



USAID | DELIVER PROJECT

Exploring Supply Chain Augmentation for Malaria Commodities



USAID | DELIVER PROJECT 2009

Augmenting supply chain systems can help commodities reach their destination efficiently, help distribute them after they are in-country, and support host systems to manage and monitor them. Here, antimalarial drugs arrive in Ghana.

“...augmenting logistics is about providing extra resources to meet operation requirements.”

--World Food Programme

OCTOBER 2012

This publication was produced for review by the U.S. Agency for International Development. It was prepared by the USAID | DELIVER PROJECT, Task Order 7.

U.S. Agency for International Development
www.usaid.gov

A primary objective of the USAID | DELIVER PROJECT, Task Order 7 (Malaria) is to strengthen in-country supply systems and the capacity for effectively managing malaria commodities, and to help ensure that quality commodities reach end users when and where they need them. The project usually supports ministries of health, national malaria control programs, and host country public sector supply chains and central medical stores. In some cases, these supply chains require additional support, including both long- and short-term supply chain augmentation measures that range from enhancing existing systems to implementing entire parallel systems.

Supply chain augmentation includes enhancing logistics by providing extra resources to meet operational requirements, (Scott-Bowden [no date]) often beyond what the host government normally has available. Supply chain augmentation can take many forms, from having a specific role—providing short-term additional warehouse space—to a full scale operation similar to that seen in parallel supply chains.

In recent years, larger initiatives and financing mechanisms, including the President’s Emergency Fund for AIDS Relief (PEPFAR), President’s Malaria Initiative (PMI), the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), and others, have significantly increased the resources available for commodities and the volume of goods moving through many public sector supply chains around the world. This boon has significantly improved the availability of commodities to those in need. It has also highlighted the need to strengthen supply chains as a way to ensure that these goods reach their intended beneficiaries in an efficient and transparent manner.

A variety of scenarios can lead to the decision to augment a pre-existing supply chain. In some cases, the sheer increase in volume of commodities can quickly outpace a public-sector distribution system, both a variety of scenarios can lead to the decision to augment a pre-existing supply chain. In some cases, the sheer



PRESIDENT'S MALARIA INITIATIVE



increase in volume of commodities can quickly outpace a public-sector distribution system, both warehouse and transport capacity. Supply chain augmentation can also be investigated as an option for public-sector supply chains when the current system is not working, or when a greater degree of accountability is needed. Augmentation can also be used when a specific product does not conform to the supply chain already in place, such as the need for a strong cold chain for vaccine distribution or cases where the volume of a product, such as long-lasting insecticide treated bed nets, exceeds the storage and distribution capacity of the system in place. There may also be cases when the public sector system can provide a higher degree of effectiveness.

The decision to augment supply chains can be challenging and politically sensitive. While the need for supply chain accountability is often a critical focus, the logistics of moving toward privatization may not appeal to host governments and other development partners; their concerns should be seriously considered. Every situation where augmentation is being considered should take into account positive benefits—increased transparency and effectiveness—as well as potential political fallout, and, perhaps, an increased cost of doing business.

Box 1. Angola: Augmenting Distribution

Sometimes augmentation is not just adding layers but subtracting them. In response to commodity security challenges for PMI commodities at the central level in Angola, the project was responsible for distribution to the provincial levels. This was a unique opportunity to implement procedures where commodities from various suppliers were consolidated into one air charter in Europe, then distributed directly to provinces immediately after unloading the aircraft. This eliminated the central-level storage, and reduced the risk of theft at the central level.

Augmenting Options

Augmenting a supply chain can take many different forms, depending on the type of support needed or the function to be supplemented.

Procurement Outsourcing

Many countries use a procurement agent for procuring pharmaceuticals and medical supplies. A procurement agent can be more expeditious if the agent already has a relationship with the vendor; and sometimes can produce savings if the agent is procuring large quantities of the commodity needed. Often countries use United Nations agencies, such as United Nations Development Programme (UNDP), United Nations Children’s Fund (UNICEF), and United Nations Population Fund (UNFPA) to procure various health commodities. Countries may also have the option of procuring supplies through the voluntary pooled procurement, a Global Fund procurement support service that secures goods for more than 40 countries.

Distribution Outsourcing

Freight forwarding is another area where supply chain augmentation may provide additional support to the host country supply chain. The freight forwarder will handle all important shipping activities, like sourcing the best cost and the most direct route of transport, refrigeration, or security, if required; insurance and demurrage¹ contracts; and legal requirements for toxic or potentially hazardous materials. While freight forwarding is an augmenting function that most countries use, freight forwarders can also manage the delivery of commodities beyond the central level of the system. This can help avoid the need for central warehousing and can ensure that commodities move quickly and efficiently to their destination (see box 1). The Democratic Republic of Congo has used freight forwarders to deliver consignments of malaria commodities directly to provincial-level distribution points, often bypassing the out-of-the-way capital, Kinshasa.

¹ Holding or delaying during offloading or clearance of a shipment beyond the normally accepted time frame.

After commodities are in-country and ready for distribution, other augmentation methods may offer options for managing supply chains. In *Nigeria*, the first leg of outbound distribution—from the central medical stores to the state warehouse—is outsourced; warehousing and lower-level distribution remain functions of the state government. Taking this a step further, *Rwanda* outsources all transportation from the central- to the district-level for most essential medicines and family planning commodities. Beyond the district level, the districts are responsible for distribution to service delivery points (SDPs). Additionally, in *South Sudan*, where the infrastructure is poor, the Ministry of Health (MOH) stores commodities in its own warehouse but contracts with private transportation companies, or the United Nations, to make deliveries to the state level.

Cross-docking is another model of product distribution. With this type of *hub and spoke* practice, products arrive at a central distribution point; they are sorted and then transferred, usually to smaller vehicles for distribution, without an extended warehousing period. In *South Africa*, cross-docking is outsourced to a third party logistics provider that moves antiretroviral therapies straight from the port of entry to the state-level depot for onward distribution to SDPs, eliminating the need for a central store.

Kitting

Some countries kit products that are destined for SDPs. Kits are packages of commodities sorted in smaller quantities to meet the needs of most of the clients who patronize services offered at a lower level in the supply chain. Kits are usually designed for a specific type of health facility or level in the health system. The kitting process can be integrated with procurement services, or kits can be created after the products arrive in-country. In *Mozambique*, to support MOH facilities and community health workers, the project is responsible for kitting some antimalarial drugs at the central level. While kitting can help countries manage commodities flowing to the facility level, kitting may also cause delays if one item in a kit has a longer procurement lead time than others. Additionally, countries can either kit in-country or abroad. In-country kitting allows for greater flexibility, but also requires establishing a packing operation, often at substantial expense. Kitting abroad can be a convenient, cheaper option, but it does not allow for last-minute changes to quantities or any other adjustments.

Comprehensive Outsourcing

When the host country supply system needs broader reforms, there are multiple models of how supply chain augmentation can support the ongoing logistics while reforms are being implemented, such as vendor managed inventory (see box 2) and various country models.

In *Democratic Republic of Congo*, poor government structures led to UNDP's appointment as the principal recipient under the Global Fund's Round 3 grants for HIV and malaria. UNDP contracted a private company to manage the procurement, freight forwarding and importation, warehousing, and distribution of all Global Fund-supported commodities.

In some cases, segmenting the supply chain takes a more holistic approach. To improve the performance of *Zambia's Medical Stores Limited* (Central Medical Stores [CMS] Zambian equivalent), the government entered into a management contract with Crown Agents, a private-sector supply chain company. Crown

Box 2. Vendor Managed Inventory

Vendor managed inventory (VMI), another approach to inventory management, relies on the vendor or manufacturer to take responsibility for maintaining the distributor's inventory levels. VMI can use electronic data systems to monitor stock levels that determine when top ups are needed. Alternately, the vendor can determine the needed stock levels when delivering goods, or the vendors can use their staff to monitor stock levels at the customer's location. Implementing VMI can reduce handling and storage costs at interim inventory levels of the supply system, increase commodity availability at the service delivery point and increase cooperation between the vendor and the supply chain.

VMI is currently being implemented in Nigeria, where local private suppliers of laboratory equipment and reagents work with state and federal government to ensure a continuous supply of these commodities.

Agents worked with the medical stores staff and management, already in place, to improve systems and to strengthen warehousing and distribution practices at the central level.

In *Malawi*, a lack of visibility into the receipt of malaria commodities at the SDPs led to the development of a totally parallel system. A third party logistics provider warehouses and distributes the commodities, ensuring custodianship from the time commodities enter the country until their arrival at the SDPs.

Finally, *Uganda* has supplemented the activities of its CMS by offering facilities to source medicines and medical supplies through either the CMS or the Joint Medical Stores, which is a non-profit, faith-based medical store that also has a significant logistics network throughout the country.

Seconding Staff

Rwanda, Malawi, Tanzania, and Zambia have seconded supply chain or logistics advisors to either the MOH or the CMS. These advisors fill voids that the host government may struggle to fill—either because of a lack of resources or the lengthy process needed to create a new public-sector job. While some of the staff sit at the national level, others may sit at a regional or provincial pharmacy or warehouse; they assist with functions at the lower levels in the system or provide additional supervision visits. In *Zimbabwe*, a group of seconded logistics staff has greatly improved the government’s capacity to conduct supply quantifications and information management.

Quality assurance is another key area where capacity may not exist in-country. Often, a national-level laboratory may be able to detect the presence of active agents in a pharmaceutical product, but it may not be able to determine whether the appropriate quantities are available. Private, regional laboratories are often better placed to perform this and similar functions for both the ministries of health, as well as other development partners that may be procuring medicines.

Approaching Supply Chain Augmentation

Supply chain augmentation can be explored because of the need to find or create an effective and accountable system, the lack of local or national resources or capacity, or the drive to improve the efficiency of already existing systems. In today’s environment of increased scrutiny and oversight, supply chain augmentation options can also be considered to improve transparency and accountability. Particularly as the investment in malaria control commodities grows, it is vital to augment the supply chains to accommodate and secure these products.

After the decision to augment a supply chain is made, and political factors are accounted for, country programs should seek expert advice in devising a strategy for augmentation. Should all functions be augmented or only a critical few? How can funding for augmentation be sustained? Is there an exit strategy for the augmentation components, or is this a long-term solution to an ongoing challenge?

Finally, when implementing augmentation to existing supply chains, decisionmakers should consider if and how logistics information will be shared between key stakeholders, including the public sector supply chain, where necessary, and the augmented system.

Regardless of the motivation, supply chain augmentation should be viewed as an *eyes-on, hands-off* exercise. To ensure cohesion with national priorities and strategic direction, key stakeholders should remain involved in oversight and tactical guidance for any augmented piece of the supply chain. Augmentation efforts should also be reviewed in a timely manner to ensure that the value added from the augmented component or system remains clear and worthwhile.

The decision to step away from supply chain augmentation is a complex one, requiring the input and reflection of stakeholders within the system and the clients of the system. Data on the performance of the augmented function, as well as other key supply chain indicators may guide discussions, particularly whether

host country government systems are ready to take over specific functions or reintegrate a parallel system. In some cases, government systems may continue to use augmentation, such as outsourcing transportation, if it improves their ability to provide quality supply chain services.

Supply chain augmentation has the potential to significantly improve supply chain performance by augmenting specific components or by creating a new way of doing business for the entire system. Exploring which type of augmentation works best in specific country situations is as important as ensuring that the necessary resources and political support are in place to ensure successful supply chain augmentation.

Reference

Scott-Bowden, Peter. [no date] *World Food Programme: augmenting logistics*. Rome: World Food Programme. <http://www.fmreview.org/FMRpdfs/FMR18/fmr1808.pdf>

The USAID | DELIVER PROJECT, Task Order 7, is funded by USAID, implemented by John Snow, Inc., and supports USAID's implementation of malaria prevention and treatment programs by procuring, managing, and delivering high-quality, safe, and effective malaria commodities; providing on-the-ground logistics capacity, technical assistance, and pharmaceutical management expertise; and offering technical leadership to strengthen the global supply, demand, and financing of malaria commodities.

The authors' views expressed in this publication do not necessarily reflect the views of the U.S. Agency for International Development or the United States Government.

USAID | DELIVER PROJECT

John Snow, Inc.

1616 Fort Myer Drive, 16th Floor

Arlington, VA 22209 USA

Phone: 703-528-7474

Fax: 703-528-7480

Email: askdeliver@jsi.com

Internet: deliver.jsi.com