



Supply Chain Integration: Case Studies from Nicaragua, Ethiopia, and Tanzania



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In this photo, taken during a supply chain assessment, clients are filling their prescriptions for essential medicines at a health center pharmacy in Nicaragua.

These case studies illustrate the challenges, and opportunities, of implementing supply chain integration.

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Supply chain integration is a performance-improving approach that develops seamless linkages between the actors, levels, and functions within a supply chain to optimize customer service. The objectives of supply chain integration are to improve efficiency and reduce redundancy while also enhancing product availability. Supply chain integration strives to better connect demand with supply, which can both enhance customer service and lower costs.

Well-functioning (integrated) supply chains are characterized by clarity of roles and responsibilities, agility, streamlined processes, visibility of information, trust and collaboration, and alignment of objectives. These three case studies describe countries' efforts to implement supply chain integration. Each country is different, and they are at various stages of implementation. But their experiences demonstrate the challenges—and opportunities—of improving supply chain performance.

Nicaragua

Background

The Ministry of Health of Nicaragua (MINSA is the Spanish acronym) has been working for over a decade to institutionalize supply chain management and manage products through a cohesive public health supply chain system. Over this period, MINSA staff capacity to oversee the entire supply system—the actors, processes, and programs—has increased.

Logistics assessments in the early 2000s illustrated a lack of coordination among institutions responsible for distributing health commodities; disparate supply chain channels were set up to help respond to the specific needs of separate entities within MINSA. This situation led to gaps and overlaps in information, distribution mechanisms, and resources available to help manage supplies and resulted in difficulties in communication, delays in deliveries, and unnecessary bureaucracy throughout the supply chain management process.

These challenges became particularly evident when the essential medicines (EM) supply chain was compared with the contraceptive logistics system, which was demonstrating positive results. Annual evaluations of the contraceptive logistics system showed significant improvements to contraceptive availability over time. The number of facilities experiencing stockouts for contraceptives decreased from 76 percent in 2001 to 6 percent in 2004 (USAID | DELIVER PROJECT 2005).

While the family planning program captured good quality data for contraceptives and managed supplies well, the Essential Medicines Directorate (DAIS is the Spanish acronym) was not able to provide good visibility into the data, and those responsible for managing EM did not understand or apply best supply chain management practices.

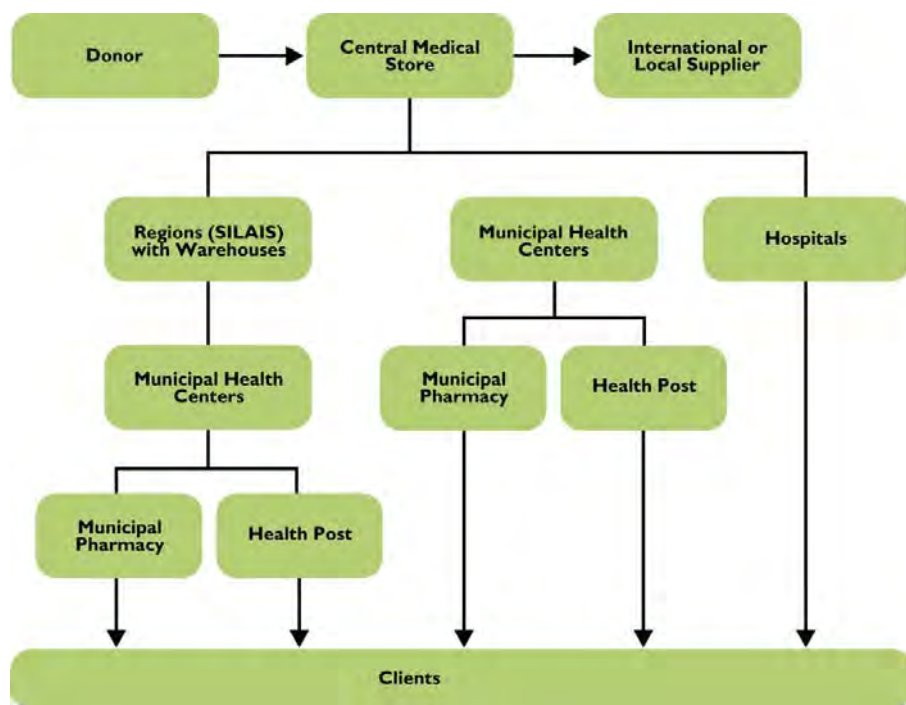
Supply Chain Integration Approach

To help rectify these challenges, MINSA undertook a number of initiatives aimed at better aligning the actors, players, and functions in the supply chain. MINSA began this process by making several improvements to the contraceptive supply chain. Some of these changes included improving quantification and procurement processes, designing a logistics management information system (LMIS) to improve data visibility, and strengthening human resource capacity to manage this new system.

Once these enhancements were developed, tested, and implemented for the contraceptive supply chain, MINSA made similar adjustments to the supply chain for EM. In 2011, MINSA has also begun to extend some of these new improvements to the LMIS, quantification, procurement, and distribution of HIV and AIDS commodities.

As a result of these efforts, the country has achieved key milestones, such as developing new standard operating procedures (SOPs) to help streamline the supply chain management process, setting up communication mechanisms to help clarify roles between the different entities responsible for managing supplies, and increasing capacity of supply chain managers to solve problems that limit commodity availability. Figure 1 depicts the structure of the new supply system, which manages multiple supply chains for various products in a more harmonized way.

Figure 1. Nicaragua Ministry of Health Integrated Logistics System PASIGLIM (automated)



Key Supply Chain Strengthening Activities

Throughout this supply chain strengthening process, MINSA has emphasized the need to empower a cohort of managers to manage every step of the supply chain management process for all health commodities. At the same time, efforts were made to sensitize all staff—from high-level policymakers to service delivery-level workers—that supply chain management is a pillar of an effective health system.

Clarification of Roles, Responsibilities, and Processes

To help clarify roles and responsibilities and alleviate the burden upon health providers and program managers, MINSA has strengthened the role of the EM supervisor—a pharmacist/logistician—within the health system management structure. This position had already existed but because disparate supply chains had been independently managed, supply chain management decisions were dispersed across several stakeholders at multiple levels. Over the past five years, MINSA has shifted oversight for supplies into the hands of regional EM supervisors.

Although nurses, doctors, and warehouse managers are still responsible for physically managing supplies and filling out logistics forms, EM supervisors regularly visit facilities, provide continuous in-service training, and are designated to make decisions about commodities or carry out supply chain management activities. All health managers now know to turn to the EM supervisors, rather than program directors, to resolve commodity-related issues.

MINSA implemented various activities to clarify the role of and empower the EM supervisor. First, MINSA published a logistics manual that formally communicated the rules, regulations, and practices for managing supply, and described jobs, roles, and responsibilities. Then, the USAID | DELIVER PROJECT worked with MINSA's training department to roll-out and train staff at all levels on the new logistics manual. These trainings included interactive exercises that helped EM supervisors and their colleagues understand the changes in their roles under the new guidance. Because of their success in transitioning into their new roles, EM supervisors were recently made part of the director-level regional management teams, and regional directors now often consult them on overall health management issues.

Visibility of Information

In 2003, supply chain managers could only collect essential logistics data for contraceptives and vaccines. The EM and other health programs did not have a functioning LMIS or inventory control system (ICS). However, in recent years, MINSA has set up an information system to manage all health commodities. MINSA is working to make logistics data more visible both to those managing the health commodities as well as to the general public. For example, MINSA intends to post logistics data on the intranet and make these data available to the public via an external website in order to demonstrate progress and increase accountability.

To ensure end-to-end visibility, MINSA designed and institutionalized an LMIS system. The process was implemented in stages: once the contraceptive supply chain demonstrated that it could operate efficiently, MINSA applied a similar ICS and LMIS to the EM supply chain. A pilot was applied in two regions and then the system was fine-tuned and rolled out nationally. In 2007, assessments looked at the effectiveness of the new information system, and the results were generally positive.

Today, the system is semi-automated; managers sitting at the central and regional levels receive regular reports that show the stock status for 25 tracer commodities. These reports contain a warning system—which signals if there is a risk of stocking out of high priority products—and automatically triggers a reaction from MINSA. MINSA is agile enough to quickly mobilize additional funds in the face of a stockout and carry out emergency procurement.

Furthermore, throughout this process, MINSA and its partners have ensured, through quarterly meetings and monthly reports, that important decisionmakers can access the logistics information generated by this system and use it to better manage supplies and support health services. Essential logistics data are available all the way from the service delivery point to the central warehouse to the procurement office for hundreds of essential health commodities. Even the Minister of Health regularly receives these reports, and uses them to assess how regional teams are performing towards achieving MINSA's goal of providing a continuous supply of all health commodities to the public. She commends regional teams on their performance, based on the data in these reports.

Alignment of Objectives

In addition to its efforts to improve data visibility, MINSA has made a concerted effort to motivate health service and stock managers to prioritize the institution's supply chain goals in their day-to-day activities. Previously, supply chain management and data collection was not always a priority for MINSA or facility staff, and midlevel managers did not understand how their decisions could impede the flow of commodities.

To help motivate staff to prioritize their supply chain activities and collect accurate data, MINSA developed indicators that measure and compare supply chain management performance in different regions. In 2010, the best performing regions won wireless USB drives to help them transfer their data to higher levels. These high performing staff felt honored to be selected for this award, and using portable storage devices facilitates the sharing of data. Further efforts are being made to formalize an incentive program by defining and monitoring a set of indicators that will help evaluate regional performance toward improving data quality and reporting rates, lowering stockouts, and streamlining processes, among other indicators. The results of the monitoring and evaluation process will inform a more formal rewards program that MINSA is currently designing. This program aims to institutionalize incentives to help motivate supply chain managers.

Streamlined Processes

Previously, the central medical stores, procurement branch, and EM department were located in separate departments and reported to different levels and directorates of MINSA's management structure. It was not clear who was responsible for managing parts of the quantification, supply planning, and procurement process. This structure created bureaucratic delays, primarily in the procurement process, redundant paperwork, and general disorganization in managing logistics information at the central level. The information systems, approval processes, and priorities were not aligned nor interconnected across the departments, which resulted in delays in procurement and distributing products to the regional level.

To help resolve these challenges and streamline supply chain management processes at the central level, all three departments were moved under the DAIS. This helped reduce the number of steps, procedures, and approvals required for staff to be able to perform their functions. This shift also clarified that all three departments were accountable to the same oversight from higher levels and were expected to achieve similar goals. This reorganization also required that each department clarify who was responsible for each step in the procurement process.

Conclusion

Overall, these activities, along with other supply chain improvements in Nicaragua, have helped elevate both the role of supply chain managers and the entire supply chain management system within MINSA. Effective supply chain management is now considered one of the pillars for achieving MINSA's goal of providing quality health services to the population. Policymakers understand the importance of having an agile, streamlined process through which commodities are procured and distributed in a timely manner. As a result, MINSA staff are authorized to make changes to the supply system and make decisions that previously were mired in bureaucratic approval processes or divided across different programs, departments, and institutions. These staff members—sitting in different departments and levels of the health system—now form part of a cohesive team that has a better understanding of its shared supply chain management goals.

Making data visible to all responsible parties has been a cornerstone to building this supply chain management team. Widely distributed reports with stock status data have helped hold MINSA staff accountable and identify glitches in the supply system as they arise. Multiple monitoring and evaluation processes are increasingly being institutionalized within MINSA to help evaluate supply chain performance, incentivize staff to continue to improve the quality of the data they collect, and identify and mitigate impending stock-related emergencies, which has resulted in improved stock availability.

Ethiopia

Background

Given Ethiopia's large size and the expansive scope of its health programs, its public health supply chains are complex. These supply chains involve the participation of a variety of players, levels, and functions. A 2004 national assessment of the existing public health pharmaceutical supply system identified a number of challenges in the supply chain. These challenges demonstrated that linkages between entities in the supply chain were broken or missing, contributing to poor performance. For example, the responsibilities of actors within the supply chain were unclear. The supply chain had multiple levels, requiring products and information to flow through numerous channels, leading to long lead time. Furthermore, there were non-value-adding activities at every level of the supply chain, leading to duplication of certain tasks and gaps in other areas, as well as confusion about roles. Procurement was fragmented at various levels of the supply chain, leading to lack of coordination that resulted in overstock in some regions, understock in others, and fragmented, small-scale procurement rather than coordinated, pooled procurement. In addition, lack of coordination between players in the pharmaceutical logistics systems hindered the sharing of information.



Supply Chain Integration Approach

To address the performance issues related to these challenges, the Ministry of Health (MOH) undertook a number of initiatives aimed at better aligning the actors, players, and functions in the supply chain. One initiative was developing the Pharmaceutical Logistics Master Plan (PLMP) in 2005 and 2006. The PLMP strives to ensure that medicines and supplies of approved quality are available at public sector health facilities, in adequate quantities and at the lowest possible cost. At its core, the plan seeks to align both the objectives and activities of all of the players and actors in a supply chain.

The MOH also embarked on a related reform—Business Process Reengineering (BPR)¹—in order to strengthen Ethiopia's public health sector by building institutional capacity to manage the national supply chain. Through reorganization and consolidation of logistics functions (i.e., central procurement, storage, distribution, LMIS, and inventory control) under an empowered, expanded Pharmaceuticals Fund and Supply Agency (PFSA), the country is trying to improve efficiency and effectiveness of its supply chain. In Ethiopia's public health sector, the use of BPR had visibility and ownership at the highest level of government (i.e., the Directorate General of the Office of the Minister of Health). The process was intended to achieve performance benchmarks in measures such as cost, quality, service, and speed, but the ultimate focus of BPR is on customer service.

¹ BPR is used within the private sector to rethink how organizations function in order to improve customer service and reduce operational costs.

Key Supply Chain Integration Activities

As a part of the PLMP and BPR processes, a number of activities were undertaken to achieve better alignment in the supply chain.

Clarification of Roles, Responsibilities, and Processes

PFSA was established in 2007 as the main agency for procurement and distribution. Under PFSA, local health centers serve as the demand point for health posts in a given area. BPR made a number of changes to PFSA's responsibilities, expanding its scope to include logistics capacity building at hospitals and health centers, coordinating commodity forecasting, and improving rational use by the providers in the MOH health facilities (USAID | DELIVER PROJECT 2009). PFSA undertakes centralized procurement, stores products at regional hubs, and will deliver directly to facilities.

Prior to the BPR, several agencies all had commodity management responsibilities—and there was duplication of efforts and confusion about responsibilities. Now, management is centralized within PFSA. To help provide clarity on the respective roles at each level of the system (i.e., at the PFSA, Regional Health Bureau [RHB], and health facilities), SOPs and job aids have been developed and disseminated, and trainings have been conducted. For example, LMIS SOPs describe reporting forms and processes, and expectations of management. Training, supportive supervision, and mentoring strengthen human resources and support staff in better understanding their own role, what tools they should use to perform their functions, and how their activities fit into the larger processes. Commodity management tasks are delegated to specialized personnel in the pharmacy department in order to reduce the amount of time MOH personnel have to spend on commodity management so they can focus on clinical tasks.

Streamlined Process

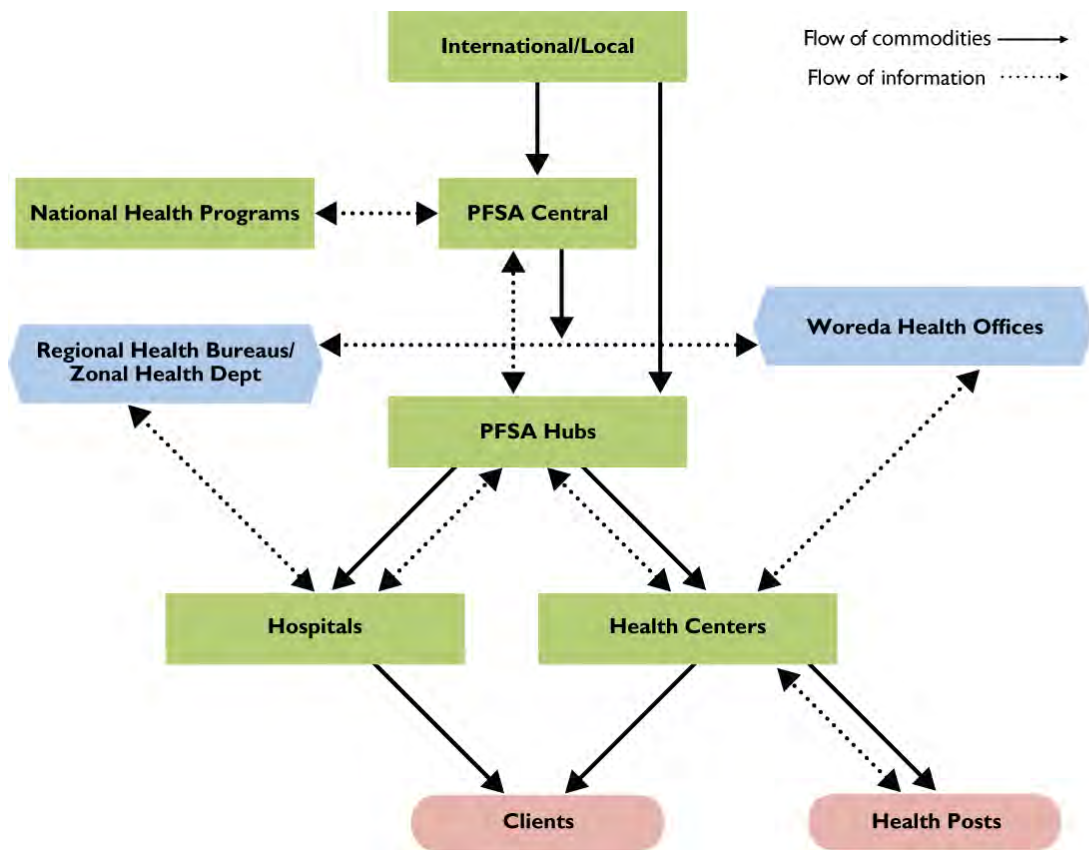
The BPR intended to replace multiple parallel processes with one system, identify and eliminate redundant or non-value-adding steps, and provide a single point of contact for customers and suppliers. Under the old system, there were multiple channels of products, numerous storage points along the chain, and hospitals and health facilities often picked up their commodities from the higher level. The new system is designed with a shorter pipeline that improves efficiency by using “hub” networks to minimize inventory holding costs and reduce the likelihood of expiry and wastage. The major and secondary hub warehouses are designed to provide more effective distribution services, namely direct delivery to facilities.

Furthermore, introduction of improved LMIS and ICS should help to address the redundant report, ordering, and issue activities at the different levels of the chain and streamline these processes.

Visibility of Information

Within the new system, the integrated pharmaceutical logistics system (IPLS) is designed to capture and disseminate data and ensure information flow from low-level to the top-level and back down again. The goal is to operate one comprehensive computerized financial, inventory control, and management information system for all operations, linking the regional hubs to the central level and the MOH. The automated IPLS specifies the codes, commodities, and reporting frequency that are used by the Health Commodity Management Information System, the Patient Information Management System, and the Health Commodity Tracking System. Training and implementation of these systems is occurring in a phased approach. The computerized and web-based systems will make timely data available at the different levels of the supply chain and improve communication between the levels. Furthermore, roll-out of the new paper-based LMIS for health centers began in early 2010 and has entailed training of PFSA and other government staff (such as pharmacy heads and storekeepers). (See figure 2, which diagrams the flow of information and commodities in the IPLS.) The paper-based system and automated ICS and LMIS should help make data accessible at all the levels and available both for logistics decisionmaking and for measuring supply chain performance.

Figure 2. Flows of Information and Commodities in Ethiopia's IPLS



Trust and Collaboration

As Ethiopia is a large and decentralized country and regions often act with autonomy, coordination is not optimal. In the health sector, this means that the new system must take deliberate steps to build cooperation between the levels of the health system. The new system promotes the harmonized goal of full supply for all essential health commodities, and drives for better collaboration between actors in order to achieve that goal. Because the BPR has established a much-expanded role for PFSA, it is important that PFSA, in particular, perform well, demonstrate its capacity, and earn the trust of the other units in the Ministry MOH. If PFSA can consistently deliver the requested quantities of products to the hospitals and health centers, the lower-level facilities are more likely to have confidence in PFSA and, in turn, be more disposed to adhere to the internal report and resupply schedule.

A Logistics Management Unit (LMU) can help foster collaboration between parties, and the PFSA presently serves the function of an LMU, acting as a repository for logistics data. Currently, regional logistics officers work in each region, working with RHBs to collect information, coordinate, regularly review stock status, and undertake planning. Data collected in the regions moves through the PFSA hubs to the PFSA at the central level, thus connecting the different levels. In addition, regional logistics officers conduct joint supportive supervision and implementation follow up.

Furthermore, annual national quantifications include all the health products needed in the country, across programs. The regions are becoming more actively engaged in this activity, which helps share information both geographically and programmatically, as well as fosters a spirit of collaboration.

Conclusion

The aforementioned activities resulted in significant changes to the design of the new logistics system. Whereas products had been obtained via multiple organizations, now they are all obtained through the PFSA. Instead of fragmented and uncoordinated procurement by facilities and RHBs, PFSA conducts centralized, bulk procurement. There are fewer levels of storage; there is a single storage, transportation, report, order, and issue system for management of all pharmaceuticals; and PFSA plans to provide direct delivery from its hubs to hospitals and health centers. The implementation of the new system is still underway, thus it is premature to make conclusions about the impact of the system on improved customer service and product availability. However, these changes help to ensure better linkages between all functions, levels, and actors in the supply chain.

More clearly defined roles and responsibility—as well as ongoing commitment to training and supervision—should improve staff motivation, improve staff performance at all levels, and perhaps contribute to staff retention. Morale can be bolstered if staff are empowered to make decisions (and equipped with the tools and training to make good decisions based on quality data) and if tasks are shifted so that medical officers and nurses can focus on clinical duties while pharmacy personal manage health commodities.

A single information system for pharmaceutical management—rather than multiple systems for different programs and departments—can improve the timeliness, completeness, and consistency of data collection. Automation of the ICS and LMIS can help consolidate data and share it both across levels of the system and with partners so that information can be effectively used for timely and rational decisionmaking.

By reducing the number of levels of the system and consolidating responsibility for tasks from multiple units into the PFSA, the BPR hopes to transform a cumbersome system into one that is more efficient and responsive.

Tanzania

Background

The Tanzania's Essential Drugs Program operated for many years under a “push”-based kit system. Through this system, the Pharmaceutical Services Unit (PSU) at the central level determined the contents of the kits utilizing national morbidity data. Each dispensary and health center received these uniformly packed kits. Then, with decentralization in the late 1990s, the PSU designed the indent system to transfer responsibility for ordering from the central to the district level and to address the inherent problems with kits, such as shortages of some products in the kits and overstock of others. Although the indent system was seen as an improvement over the kit system, there were still shortcomings. When the Tanzania Ministry of Health & Social Welfare (MOHSW) decided to create a new system to replace the kit and indent systems, it first conducted an assessment of the old system in order to identify key problem areas such as bottlenecks throughout the system, lack of facility-level data to decisionmakers at higher levels, irregular ordering cycles, delivery delays, wastage and expiry, and stockouts. As in Ethiopia, these challenges signaled that linkages between actors, levels, and functions in the supply chain were broken or missing.

The Tanzanian public health care system relies heavily on the Medical Stores Department (MSD) for the supply and distribution of pharmaceuticals and medical supplies. Established as a parastatal organization in 1993, MSD serves as a national distribution system whose responsibilities include procurement and customs clearance, storage, and distribution. Tanzania's 1996/99 health sector reform action plan called for the consolidation of the MOHSW's vertical logistics functions within MSD in order to reduce costs and increase efficiency.

The PSU is another important entity in the Tanzania health system and has oversight over MSD. It serves primarily as the policy, oversight, and coordination unit within the MOHSW. Some of its key responsibilities

include ensuring adequate funds to procure drugs and medical supplies, which are then provided to MSD; assisting health facilities and districts to quantify medicines and supplies; reducing wastage and pilferage through regular monitoring and supervision; establishing effective pharmaceutical management systems at the health facility level; and ensuring appropriate allocation of medicines.

Supply Chain Integration Approach

Following the results of the previous logistics system assessment, Tanzania completed a comprehensive system design intending to address and improve on the logistics issues from the previous kit and indent systems. Following the system design in 2005, Tanzania transitioned to an integrated logistics system (ILS) to include most vertical programs and EM in the same system, and to couple routine reporting with routine resupply, which enhances accountability and provides data to the central level. In the ILS, dispensaries, health centers, and hospitals order quantities of each product according to their needs and within their budget. The ILS was designed to bolster institutional capacity to more efficiently manage data as well as store and distribute commodities using a single set of procedures to manage various categories of products. The ILS consolidates various logistics management responsibilities under one entity—MSD—which uses the new system for ordering and distributing most of the medicines and related medical supplies needed to provide health services in Tanzania. It builds capacity at all levels of the system—from facility staff who calculate and place orders, to MSD who packs and delivers to districts, to districts who distribute to facilities—to better manage the supplies needed for health programs.

Supply Chain Integration Activities

The ILS is designed to facilitate supervision, to help clarify roles and responsibilities, to streamline processes by reducing the number of reporting and resupply forms required, to improve data visibility by strengthening data collection, and to strengthen relationships between the levels and actors in the system.

Clarification of Roles, Responsibilities, and Processes

The ILS Procedures Manual contains job descriptions and clarifies staff roles and key responsibilities within the ILS. In addition, it provides management tools such as organizational diagrams and supervision checklists to enhance system functionality. The USAID | DELIVER PROJECT has assisted in conducting trainings on the manual to support dissemination.

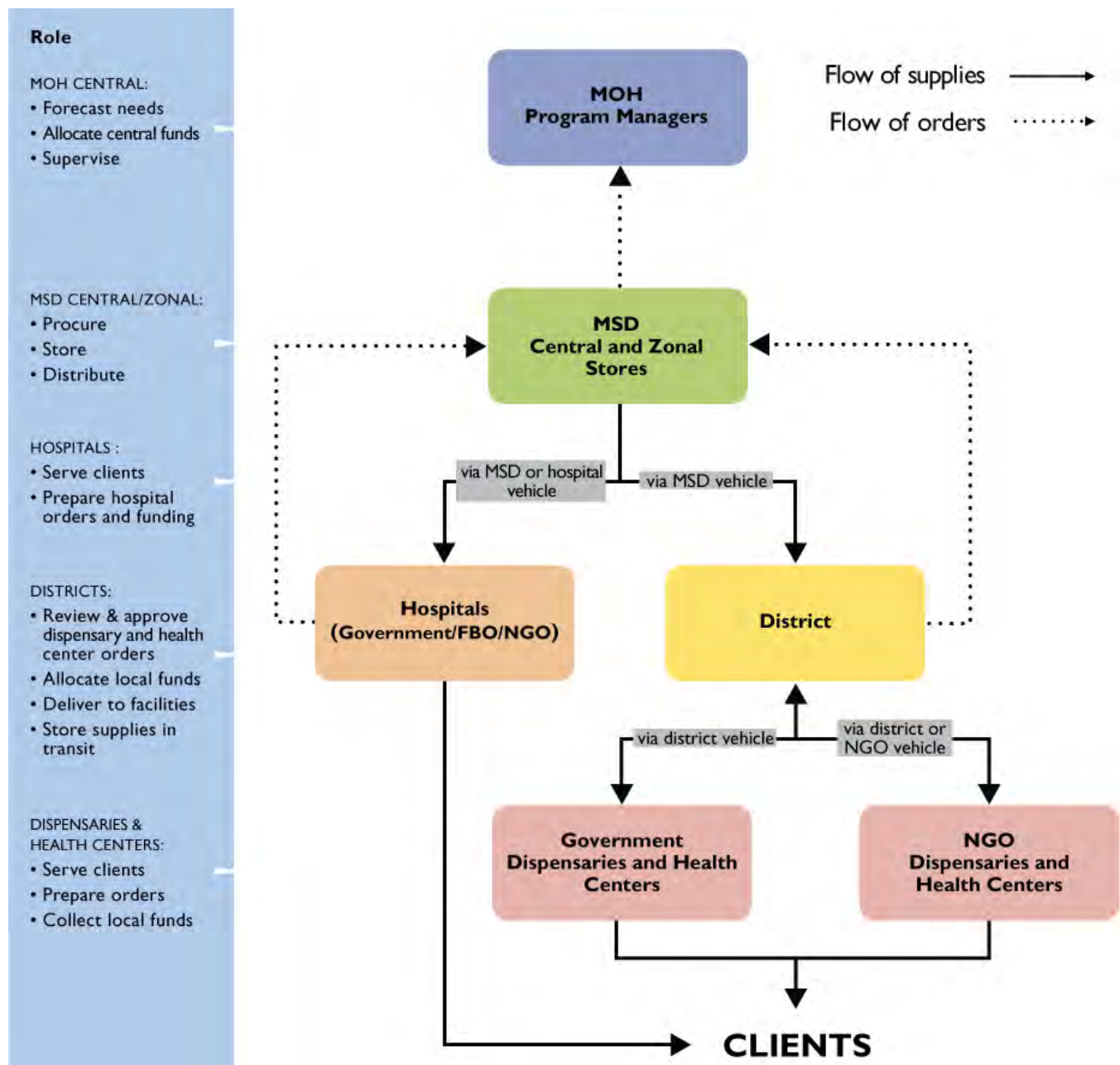
Recognizing the need to not only roll out the new system training but consistently observe its implementation and operationalization, a series of monitoring and system strengthening activities were planned and implemented to support the ILS. To support stakeholder coordination, an ILS strengthening brainstorming workshop was held in March 2010 to bring together MOHSW and MSD officials from the central, regional, zonal, district, and facility levels of the health system to provide input on improving ILS supply chain operations and commodity availability. Participants identified problems at each level of the system, such as issues with capacity and supervision. A number of the activities identified for strengthening ILS revolved around clarifying the roles and responsibilities of PSU, MSD, and the regional-, district-, and facility-level health management. There was an identified need to specify the ILS responsibilities in job descriptions and review the commodity distribution flow with staff. Following the brainstorming session, the MOHSW has identified system weaknesses and developed targeted interventions at each level of the supply chain in order to improve the ILS, focusing on defining and clarifying ILS roles and responsibilities so the system can optimally operate as intended.

Streamlined Process

The design of the ILS requires health facilities to request resupplies on a quarterly basis using the report and requisition (R&R) forms through the district pharmacist, who then reviews and submits the forms to the MSD zonal warehouses. On receipt of the R&R form, MSD prepares a custom package for each facility

based on the quantity requested, as well as on funds available for each facility. These packages are delivered to the district by MSD and the district is then responsible for delivering the prepackaged commodities to the health facilities. (See figure 3, Movement of Supplies and Information in the ILS.)

Figure 3. Movement of Supplies and Information in Tanzania’s ILS



The flow of commodities and information is staggered so that each facility reports, requests, and receives resupplies from MSD once each quarter. Facilities within each district are divided into three delivery groups. Each month, only facilities within one specific delivery group are expected to submit their R&R forms to provide districts with time to review and compile R&R forms from relevant facilities. This prevents the district and MSD from being overwhelmed with orders and reduces the strain on the district's

transportation resources to distribute the products to the facilities. In order for the designed process to be more efficient, the various pieces must function correctly—the facilities must submit their reports on time to the district, the district must review and submit the reports to MSD in a timely manner so that MSD has sufficient time to pack the orders, and MSD must have sufficient quantities of the requested products on hand.

Visibility of Information

ILS Gateway is a reporting system that uses short message service text messages to collect stock status information. Users will be able to access essential logistics data through a controlled website, creating greater visibility of stock levels at service delivery points (SDPs) and empowering district logistics managers to help prevent stockouts of health commodities. The USAID | DELIVER PROJECT is working with the Reproductive and Child Health Section of the MOHSW to develop this tool, which is being piloted for reproductive commodities and selected EM.

The intention of ILS Gateway is to provide better information about stock on hand and greater insight into reporting and resupply rates and performance which are essential towards ILS functioning. It can provide real-time stock status information on commodities, improve the timeliness of paper-based ordering and reporting from the SDPs, and improve the timeliness and accuracy of deliveries to SDPs. The automated functionality can provide data and information that can be used to analyze district and zonal functionality, commodity availability, and reporting rates. Furthermore, it will allow decisionmakers at all levels to monitor facility-level operations and should help prevent the widespread emergency ordering that has occurred under other reporting systems. By design, the ILS does not allow emergency orders, making it difficult for MSD to process orders fast enough to respond to an emergency.

Trust and Collaboration

The ILS was designed to build close collaboration between the district and facility levels and facilitate trust between MSD and the lower levels of the supply chain. In addition to trainings, workshops, and regular meetings, the way to foster this trust is for all the levels to fulfill their responsibilities and deliver reports or products when expected and needed. There is also a technical working group, made up of staff from John Snow, Inc., MSD, and PSU, which identifies key ILS strengthening interventions and encourages cooperation between MSD and PSU, which are dependent on one other to function effectively.

Another mechanism for collaboration is a quarterly end use activity report that brings together central-level PSU, National Malaria Control Program, and Reproductive and Child Health Section staff. The activity entails visits to the zones, districts, and facilities so that staff can gain firsthand understanding of how the system is operating and better appreciate challenges. The visits and meetings help establish connections between different players within the health system and cultivate a sense of shared responsibility for the system.



An MSD truck in Tanzania, packed with medicines and ready to make a delivery.

Alignment of Objectives

During an on-the-job training workshop in 2010, representatives from each level of the health supply chain met and discussed the different roles and responsibilities within the system. Through the workshop, they were able to identify key objectives each staff member or level would have to meet in order to ensure overall system functionality. By jointly discussing individual responsibilities, participants were able to come to a collective understanding about their shared purpose and how their distinct tasks linked together to achieve larger goals.

Furthermore, USAID | DELIVER PROJECT collaborates with the Ministry, donors, and other key stakeholders during quarterly commodity security meetings. At these meetings, partners share their goals and activities in order to help ensure that participants are aligned and striving for compatible objectives. These regular meetings can help garner and maintain political commitment to the ILS on the part of leadership, and are an effective forum for finalizing tools and documents and ensure commodity availability.

Conclusion

The ILS was designed to address shortcomings in the previous system. By clarifying roles, simplifying forms, streamlining processes, and consolidating responsibility for key logistics functions at MSD, Tanzania hopes to improve product availability and customer service. While improvements have been made as a result of the ILS, a 2010 review of the health facility report and requisition forms at MSD zonal stores observed that performance of the districts varied, even within the same zone (Chimnani 2010). The review recommended the identification of high-performing districts to highlight promising practices, as well as low-performing districts to perform targeted supervision. Although efforts have been made to provide supervision, clarify roles, and streamline processes, there are opportunities for continuous improvement as the system is being rolled out. For example, additional SOPs and supervision may be warranted to ensure district medical officers and district pharmacists, as well as MSD are fulfilling their roles correctly. Furthermore, it recommended that a review be conducted to measure the length of time it takes for forms and products to travel through the system—from facility level to MSD and back—in order to identify bottlenecks and determine how to further streamline processes in order to expedite the flow of both information and ultimately essential health commodities.

A Final Word

Although these three countries have taken different approaches to improving the performance of their public health supply chains, there are some similarities. All three recognize the importance of—and are taking steps to enhance—clarity of roles and responsibilities, streamlined processes, visibility of data, trust and collaboration, and alignment of objectives. A seamlessly linked system—the integrated supply chain—is able to collect sufficient, accurate information about demand and supply and ensure that this information flows to the right people at the various levels, in a timely manner, so that supply chain decisions are well informed.

For more information about supply chain integration, see the briefs *Supply Chain Integration: Seamlessly Linking the Pieces* and *Putting Integration into Perspective: Proven Practices to Strengthen Public Health Supply Chains*, available at www.deliver.jsi.com.

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