

Managing change: Integrating vaccine and medicine supply chains

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Overview

- Integrating vaccines and other health products supply chains can improve efficiency, due to economies of scale and supply chain performance.
- The process of integrating supply chains takes several years to ensure stakeholder buy-in and manage change to help people to adapt.
- Successful supply chain integration requires government stewardship, collaborative planning, phased implementation and leveraging existing opportunities.

Improving supply chains through integration

Many countries rely on external development assistance for health care, which has resulted in individual disease specific programs with separate supply chains, such as vaccines, malaria, HIV/AIDS, family-planning, essential medicines and other health products. Specifically, vaccine supply chains require cold chain to maintain their potency, which often means they have a separate supply chain.

Integrating supply chains allows for cost sharing, which helps to:

- Optimize the use of resources by eliminating duplication and reducing both operational and capital expenditure.
- Maximize transport and storage utilization.
- Leverage cost savings to increase the ability to finance ongoing improvements.
- Decrease health worker time on logistics.

The supply chain integration process requires intensive planning and coordination. Despite its challenges, integrating vaccine supply chains with carefully selected similar products at specific stages in the supply chain will greatly enhance the effectiveness and efficiency of public health supply chains in under-resourced environments¹. While there are examples of supply chain integrations in countries, there is limited insight into the process and experiences to manage this change. VillageReach led the integration of health product supply chains in Mozambique, and here we highlight the process and how it was managed. These recommendations could help other countries as they consider supply chain integration, and VillageReach would be a strong partner for governments and organizations looking to implement supply chain integration.

¹ Yadav P, Lydon P, Oswald J, Dicko M, Zaffran M. Integration of vaccine supply chains with other health commodity supply chains: A framework for decision making. *Vaccine*. 2014 Nov 28;32(50):6725-32.

Case study: Integrating supply chains in Mozambique

BACKGROUND

Mozambique's Ministry of Health (Ministério da Saúde or MISAU in Portuguese) implemented a plan called Plano Estratégico de Logística Farmacêutica (PELF) to address the challenges linked to handling high volumes of commodities and high costs associated with improving access and equity in health care. The PELF authorized the Central Medical Store (CMAM) to fully integrate the health supply chains to improve health product delivery across the country. In partnership with government leaders, VillageReach built on the strength of the country's private sector to support this work. Although integrating vaccines into the supply chain began in 2019 in Zambézia province, it would not have been possible without significant policy and enabling conditions started in 2013. We show the process involved in supply chain integration in Figure 1.

Figure 1: Timeline to supply chain integration in Mozambique



A STEP-BY-STEP APPROACH

Change is constant in health care. Managing change is critical to effectively implement strategies and help people to adapt to change. CMAM and its partners took a step-by-step approach in Mozambique to mitigate any potential disruptions.



Step one: Engage stakeholders to secure buy-in

VillageReach conducted a landscape analysis to identify opportunities and challenges to initiate discussions for stakeholder buy-in. CMAM led consultations to understand the scope and secure buy-in among donors, stakeholders and partners. USAID and Gavi were two key donors for health commodities in Mozambique, and they needed to align on supply chain distribution foremost. As a part of this process, coordination meetings were organized with all stakeholders at high levels to align on goals and objectives for supply chain integration. VillageReach also assessed EPI preparedness to identify EPI perceptions, identify risks and apply mitigation strategies.



Step two: Phased implementation strategy and standard operating procedures (SoPs)

National and provincial stakeholders developed a detailed implementation strategy, incorporating feedback from consultations and workshops. This strategy outlined steps to fully integrate all health supply chains with performance management metrics for tracking and monitoring. The implementation was phased based on parameters, such as functions and geography, and SOPs were developed to detail and guide distribution and staff training.



Step three: Pilot and implement integration

Vaccine integration was piloted first in Zambézia province in 2019 and then scaled gradually to Inhambane, Nampula, Sofala and Tete provinces in 2020. By 2021, integrated supply chains were implemented in 10 out of 11 provinces. Any challenges identified in the pilot were addressed as integration was scaled to other provinces.

CHALLENGES ENCOUNTERED

The integration of vaccines into the health supply chain in Mozambique did not go without challenges. The major challenges are identified below:

Different sources of funding and implementation plans: As vaccines were integrated into the health supply chain, there were two separate donor funding streams for last-mile distribution—USAID funding for vaccines and other essential commodities and Gavi funding for vaccines only, indicating that vaccine distribution continued to be done in parallel across some facilities. After strategic discussions at the global level, alignment between donors occurred, leading to a more streamlined funding approach for vaccine integration.

Coordination between government stakeholders (Partners, CMAM, EPI, etc.): Aligning distribution schedules required coordination between EPI, CMAM and other partners; this alignment was essential to the successful integration of vaccines with other essential health commodities. When distribution schedules were not aligned at the beginning, vaccines had different storage locations and were not available for supply during the medicine distribution cycle. Vaccine distribution frequency was also affected by the available health facility cold chain storage. Increased and improved coordination and planning was required by government stakeholders at every distribution cycle. To streamline distribution cycles, EPI was notified in advance by contacting dedicated point of contacts to ensure vaccines needed for the supply were prepared and available before the start of the distribution cycle.

Detailed requirements for the Integration: To ensure vaccines are potent and effective, they require cold chain during transport. The vaccines were going to leverage the USAID-funded direct distribution of essential medicines to facilities; the private sector operates this stream and are not used to transporting vaccines. The EPI team requested that private logistics undergo the necessary training on handling vaccines to mitigate any potential issues. CMAM worked together with the EPI team to plan and conduct the necessary training. SoPs were developed to guide the process of transporting and handling vaccines for future reference.

The key ingredients: identify, plan and collaborate

Managing change is essential to successful integration. Integrating vaccines into an existing health supply chains introduces a new way of running operations, performing tasks and managing performance. A clear and detailed approach to managing the changes that follow is critical. There is no universal design approach to supply chain integration, and it should be adapted to country context.

RECOMMENDATIONS

Based on our experience in Mozambique, there are important considerations to support future supply chain integrations in countries.

Government stewardship: It is crucial that supply chain integration in the public sector is led by the government to ensure sustained gains and impact at scale. Integration should align with government priorities and strategic plans and should identify specific government agents that will drive the implementation process as well as performance management.

Understand the country context: Identify the specific challenges and bottlenecks that are country-specific (e.g. cold chain capacity in Mozambique) and reflect the different perspectives from government partners, such as CMAM and EPI. These shed light on potential barriers to integration early on in the process. Solutions to address these gaps should be co-developed with government and other relevant stakeholders after careful consideration of the context. There is no one solution to addressing gaps across different geographies; solutions should be context-specific, recognizing existing strengths and opportunities.

Planning is key: Planning should be a collaborative process with key stakeholders, and it should recognize and acknowledge stakeholders' roles, priorities and goals. Activities should not be implemented without developing plans that recognize potential risks and how these will be mitigated.

Phased implementation: As shown in our step-by-step approach, phased implementation allows us to fully understand the requirements to manage medicines in different settings; ensure adequate distribution and storage capacity is created over time; allow time for human resource development needs to be addressed progressively; establish adequate structures, roles and responsibilities, including strengthening vaccine management skills at every level of the supply chain; and learn and adapt processes such as aligning monthly planning cycles. The distribution cycles for essential medicines and vaccines are different in Mozambique and similar countries, so for transport to be integrated, the cycles need to be aligned.

Sustain gains: To maintain vaccine integration gains, cold chain needs should be assessed and maintained across the country to avoid disruptions to the supply chain or wastage of vaccines. The frequency of vaccine distributions should be based on the cold chain storage capacity of each facility. In Mozambique, cold chain capacity is inconsistent and needs to be improved to continue integration momentum and increase scale across the country.

Leverage existing opportunities: Integration efforts should leverage existing strengths and opportunities, including current funding availability, such as the USAID-funded Last Mile Distribution or GAVI funding for EPI. There are additional questions to consider: what funding is currently available? Which partners are supporting the supply chain? What competency currently exists? What resources are available?

VillageReach has worked with the Mozambique government and the private sector to drive sustained impact at scale for over 20 years. Today, our supply chain design approach, in collaboration with Mozambique's Ministério da Saúde, helps ensure health products are available to under-reached communities at a national scale.

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