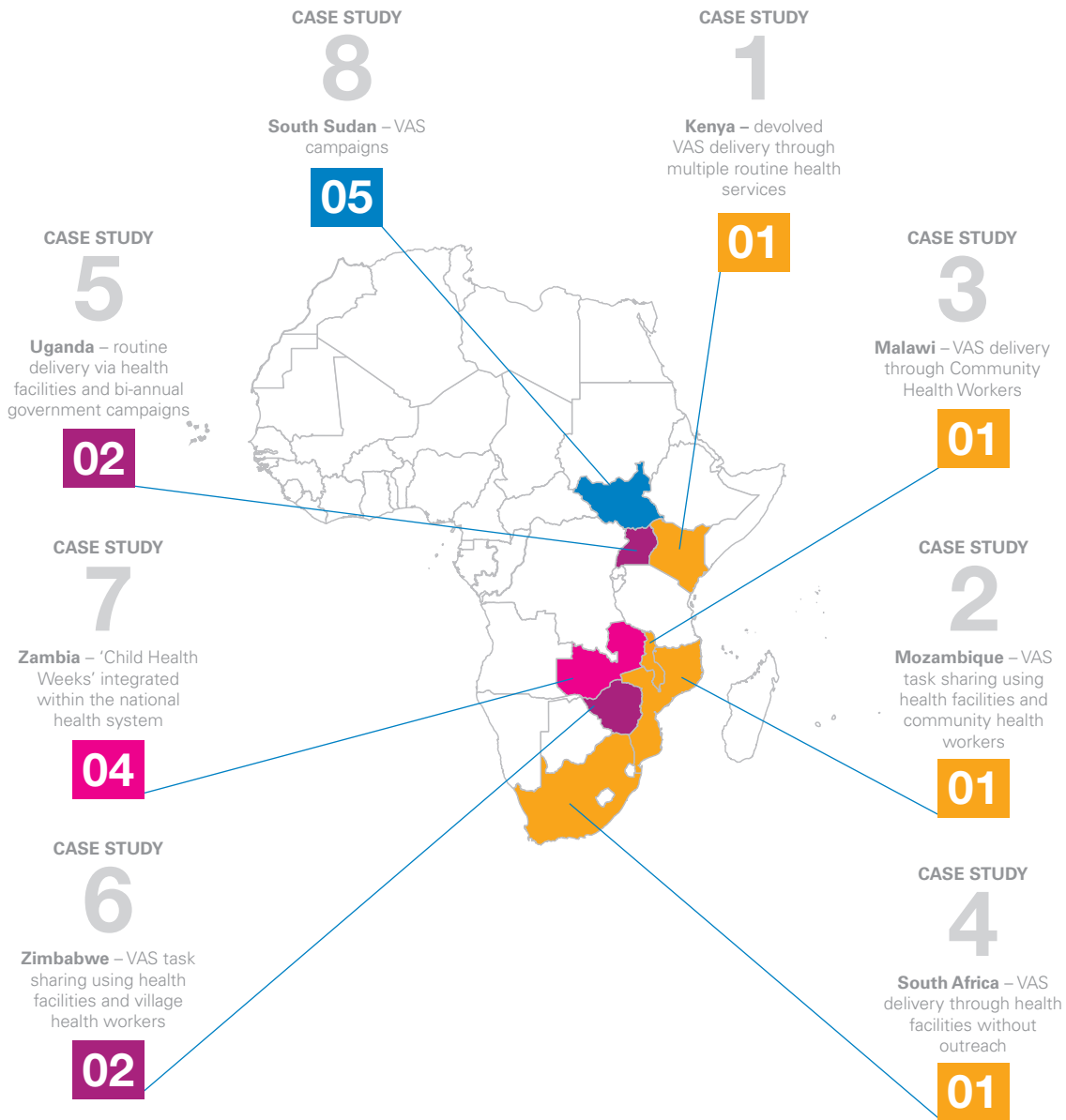
VAS is delivered solely through bi-annual campaigns delivered in parallel to government systems. Campaigns are fully donor supported and delivered outside of the health system, usually in humanitarian contexts where government systems don't exist or are very weak, either through paid incentives to government staff or implementing partners. VAS is not integrated into the national health system.

This approach is being used in most districts in South Sudan and some parts of Somalia where routine delivery is not possible. Case study one describes how this model is being used in South Sudan.



Case studies

The following case studies illustrate how the different approaches are being used in individual countries, highlighting their strengths, challenges, and enabling factors.



Kenya

CASE STUDY

1

01



Devolved VAS delivery through multiple routine health services (approach one)

Background: VAS was previously delivered alongside polio campaigns. When polio campaigns were phased out, VAS was integrated within 'Malezi Bora' (Child Health Days) that delivered multiple child health services to communities every May and November. High VAS coverage was achieved, but the approach was expensive, and it was difficult for all 47 counties to deliver during the same weeks.

Current approach: VAS is now delivered through health facilities during routine health appointments (for example for immunisations). This works well to reach children up to 24 months who regularly attend appointments. To reach children aged 25-59 months, counties also run 'VAS acceleration activities' over a 2–3-month period twice per year. Each county selects a package of delivery channels most appropriate for their context to achieve maximum coverage. This commonly includes delivery through Community Health Volunteers (CHVs), at Early Childhood Development Centres (EDCs), and within the standard package of emergency nutrition services in crisis-affected areas.

Coverage: 84% two dose coverage 2022 (Semester 1: 92%, Semester 2: 84%).

Strengths: Coverage is increasing for all age groups (6-59 months) (at 86% in 2022). The approach is much cheaper and allows counties to tailor approaches that work in specific contexts. This makes high coverage more likely and makes it more possible for counties to own and fund the approach themselves. Some counties are already allocating government resources to VAS delivery.

Challenges: The approach depends on political will within each county. If county governments do not support VAS, CHVs are not incentivized to deliver. Many counties still require external support for delivery and UNICEF still procures national VAS supplies. More advocacy is needed to improve ownership at both levels. As there is high turnover of CHVs, continued capacity building is needed which is time-consuming and expensive.

Enabling factors: Strong political will, government ownership and commitment at multiple levels – this was helped by UNICEF operational research that showed the viability of delivery through CHVs in Kenya and development of a VAS + deworming national guideline.

Coordinated support from partners for government at multiple levels.

Strong existing community health strategy and workforce (CHVs) that the approach was able to ride on. CHV capacity was built through delivery of a harmonized training pack for VAS that was cascaded to HW and CHV levels.

Integration of VAS into government health systems including monitoring integrated into District Health Information Systems (DHIS2) data collection; VAS capsules integrated into the national supply chain; VAS coverage integrated as a performance indicator into the contracts of key national health staff; integration of VAS into maternal and child health booklets for caregivers.

Future directions: Continue supporting uptake of the current approach to maintain high coverage.

Mozambique



CASE STUDY

2

01

VAS task sharing using health facilities and community health workers (approach one)

Background: From 2003, the Government began delivering VAS through health facilities. However, as coverage was low (60-70%), UNICEF and WHO began supporting campaigns. However, as campaigns were not always regular, in 2016-2017 the Government ceased using campaigns and adopted routine delivery using multiple delivery platforms.

Current approach: VAS is delivered through the routine system via three delivery platforms: Fixed posts (Health Centres), outreach activities (mobile clinics to hard-to-reach areas) and Community Health Workers (Agentes Polivalentes Elementares (APES)). VAS is included in outreach activities under the Reaching Every Community (REC) approach, through which mobile health teams delivery health service to remote areas.

Coverage: 72% two dose coverage 2022 (Semester 1: 88%, Semester 2: 72%).

Strengths: Coverage is high with the current approach and costs much less than campaigns. Most associated costs are for logistics and transport for mobile health teams. As government health staff are

used, additional incentives are not paid as it is part of the regular job description. Integrating VAS with other maternal and child health services boosts delivery of all services and provides motivation for caregivers to attend. As VAS is now integrated within the CHW package of services there is no need for additional training. VAS data is also now integrated within the online health management information system (HMIS) which leads to less missing data.

Challenges: Reaching older children continues to be a problem, as children over 12 months are less likely to attend health services. CHW messages around VAS need to be strengthened to combat this. Mobile health teams are hindered by a lack of available transport due to the high cost of maintenance and supplies of VA capsules are also a problem, particularly for CHWs.

Enabling factors: The lack of ongoing funding for campaigns led the government to adopt the routine approach. The new cadre of APESs and the REC approach were key enablers for VAS delivery via community outreach to boost coverage.

Future directions: The approach has been well incorporated into the health system. Health system strengthening efforts need to continue to support quality delivery.

Malawi

CASE STUDY

3

01



VAS delivery through Community Health Workers (approach one)

Background: VAS was previously delivered through bi-annual Child Health Days. This was expensive and relied on donor support but was justified while VAD prevalence was high (50% in 2001). The drop in VAD prevalence (to 3.6% by 2016) and donor fatigue led the government to look for alternative approaches. Between 2017 and 2020 delivery of VAS through routine facility- and community-based health services was tested in 10 districts. The pilot study found that routine delivery was both feasible and acceptable. This led to nation-wide scale up of the routine approach, the process of which is now complete.

Current approach: VAS is delivered by Community Health Workers (CHWs) alongside de-worming and alongside the Expanded Programme of Immunisations (EPI) delivered at fixed health facilities and outreach clinics. Coverage initially fell but increased as community acceptance grew and is now 100% for the 6–12-month age group. Coverage is lower for the 12–59-month age group and therefore the government is exploring the use of additional delivery platforms to reach this group, such as through Early Childhood Development (ECD) centres.

Coverage: 11% two-dose coverage 2022 (Semester 1: 11%, Semester 2: 11%).

Strengths: The approach is acceptable at community level given that CHWs are a well-accepted health cadre and caregivers do not have to travel to health facilities. The approach is also much cheaper than campaigns and therefore more sustainable.

Challenges: CHWs have less training than other cadres of health workers, which can compromise the quality of delivery without proper training and supervision. Reporting has worked well at lower levels but is hampered at higher levels due to the lack of staff to enter reports on DHIS2 at district level. This needs to be overcome. Coverage is lower in the 12–59-month age group and additional platforms are needed to reach this group. District-level VAD data could inform the prioritization of certain districts for outreach through ECDs, but disaggregated data doesn't currently exist.

Enabling factors: Vaccinations have provided an easy platform within which to integrate VAS, given that vaccinations are widely accepted and taken up in Malawi.

The presence of an existing paid community health workforce has enabled the delivery of VAS in the community. CHWs are not expensive to train and have the capacity to carry both vaccines, VAS and deworming medicine.

VAS and immunizations already used the same reporting system and supply chain system which made it simple to transition to integrated delivery.

Future directions: Routine delivery will continue. Implementation research is planned in 2022/2023 to test delivery platforms for older age groups, such as ECD sites.

South Africa



CASE STUDY

4

01

VAS delivery through health facilities without outreach (approach one)

Background: The government phased out use of campaigns between 2007 and 2009 due to their high cost and instead VAS is delivered through the routine health system.

Current approach: VAS is delivered to children aged 12-59 months through primary health care facilities, alongside child health services such as immunisations. This achieves high coverage for children aged 12-18 months but does not cover the 18-59-month age group and overall coverage never goes beyond 60%. Recently the Director General of Health approved the delivery of VAS by CHWs to improve coverage in the older age groups. Provinces can decide to use this approach or not, for example, via fixed ECD centres attended by CHWs.

Coverage: 44% two-dose coverage 2022 (Semester 1: 44%, Semester 2: 46%).

Strengths: Routine delivery is a low-cost approach – much less expensive than campaigns and therefore sustainable. Delivering VAS as part of a package of child health services also helps to boost uptake of child health services overall.

Challenges: Coverage is very low. Reaching the older age groups is challenging when using fixed health facilities as the main delivery platform. Delivery is also dependent on commitment and capacity of clinics to deliver VAS which can vary. There is little data on VAD to inform future programming.

Enabling factors: Full Government ownership and leadership of VAS delivery; VAS is considered part of routine health services rather than an ‘add on’.

VAS is fully integrated into the government system including the national supply chain (VAS is included in the essential medicines list and is not procured by UNICEF) and within routine monitoring via DHIS2.

VAS training is included in the training and supervision of health staff at clinic-level.

Future directions: VAS will continue to be delivered through health facilities, with some provinces using CHW delivery at ECD centres to improve uptake among older ages. There is some evidence that VA serum levels are high in some provinces such as Northern Cape due to high liver consumption. Evidence is needed to inform the rollback of VAS in areas such as these, although this is not currently a government priority.

Uganda

CASE STUDY

5

02



Routine delivery via health facilities and bi-annual government campaigns (approach two)

Background: VAS was previously delivered via Child Days Plus and Family Health Days run in parallel to the health system. In 2015, these were harmonised and embedded into government systems through the current approach.

Current approach: VAS is delivered continuously through the routine health system through static health facilities alongside delivery of routine health services, and through monthly community outreach by health workers to community sites. During outreach, health workers administer VA capsules and CHWs support with mobilisation and documentation. Bi-annual nation-wide catch-up campaigns are also run during the whole months of April and October - called Integrated Child Health Days (ICHDs). ICHDs are staffed by the same Health Workers, who provide more intensive outreach during these months to deliver a mix of child health services, including immunisations and VAS.

Coverage: 55% two-dose coverage 2022 (Semester 1: 68%, Semester 2: 55%).

Strengths: The strengths of routine delivery are that it is very cost-effective. However, coverage through routine delivery alone is low, particularly among children over 12 months who don't regularly attend health facilities, and children in communities without close access to health facilities. Catch-up campaigns ensure that these children are also reached.

Challenges: Campaigns are very expensive. ICHDs are supported with funds from UNICEF and multiple other partners. The Government would not be able to afford the high cost of capsules without this support. As partners procure capsules primarily for campaigns, supplies often drop between campaign months, which limits the availability of capsules for routine delivery. There is also less motivation to achieve high coverage through routine systems as catch-up campaigns exist. This is a key constraint for moving over to a fully routine system.

Enabling factors: Government commitment, partner support and a well-trained cadre of health facility staff are key enablers of the current approach.

Future directions: Transition to a full routine system would provide a more cost-effective, sustainable approach. However, Government is keen at present to continue ICHDs. More evidence is needed to advocate for a full transition.

Zimbabwe



CASE STUDY

6

02

VAS task sharing using health facilities and village health workers (approach two)

Background: Bi-annual Child Health Days were run out of health facilities and outreach points in the community from 2010 to 2011 to raise VAS coverage. The approach was successful (80-90% coverage) but very costly. The approach was discontinued in 2012 due to lack of funding. From then VAS was delivered at health facilities alongside routine visits for immunizations and growth monitoring, down to lowest level health centres. High coverage was achieved for the 6–12-month age group (>90% coverage) but coverage was very low 18-59 months (as low as 20% in some areas). In 2017, the MoH piloted delivery of VAS by Village Health Workers (VHWs) in one province. High coverage was achieved in all age groups and the approach was taken to scale in 2021.

Current approach: A task sharing approach is used, whereby health workers deliver VAS at routine health facility visits alongside immunizations and growth monitoring, and VHWs deliver VAS in communities during one specified week each semester (decided at district level). These are called “Community Vitamin A supplementation weeks (cVAS).” Delivery in health facilities is monitored through DHIS2, while cVAS is monitored through a parallel system, and then fed back into DHIS2 at national level. The RapidPro platform is used by VHWs to submit real time monitoring data which is used to validate paper reports.

Coverage: 68% two-dose coverage 2022 (Semester 1: 77%, Semester 2: 68%).

Strengths: The task sharing approach reaches all age groups. The approach is low cost compared to CHDs and only requires costs of incentives, training and supervision for VHWs. Given that VHWs carry multiple responsibilities, concentrating on VAS during only two weeks of the year maintains VHW

commitment and motivation. Other services such as MUAC screening can be carried out alongside to boost coverage. Allowing districts to select the week for cVAS ensures district-level ownership, commitment and coordination.

Challenges: Coverage has been low but is now increasing. The workload for VHWs is quite high which must be kept in mind. Data quality can be a challenge and therefore close monitoring is required (introduction of RapidPro has helped overcome this). Double dosing of younger children is a risk of this approach which requires consideration.

Enabling factors: Existing cadre of VHWs throughout the country. These are volunteers selected by their communities who are trusted by community members. They have in the past received a monthly allowance (although not currently), training and capacity building.

Training and supervision for VHWs specifically for VAS delivery including a half day refresher training before each intensive campaign delivered by health workers. Training includes how to submit proper records to address inaccurate recording. A strong ongoing relationship with regular contact between HWs and VHWs supports this.

Resources and supply chain to cover capsules, scissors and records for VHWs in the amounts necessary to cover the number of children on their registers. Resources are also needed to cover VHW lunch allowances to boost motivation.

Strong government ownership and political will for VAS and community health in general.

External support by Nutrition International (Government to take over once economy improves).

Future directions: Continued support for this model of delivery to improve coverage. The Government may in future consider VAS at health facilities for children aged 6-12 months and by VHWs for 12-59 months to avoid double dosing of young children.

Zambia

CASE STUDY

7

04



'Child Health Weeks' integrated within the national health system (approach four)

Background: VAS was integrated into polio vaccination campaigns. However, since they were phased out over 10 years ago, government-run bi-annual Child Health Weeks have been used.

Current approach: Child Health Weeks are well-accepted in Zambia and integrated into the national health system. Over one to two weeks in June and November each year, VAS and deworming are delivered at health facilities, additional health outposts and community points by health workers as a normal part of their role. A team of health workers (nurses, clinical officers and nutrition officers) create a schedule that spreads them across their catchment area for maximum geographical coverage. Community Health Volunteers (CHVs) mobilize caregivers to attend, and Child Health Week are advertised in local media. VAS and deworming are the main services delivered although Child Health Weeks can be used to boost other services such as immunisations. Any leftover VAS capsules are delivered at health facilities during routine appointments to children who did not receive supplements during CHWs.

Coverage: 97% two-dose coverage 2022 (Semester 1: 97%, Semester 2: 99%).

Strengths: CHWs are well-accepted by health workers and community members in Zambia. They are well attended and lead to 90%+ coverage in all age groups (6-59 months). The approach has been successfully embedded within the health system, and within routine tasks of health workers, and the national supply chain. Districts fund the approach, often by mobilizing partner resources to fund logistics and transport, and/or allocating district funds. The approach helps to overcome constraints in the health system in the supply and demand of health facility services (health workers being overwhelmed with routine tasks and long distance to health facilities for many communities).

Challenges: The Child Health Week approach is more expensive than continuous delivery at health facilities, but enables high coverage of VAS including for the older age groups. During COVID-19 health facilities/ posts became very congested during Child Health Weeks. Therefore, more health outreach posts were opened to spread attendance. As Child Health Weeks are well attended, other child health services often ride on them, which can run the risk of health workers becoming overloaded with tasks. Monitoring is not yet embedded within national health information system (HMIS) standard reporting tools but uses a separate reporting system which is fed to national level to calculate coverage.

Enabling factors: Strong government ownership from central to devolved levels with integration of VAS into district-level annual workplans.

A strong health system with capacity at health facility and community levels to support delivery and integration of VAS into tasks.

Acceptance of bi-annual campaigns within the community helped by community sensitization over many years and use of media to promote the timings of Child Health Weeks (television and radio).

Active supportive supervision from central and provincial levels with government staff regularly visiting districts to monitor delivery.

Partner provision of VAS capsules to keep costs low for government.

Future directions: As long as VAD continues to be a problem, Child Health Weeks will continue to be run in Zambia. Results of a micronutrient deficiency survey will soon be released. If VAD is no longer a problem in some parts of the country, it is likely that Child Health Weeks will still be run but will focus on other services. UNICEF is supporting the Government of Zambia to explore ways to improve the diets of young children to reduce the problem of VAD, including use of multiple micronutrient powders (MNPs).

South Sudan



CASE STUDY

8

05

VAS campaigns (approach five)

Background: VAS and deworming were previously delivered via bi-annual polio campaigns. Since the eradication of polio in South Sudan in 2020, VAS has been delivered through other campaigns.

Current approaches: VAS and deworming are integrated into existing campaigns wherever possible, for example in 2020 VAS was integrated within a measles follow-up vaccination campaign in response to a measles outbreak. When no other campaigns are happening, VAS and de-worming are delivered through standalone campaigns, as was the case in semesters one and two of 2021 and semester one of 2022. In this approach VAS is delivered within the community during specified weeks. This is the approach used in 76 out of 79 counties (3 remaining counties covered by pilot programme described below).

Approaches being piloted: In 2020, delivery of VAS and deworming as part of a package of health services was trialled for internally displaced people (IDPs) in a conflict affected state (Jonglei) with support from implementing partners and UNICEF.

Between 2021 and 2022 delivery of VAS and deworming in government health facilities was trialled in three more stable counties. Community Nutrition Volunteers (CNVs) identified and registered children in their catchment area during quarterly Mid-Upper Arm Circumference (MUAC) screening and mobilized caregivers to attend their nearest health facility during a specific one-to-two-week window for VAS and deworming. Those that did not attend were followed up by the CNVs within this supplementation period and brought to the health facility for VAS.

Coverage: 89% two dose coverage 2022 (Semester 1: 93%, Semester 2: 89%).

Strengths: The standalone campaign approach achieves high coverage and reaches children in the many hard-to-reach populations in South Sudan.

The Jonglei pilot showed that intensive delivery of VAS and deworming as part of a package of health services works to achieve high coverage in areas where populations are densely congregated. The 2021-2022 pilot showed that delivery of VAS and deworming by health facilities using CNVs for community mobilisation is a far less expensive approach and can help to build capacity at community and facility levels.

Challenges: Both standalone campaigns and delivery of VAS within a package of services to IDPs are highly resource intensive in terms of human resources, supplies, logistics and monitoring. Both approaches rely on heavy external financial and logistics support. Delivery through health facilities in more stable areas of the country provides a much lower cost alternative. However, early results of the 2021-2022 pilot showed that caregivers were reluctant to travel long distances to health facilities to receive one service, and some health facilities were inaccessible during the pilot period due to the changing security situation and flooding. Coverage was therefore much lower than through campaigns.

Enabling factors: The high level of partner financial and logistical support enabled bi-annual standalone campaigns and high coverage in hard-to-reach areas.

Future directions: South Sudan will likely adopt a mixed (hybrid) approach. The campaign model will continue in conflict-affected areas, hard-to-reach areas, and areas with high concentrations of IDPs. Models to deliver VAS and deworming in more stable areas of the country will continue to be explored, such as delivery alongside other health and multi-sectoral services at health facilities, and adoption of CHD (Child Health Days) run closer to communities. In addition, UNICEF and partners are advocating to the Ministry of Health to allow CNVs to deliver VAS at community level to bring VAS delivery closer to communities and overcome poor attendance at health facilities.

Discussion

The experiences of countries in the ESA region described here demonstrate that multiple options exist for delivering VAS to children aged 6-59 months. In general, countries are moving away from campaign only models which are extremely costly and unsustainable for most Governments. This is except for extremely fragile contexts where health systems are very weak, or countries where Community Health Events (CHEs) are widely accepted and well attended, and delivery costs are largely absorbed by Government (Rwanda and Zambia).

In all other countries, VAS is now delivered during routine appointments for child health services at health facilities. This is a vastly lower-cost approach and effective for achieving high coverage in the younger age group (6-12 months). However, health facility delivery alone does not adequately reach the 12-59 month age group and children in hard-to-reach areas, and therefore must be accompanied by some form of community outreach. In some countries, this is achieved through bi-annual campaigns (CHEs). Supplemental campaigns may be heavily dependent on donor funds and partner support, or may be well-integrated into government systems, plans and budget lines. The former appears to lead to a more ad hoc approach, while the latter, while still very expensive, leads to more regular, reliable delivery.

To achieve the same high coverage but at lower cost, some countries in the region are opting out of campaigns and embedding VAS delivery within routine community-based services, whether health or ECD. Countries such as Kenya, Malawi, and Mozambique are forging the way in this respect by embedding direct VAS delivery within the remit of the community health workforce. The pre-requisite to this approach is the existence of a paid cadre of community health workers who can be trained and equipped for direct supplement delivery. Delivery through ECD centres is another platform that can be used for continuous delivery in the community, but

this is relatively untested to date. The experience of Eritrea shows that similar models can be applied in more fragile contexts by integrating VAS within the remit of mobile health teams that target hard to reach populations. In this case the high cost of targeted mobile health teams must be weighed against the likely higher cost of the blanket campaign only model. Table 2 describes the contexts that each of the different approaches are most appropriate for and their potential disadvantages that need to be overcome. Countries can use this table to identify system readiness for the adoption of routine approaches.

To inform all approaches there is a need for better quality information. This includes up to date, quality data on vitamin A deficiency to inform the targeting of resources. Where results from micronutrient surveys are not available, proxy indicators can be used to inform targeting, such as child mortality, child morbidity, disease outbreaks and diet quality. Improved methods are also needed to monitor two dose coverage of VAS. Current monitoring is based on approximations and assumptions and a model designed for monitoring the coverage of bi-annual campaigns. More refined methods for measuring the proportion of children fully protected are urgently needed in the context of continuous delivery of VAS through routine child health services to help drive progress.



Conclusion

Vitamin A supplementation (VAS) must remain a priority in Eastern and Southern Africa as long as child diets remain poor. Countries in the region are shifting away from delivering VAS through bi-annual campaigns towards lower-cost, more sustainable approaches. In almost all countries, VAS is now delivered within the routine package of child health and nutrition services delivered via fixed health facilities. This provides a very low-cost approach that is effective in reaching children aged 6-12 months and should be scaled up in all contexts. However, to reach children aged 12-59 months and children in hard-to-reach populations, it is essential that this is accompanied by some form of community outreach.

Where a strong cadre of community health staff exists, continuous delivery of VAS can be integrated into the routine tasks of CHWs. Where CHW capacity is low, while capacity is being strengthened, countries can continue using bi-annual child health events (CHEs). Wherever possible, CHEs can be integrated into government workforce tasks and schedules and deliver multiple child health and nutrition services such as immunisations, growth monitoring and Social and Behaviour Change (SBC) to keep costs as low as possible and increase

motivation for caregivers to attend. To reach hard-to-reach populations, countries can capitalize on opportunities such as mobile health teams or 'zero coverage' campaigns.

Donor investments continue to be needed to strengthen national systems, support governments as they transition to routine models of VAS delivery and support quality studies to inform the future targeting of resources.

TABLE 2

Considerations for adopting different models for VAS delivery

| Approach | Contexts most suited to | Disadvantages |
|---|--|--|
| <p>1. Continuous delivery through routine health services + continuous community outreach</p> | <ul style="list-style-type: none"> • Strong health systems including strong country-wide community health workforce ideally paid • Strong coordination between facility and community health workforces • High government commitment/ political will and ownership of VAS • Devolved health governance structures • Capacity to absorb majority of VAS costs into national/ district budgets (or commitment to do so in future) | <ul style="list-style-type: none"> • Requires ongoing commitment, funding and training of community health workforce |
| <p>2. Continuous delivery through routine health services + regular government campaigns</p> | <ul style="list-style-type: none"> • Strong health facility services, but weaker community health workforce • High uptake of facility-based child health services (e.g., immunisations) in the 6-12 month age group • High community acceptance and attendance at child health events by caregivers of children 12-59 months • Government can absorb most CHE costs | <ul style="list-style-type: none"> • Expensive (although less expensive than campaign only models) • Health staff unavailable to deliver routine child health services during campaign weeks • Requires a parallel reporting system • Possibility of double dosing younger age groups (due to use of parallel systems) |
| <p>3. Continuous delivery through routine health services + parallel catch-up campaigns</p> | <ul style="list-style-type: none"> • Strong health facility services, but weaker community health workforce • High uptake of facility-based child health services (e.g., immunisations) in the 6-12 month age group • Funding available to support bi-annual campaigns/CHEs (external or government) | <ul style="list-style-type: none"> • Expensive (although less expensive than campaign only models) • Possibility of double dosing younger age groups (due to use of parallel systems) |
| <p>4. Government campaigns only</p> | <ul style="list-style-type: none"> • High community acceptance and uptake of bi-annual Child Health Events • Health workforce has a strong presence at health facility and community levels • Routine capacity of health workforce is constrained • Access to health facilities is constrained • Government ownership and commitment to CHEs • Government can absorb most CHE costs | <ul style="list-style-type: none"> • Expensive • Likely requires some ongoing external support • Health staff unavailable to deliver routine child health services during campaign weeks • Requires a parallel reporting system |
| <p>5. Parallel campaigns only</p> | <ul style="list-style-type: none"> • Emergency-affected, unstable, with hard-to-reach populations • Weak health system with low coverage of other child health services, or health services mainly partner-supported • Government financing of health and nutrition is limited or non-existent • High level of donor funding for VAS and logistics support available | <ul style="list-style-type: none"> • Expensive • Unsustainable long term • Unsuitable as context stabilizes • Does not help build government systems • Requires a parallel reporting system |

TABLE 3

Description of country-level VAS delivery approaches

| Country | Predominant approach | Two dose coverage (2022)* | Delivery platform | Delivery description | Workforce | Funding | Pilot schemes | Future intentions for delivery |
|--------------|----------------------------------|---------------------------|--|--|--|---|---------------|--|
| Kenya | 1 Routine + continuous community | 84% (S1: 92, S2:84) | Routine health facility and VAS 'acceleration activities' (embedded within government systems) | At HFs alongside routine services; and through CHW outreach and piggy backing onto emergency services | Health workers | UNICEF in-kind (capsules); UNICEF funding; NGOs | | |
| Lesotho | 1 Routine + continuous community | 19% (S1:19, S2:40) | Routine health facility with community outreach | At HFs alongside EPI with some community outreach | Health workers | UNICEF in-kind (capsules); NGOs | | |
| Malawi | 1 Routine + continuous community | 11% (S1:11, S2:11) | Routine health facility with community outreach | Phased out Child Health Days and now delivering at HFs alongside EPI and within CHW community outreach activities where capacity allows | Paid CHWs | UNICEF in-kind (capsules); NGOs | | To explore embedding VAS within ECD centres to capture older children |
| Mozambique | 1 Routine + continuous community | 72% (S1:88, S2:72) | Routine HF-level with outreach through mobile health teams and community health workers | At HFs alongside EPI/ routine immunizations/ IMCI/ growth monitoring; mobile health teams to hard-to-reach areas, and delivery via APEs (CHWs) | Health workers; Paid CHWs | UNICEF in-kind (capsules); NGOs | | |
| South Africa | 1 Routine + continuous community | 44% (S1:44, S2:46) | Routine health facility with some community outreach | At HFs delivered within IMCI with some community outreach at ECD centres. | Health workers; Paid CHWs at ECD centres | Government | | |
| Botswana | 2 Routine + integrated campaign | 0 (S1:0, S2:68) | Routine HF-level; CHEs (embedded within government health system) | Health facility alongside routine services; plus regular outreach through Child Health Days (alongside vaccinations) | Health workers; National Service cadre attached to health facilities | UNICEF in-kind (capsules); government | | |
| Eswatini | 2 Routine + integrated campaign | 51% (S1:51, S2:54) | Routine HF-level; CHEs (embedded within government health system) | Within routine Immunizations at HFs; and campaigns within Child Health Days | Health workers | UNICEF in-kind (capsules); UNICEF grant; government; NGOs | | Government plans to revive outreaches for delivery of VAS with support from UNICEF |
| Ethiopia | 2 Routine + integrated campaign | 68% (S1:68, S2:75) | CHEs; other campaigns; routine HF-level | Within Child Health Days and Measles vaccination campaigns; and within EPI at health facilities | Health workers; Paid CHWs | UNICEF in-kind (capsules); UNICEF grant; NGO | | |

| Country | Predominant approach | Two dose coverage (2022)* | Delivery platform | Delivery description | Workforce | Funding | Pilot schemes | Future intentions for delivery |
|----------------------|------------------------------------|---------------------------|---|--|--|--|---|--|
| Namibia | 2 Routine + integrated campaign | 60% (S1:60, S2:87) | Routine health facility and CHEs (embedded within government health system) | Delivered within routine services, with outreach through annual immunisation Week and Maternal and annual Maternal and Child Health Week | Health workers | Government; UNICEF grant | | |
| Uganda | 2 Routine + integrated campaign | 55% (S1:68, S2:55) | Routine HF-level plus routine community-level via monthly outreach; bi-annual 'catch up' CHEs | Delivered through routine services, monthly community outreach, and bi-annual Child Health Days embedded within the government system | Health workers supported by volunteer CHWs | UNICEF in-kind (capsules); NGO; bi/ multi-lateral funding | | |
| Zimbabwe | 2 Routine + integrated campaign | 68% (S1:77, S2:68) | Routine health HF-level; CHEs; routine community-level in some areas | At HFs alongside EPI; campaigns within Child Health Days; and bi-annual campaigns through VHWs in some areas | Health workers; village health workers | UNICEF in-kind (capsules); UNICEF grant | Bi-annual community campaigns by VHWs funded by Nutrition International | |
| Angola | 3 Routine + parallel campaign | No data | Routine HF-level; CHEs | At HFs alongside EPI (no outreach); campaigns within Child Health Events | Health workers | UNICEF in-kind (capsules); NGOs | | |
| Eritrea | 3 Routine + parallel campaign | No data | Routine health facility with mobile health teams; and ad hoc catch up campaigns | At HFs alongside EPI and within outreach and mobile health services in hard-to-reach areas | Health workers; Paid CHWs; volunteer CHWs | UNICEF in-kind (capsules) | | |
| Madagascar | 3 Routine + parallel campaign | 34% (S1:88, S2:34) | Routine health facility with community outreach plus catch-up campaigns | At HFs alongside routine vaccination program with some community outreach plus catch up CHEs | Health workers; Paid CHWs | UNICEF in-kind (capsules); NGOs; Bi/ multi-lateral funding | | Intention to explore alternative modes of delivery |
| Somalia (some areas) | 3 Routine + parallel campaign | 79% (S1:79, S2:87) | Polio SIAs; CHEs; routine HF in some areas | Within Polio vaccinations and Child Health Days in campaign areas; at HFs alongside EPI in some areas | Health workers | UNICEF in-kind (capsules); UNICEF grant | | |

| Country | Predominant approach | Two dose coverage (2022)* | Delivery platform | Delivery description | Workforce | Funding | Pilot schemes | Future intentions for delivery |
|----------------------|----------------------------|---------------------------|---|--|---|--|---|---|
| Burundi | 4 Integrated campaign only | 9% (S1:70, S2:9) | Other campaigns | Bi-annual campaigns alongside EPI and deworming | Health workers; Paid CHWs | UNICEF in-kind (capsules); UNICEF grant; government; NGOs; GAVI | Piloting integration of VAS into routine services (6-23 months in HF and 24-29 months CHWs) | To move to routine delivery by scaling up pilot approach |
| Rwanda | 4 Integrated campaign only | No data | Child Health Events (CHEs) (embedded within government health system) | Within Child Health Weeks (immunization, deworming, MNPS; family planning; wasting screening; malaria prevention; health education) | Health workers; volunteer CHWs | UNICEF in-kind (capsules); government | | |
| Tanzania | 4 Integrated campaign only | 90% (S1:90, S2:91) | Campaigns (Child Health Events) | Within Child Health Events (deworming and MUAC screening) | Health workers; Paid CHWs; volunteer CHWs | UNICEF in-kind (capsules); UNICEF grant; government; NGOs; bi/ multi-lateral funding | Piloting integration of VAS into routine systems funded by Nutrition International to test system readiness | |
| Zambia | 4 Integrated campaign only | 97% (S1:97, S2:99) | CHEs – Child Health Weeks (embedded within government health system) | Delivered within Child Health Weeks alongside other health and nutrition services, plus through health facilities with some outreach using leftover capsules from Child Health Weeks | Health workers; volunteer CHWs | UNICEF in-kind (capsules); government; Scaling up Nutrition | | |
| South Sudan | 5 Parallel campaign only | 89% (S1:93, S2:89) | Campaigns | Delivery via campaigns in most areas of the country; integrated into CNVs functions in some areas | Health workers; Paid health workers; volunteer CNVs | UNICEF in-kind (capsules); bi/ multi-lateral funding | Piloting integration of VAS into routine services in 3 counties (along with MUAC screening) | To scale up integration within MUAC screening in more stable counties |
| Somalia (some areas) | 5 Parallel campaign only | 79% (S1:79, S2:87) | Polio SIAs and CHEs | Within Polio vaccinations and Child Health Days in campaign areas | Health workers | UNICEF in-kind (capsules); UNICEF grant | | |

* UNICEF global data for two dose coverage: Two-dose VAS coverage is an estimate of the percentage of children aged 6–59 months who received two doses of VAS spaced about 4 to 6 months apart in a calendar year. The semester which achieved the lower coverage between semester 1 and semester 2, is used as a proxy (e.g. if semester 1 achieved 98 per cent coverage and semester 2 achieved 50 per cent coverage, the two-dose coverage is reported as 50 per cent). In cases where there are only data for one of the two annual semesters (i.e. the other semester did not have any data or did not have an approved coverage estimate), the two-dose coverage is reported as “no data”. In cases where more than 8 months has occurred between the event in semester 1 and semester 2, the two-dose coverage is reported as 0 per cent.

