

Focusing on the Big Picture:

INTEGRATED SUPPLY CHAINS THINK BEYOND PRODUCTS, PRICES AND DELIVERY DATES

In the spring of 2010, volcanic ash drifted over Europe, shutting down airports across the continent. News cameras focused on stranded travelers, but the interruption in transport also affected cargo, including 17 SCMS shipments bound for seven countries in sub-Saharan Africa and the Caribbean.

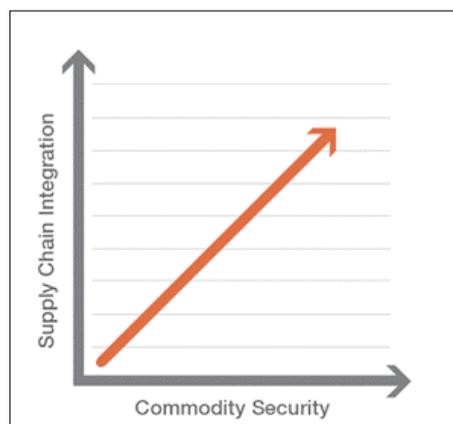
The delay in shipments could have disrupted health systems in the destination countries. Before PEPFAR and SCMS, ministries of health and other agencies would have received unreliable information, or no information at all, about the interruptions in supplies.

SCMS effectively managed the situation because the project operates an integrated supply chain. Our freight and logistics staff was able to contact field office staff directly, who in turn alerted clients to potential delays in delivery and planned accordingly.

Supply chains function best when they are integrated, creating connections among people working in various disciplines and locations to solve short-term problems and develop long-term strategies. For public health programs, an integrated approach means the difference between stockouts or full supply, overpaying or getting competitive prices, excessive waste or efficiency, and potentially sub-standard medicines or effective quality assurance.

In countries or public health agencies without integrated supply chains, procurement of products is a transactional, one-off event. Each purchase is treated as a separate activity, perhaps with little or no connection to national health strategy and patient needs. The focus is simply on getting products to a specific location by a certain time, and at the lowest possible price.

The challenges and impacts associated with this transactional approach to procurement were common in PEPFAR-supported countries not too long ago: Shortages and stockouts of commodities caused dangerous “treatment holidays” for patients. Emergency ordering meant money was wasted on rush fees and high freight costs. Lack of inventory control resulted in needless waste of commodities due to expiry, improper storage and theft. Poor coordination led to redundancies and gaps in service.



With technical support from SCMS and other partners, ministries of health and other key agencies have changed the way they procure, store and distribute medicines and other health supplies. Now HIV/AIDS treatment programs are creating vital connections in their public health supply chains and reaping the benefits of what is increasingly called the “commodity security” approach. The term does not refer to physical security of the supply chain, though physical security is one important aspect. Rather, the concept is analogous to the concept of food security: ensuring a continuous, reliable supply of health products over the long term, not just for the next shipment or the next budget cycle.

**Integration means strategy:
Supply planning is essential for success**

Recently in Zimbabwe, the ministry of health’s AIDS&TB Program updated the quantifications for a variety of medicines for treatment of AIDS and other diseases. The exercise revealed adequate funding for most medicines, but found a funding gap for pediatric ARVs between the end

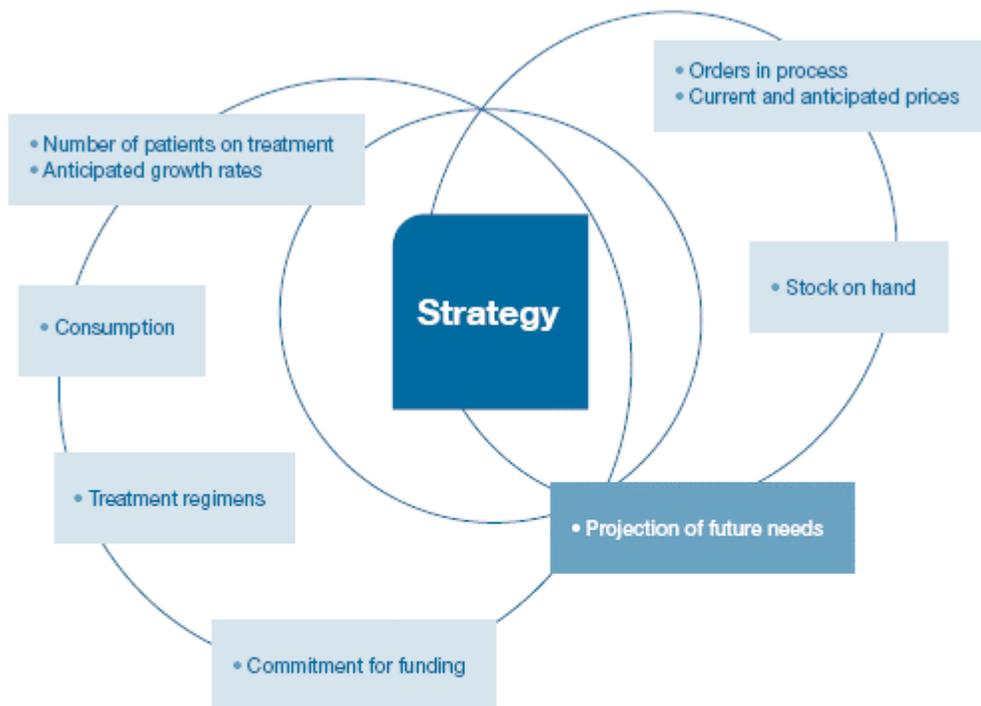
of support from one funder and the beginning of support from another. USAID agreed to provide funding to fill the gap, ensuring continuous treatment for children living with HIV/AIDS.



Without the quarterly exercise to update commodity needs, a stockout of pediatric ARVs could have occurred.

Integrated supply planning means that ministries of health, treatment providers and other agencies work together to prepare long-range forecasts—from two to five years usually—and rolling one-year supply plans that are used to plan orders with suppliers. As demonstrated by Zimbabwe, supply plans should be updated quarterly to be most useful.

Development of forecasts and supply plans requires the support of multiple partners. A forecast starts with data from treatment sites on numbers of patients on treatment and quantities of medicines used. Data management teams crunch those numbers to provide decision-makers with



Key Benefits

- Full supply, reducing stockouts and shortages
- Full funding, by identifying gaps
- Lower commodity and shipping costs
- Eliminate emergency orders

Key question: How many commodities have patients been consuming, and how many patients will be added to treatment programs?

the total figures for the country. The ministry of health, treatment providers and other agencies then review that information, agree on any changes to the range of medicines that will be used and set goals for increases in the number of new patients who can be added. To support accurate budgeting, procurement staff take current pricing from management information systems and, leverages their knowledge of the marketplace, provides pricing estimates, including future pricing trends and suppliers' production capacities.

Once these data are processed, the government and their development partners develop the long-range forecasts from a shared big picture for overall commodity needs and amounts of funding required. Funders like the Global Fund, PEPFAR, UNICEF, UNITAID, USAID and the World Bank review the forecasts and commit to pay for various programs, such as pediatric treatment or prevention of mother-to-child transmission (PMTCT).

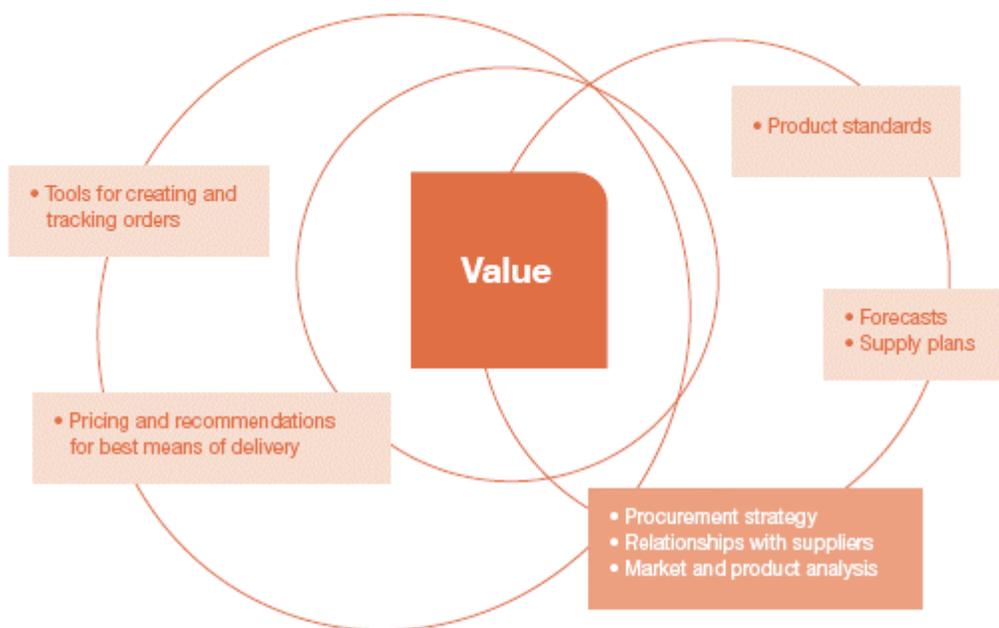
Armed with forecasts and funding, partners develop rolling one-year supply plans that predict the quantities of products to be purchased in the short-term. The supply plan reflects the difference between what is needed and what is already available in storage or in transit from suppliers.

To develop the supply plan, partners need to know how much they already have in stock. Personnel at central medical stores and regional warehouses provide that information, and procurement staff provide information about shipments that are in process. Partners then share the supply plan with their procurement staff or procurement agents, who in turn use the plan to begin negotiating prices and delivery dates with suppliers.

Once the overall strategy is complete, it's time to buy.

Integration means value: Aggregated procurement creates a buyer's market

An HIV/AIDS program without a supply plan often is forced to approach a supplier with a large order at the last minute. The lack of planning means the program has no leverage when negotiating price, delivery date or quality. As a result, the program often pays too much and risks potential stockouts.



Key Benefits

- Aggregate multiple orders
- Lower commodity prices, leveraging higher volumes
- Ensure availability, preventing emergencies
- Purchasing leverage

The Nigeria HIV/AIDS program is applying aggregated procurement strategies to a growing number of products to avoid the pitfalls of poor or no planning. SCMS and our partners are building on the success of an innovative initiative that pools procurement of ARVs for all PEPFAR implementing partners. Once partners create forecasts and supply plans, they share the plans with SCMS, who serves as a procurement agent. While the initiative first focused on just two high-volume ARVs, SCMS now pools procurement of all PEPAR-funded ARVs, ordering in bulk and delivering regularly scheduled shipments. Based on the success of this initiative, the program is expanding to include HIV test kits.

An integrated approach like Nigeria's links procurement across several public health programs to address the national need and involves multiple supply chain functions. Armed with the information provided by supply plans, procurement staff move beyond a one-order, one-shipment approach, and instead develop a strategy based on the total volume of products needed by several programs. The procurement team shares the supply plans with multiple vendors far in advance of actual need, and the suppliers, some of whom manufacture the products, use these supply plans to plan adequate production. Because of the relationships we have developed with suppliers, procurement staff can negotiate the best possible terms for pricing and ensure availability of commodities when they are needed.

Supply plans move from theory to reality when partners place actual orders. After receiving an order, the procurement team reviews it and begins negotiating prices, availability and shipping with suppliers. For pharmaceuticals, the team must also ensure that each product is registered for use in the country by relevant regulatory agencies.

Key question: How much of a product is needed, and by when?

With this sort of advance planning, many products can be shipped by ocean or land rather than by air, saving up to 85 percent in freight costs, so procurement staff work with freight and logistics staff to estimate freight costs and determine the most advantageous shipping mode and schedule. Using that information, procurement staff may then renegotiate delivery dates with clients to take advantage of lower-cost shipping, or split the order into more than one delivery date, shipping part by air and part by sea or land.

All of the information needed to plan and track orders is maintained in computer systems that require ongoing design and maintenance.

Once the client has agreed to the proposed pricing and delivery, it's time to place the orders with suppliers and shift the focus to delivery.

Case in point: Ensuring pills reach patients even during product shortage

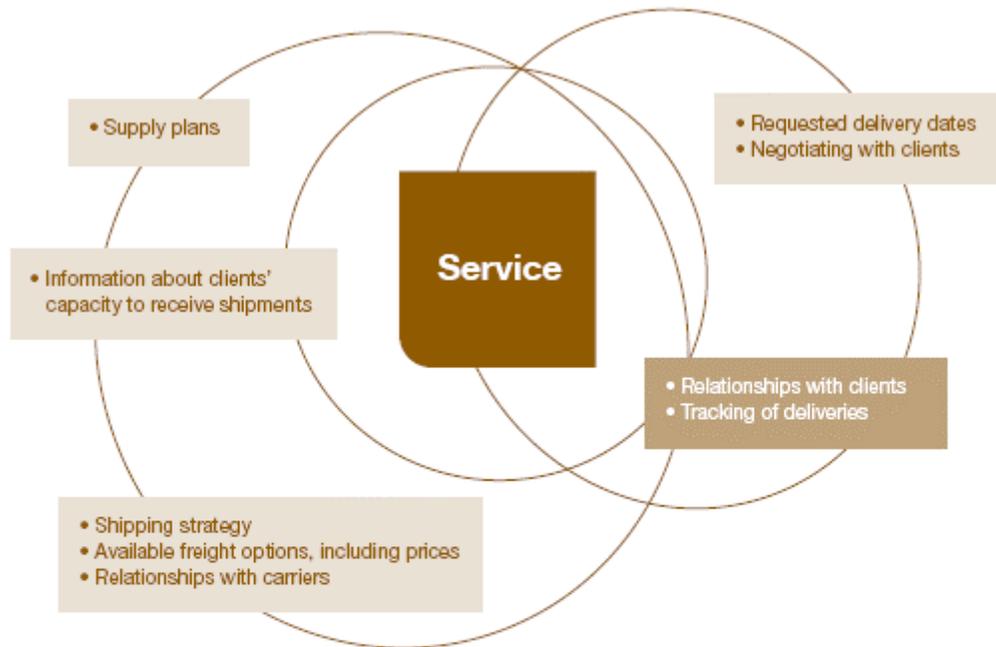
HIV/AIDS programs are facing a global shortage of the fixed-dose combination ARV medicine known as Lamivudine/Zidovudine/Nevirapine. Once alerted to the shortage about a year ago, SCMS mobilized to ensure that PEPFAR-supported countries using this ARV would have a reliable supply.

Based on forecasts and supply plans submitted by those countries, procurement staff made assumptions about overall demand and negotiated with suppliers to place orders and pre-orders. Staff from procurement, freight and logistics and warehousing then worked together to place some supplies of the ARV in SCMS's regional distribution centers and have orders for more supplies in process throughout the year.

Integration means reliable service: Integrated shipping and delivery provide routine, regular supplies of commodities

Commodity security requires a comprehensive and country-specific assessment of potential interruptions in supply. In Vietnam, many essential operations across the country either close or slow down in the weeks preceding Tet, the lunar New Year celebration held in 2010 from February 12 to 21. To ensure full supply during this period, SCMS arranged for a double distribution of ARVs and lab supplies. As a result, public health sites experienced no stockouts.

Doctors and nurses in Vietnam and elsewhere can't serve patients if they lack medicines and medical supplies. Going off treatment for even a short time can jeopardize the health of a person living with HIV/AIDS. A vaccine is useless without the syringe to inject it. Administering a test for HIV, malaria or any other disease does little good if there are no medicines to treat those who test positive. And a piece of laboratory equipment serves no one if the test



Key Benefits

- Aggregate shipments
- Lower freight costs, through consolidation, negotiation and planning
- Maximize use warehousing capacity, by sending smaller, regular shipments

tubes, pipettes or other supplies needed to use the equipment are unavailable.

Integrated shipping and delivery means more than just lower costs. It helps ensure that hospitals, clinics, laboratories and other public health facilities are fully stocked with the medicines and supplies they rely on. Not too long ago, stockouts in PEPFAR-supported countries were the norm rather than the exception. But no longer. With support from SCMS and others, countries like Ethiopia, Mozambique and Zambia now have a reliable supply of HIV/AIDS medicines, test kits and laboratory supplies.

To keep health facilities fully stocked, at least four areas of the supply chain must be in constant communication.

In the same way that procurement staff develops relationships with suppliers, freight and logistics staff cultivates good relations with carriers. Freight and logistics staff first reviews supply plans to identify opportunities to negotiate better terms.

Supply plans provide information about product volumes and potential delivery times that enable freight and logistics

staff to leverage economies of scale. In some instances, orders of various products can be shipped together; for example, two or three small shipments that are not large enough for a sea shipping container might be combined to enable a much more cost-effective ocean shipment. Freight and logistics staff relies on a combination of personal experience and sophisticated computer programs to evaluate freight options, including optimal routes and pricing.

Key question: Does the client need all the products at once, or can we make smaller shipments over time to better match delivered quantities with projected usage?

Large orders are both a challenge and an opportunity, as they can strain capacity in shipping and warehousing, but at the same time provide leverage to negotiate lower shipping rates. If a large order is requested for an urgent air shipment, procurement staff may negotiate with the client to send a portion by air to meet immediate need and then send the rest by ocean to save shipping costs. However, if large ocean shipments are planned, freight and logistics staff needs to consult with staff at the destination warehouses to ensure there is capacity to receive the products. If not, the order can be split into two or more smaller deliveries over time. Larger volumes of products that need to go by a particular shipping route may be split into smaller, regular deliveries that can help guarantee availability of cargo and leverage lower prices.

Procurement staff use computerized systems to monitor deliveries, keep clients informed of the status of deliveries and alert clients to potential and actual delays.

Ideally, as in Nigeria, products would arrive throughout the year as part of a reliable, predictable delivery schedule, eliminating stockouts and the need for costly emergency orders. But when that is not possible, as our Vietnam team has shown, planning for disruptions can prevent interruptions in availability of products for patients at the service delivery points.

Our responsibility is not limited to delivery of products. We must also ensure that those products are fit for their intended use by health care professionals in treating their patients.

Integration promotes safety: Quality assurance prevents harm

SCMS recently began procuring male circumcision kits that require sterilization. Before placing the first order, our quality assurance team requested samples from several potential

suppliers and had them tested for sterility. Some of the samples failed the quality tests, and SCMS will only buy from the suppliers who pass. By testing this new product line, SCMS helped prevent potential harm to patients.

Medicines and medical supplies can be ineffective or, even worse, dangerous if they do not meet quality standards. Keeping patients safe from harm requires an integrated approach to quality assurance, and requires support and participation at almost every stage of the supply chain. Our procurement staff must ensure that each pharmaceutical product requested is registered for use in the country by relevant regulatory agencies.

For SCMS, quality assurance starts with buying only from trusted suppliers who are certified by national or international regulatory agencies. Many of these suppliers are located in Asia, Europe and North America. Increasingly, however, we buy from suppliers in countries where we have field offices. If those suppliers lack certification, our quality assurance team coordinates with our field office and procurement team to conduct an inspection of the supplier's facilities.



Key Benefits

- Identify substandard products
- Prevent substandard and counterfeit products from entering supply chain
- Patients receive only quality medicines

Key question: Have we bought from this supplier before?

SCMS partners with the laboratories of North-West University in South Africa to test pharmaceuticals. We test samples of multiple shipments from any new suppliers and then randomly sample from shipments afterwards. Computer systems that help management, procurement and shipping alert our quality assurance team to shipments that should be tested. Samples can be pulled at any stage of the supply chain, from the point of shipment to delivery and even during storage; our quality assurance team relies on staff from our clients, procurement, freight and logistics, regional distribution centers and field offices to help pull samples.

Ensuring the quality of pharmaceuticals and laboratory supplies also requires appropriate handling during shipping and storage, including temperature control. Both warehousing and freight and logistics teams have a key role to play.

Computer systems track key information, including batch numbers and supplier source. This information is important for sampling and critical in the case of a product recall. Once notified about a recall, SCMS staff work with clients to quarantine the product at clinical sites, warehouses and in shipping, and then arrange to either send the product back to the supplier or coordinate destruction and disposal. These same systems track products from the manufacturer to the point of delivery, allowing the complete visibility of each shipment that is essential to preventing or detecting any incidents of product substitution or diversion.

To date, we have had no incidents of substandard ARVs and have detected and taken corrective action for other substandard medicines and commodities. The strategy and systems developed by SCMS's quality assurance team provide a credible threat to anyone who might attempt to introduce substandard products into our supply chain.

In the coming months unforeseen challenges may join an Icelandic volcano, the World Cup and shortages of key ARVs as potential threats to the supply of HIV/AIDS commodities. Although it is impossible to predict all the challenges we will face, we do know this much: Programs with integrated supply chains are the most resilient when faced with unexpected events and will be best prepared to provide a safe, secure and reliable supply.

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ABOUT SCMS

The Supply Chain Management System (SCMS) was established to collaborate within country and global partners to ensure a reliable, cost-effective and secure supply of high quality medicines and health products for HIV/AIDS prevention, care and treatment. SCMS is funded as part of the President's Emergency Plan for AIDS Relief. Visit us at www.scms.pfscm.org.

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