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Reproductive Health Supplies Coalition

Supply Chain Models and Considerations for Community-Based Distribution Programs: A Program Manager's Guide

August 2010

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HANDtoHAND Campaign

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Acronyms and Abbreviations

AIDS	acquired immune deficiency syndrome
ARV	antiretroviral
CBD	community-based distribution
CHW	community health worker
CHV	community health volunteer
DMPA	depo-medroxy progesterone acetate
FCHV	female community health volunteer
FP	family planning
HEW	health extension worker
HIV	human immunodeficiency virus
HMIS	health management information system
IPPF	International Planned Parenthood Foundation
JSI	John Snow, Inc. and JSI Research and Training Institute
LHS	lady health supervisor
LHW	lady health worker
LMIS	logistics management information system
MOH	Ministry of Health
ORS	oral rehydration solution
PDA	personal data assistant
PIH	Partners In Health
RHSC	Reproductive Health Supplies Coalition
SCM	supply chain management
SDP	service delivery point
TB	tuberculosis
USAID	United States Agency for International Development
WHO	World Health Organization
WHR	Western Hemisphere Region

Executive Summary

Community-based distribution (CBD) offers the potential to significantly increase uptake of, and access to, a variety of health commodities and services, particularly by underserved groups. CBD programs have played and continue to play a significant role around the globe in bringing health information, services, and commodities to clients who otherwise might not have reliable access to such goods and services. With this increased demand, effective supply chain management (SCM) represents an essential part of the success of CBD programs.

Although significant attention is often paid to areas such as training and supervision, limited resources are often devoted to SCM. CBD programs have inherent characteristics that require unique supply chain considerations, including the distributor's educational level, volunteer or part-time status, and access to resupply. To date, no guidelines or best practices are known to exist specifically for SCM of CBD programs.

The foremost purpose of this document is to provide guidance in the design of SCM systems for CBD programs. This guide presents four SCM models for CBD programs that provide guidance on supply chain functions, including logistics management information systems (LMISs), inventory control systems, storage, distribution, and capacity building, that can be adapted and applied to a variety of country contexts. The secondary purpose of this guide is to share lessons learned on current SCM practices from a range of CBD programs across the globe. This guide aims to assist program managers and other stakeholders in designing and implementing stronger and more sustainable supply chains for their CBD programs. This guide does not intend to offer prescriptive SCM models to be followed rigidly. Rather, it is intended to serve as a resource of tools that can be modified and adapted for use by any public sector government or organization that implements CBD programs.

Methodology

The project's research design was comprised of two phases. The first included a qualitative interview process with staff members from 29 CBD programs as well as significant web-based searches for additional resources, publications, tools, materials, and program information. The second phase began with a thorough review of current CBD practices before identifying insights from John Snow, Inc.'s, supply chain and logistics projects. Using this information, the team compiled *Promising Practices in Supply Chain Management for Community-Based Distribution Programs: Global Survey of CBD Programs*. On the basis of these promising practices, the team outlined this guide and designed four SCM models that can be used or adapted for CBD programs for a variety of health programs.

Lessons from the Field

The "Lessons from the Field" section of the guide describes how five supply chain functions and considerations are significant for CBD programs and essential to their success:

- ***Product availability:*** How accessible commodities are to clients who need them.
- ***Distribution and waste management:*** The storage and transportation of products and proper handling and disposal of commodity waste.

- ***Inventory control system:*** A system that manages stock levels and stock movement which informs the resupply point or CBD agent when to either place an order for or issue more supplies, how much to order or issue, and how to maintain an appropriate stock level of all products to avoid shortages and oversupply.
- ***Logistics management information system:*** A system that collects, organizes, and reports data on commodities that will be used to make decisions.
- ***Organizational capacity:*** The capacity of CBD programs and CBD agents, including training, human resources, and so forth.

Each consideration includes a country example that provides a real-life illustration of how the supply chain function affects CBD programs based on interviews and research conducted with 29 global CBD programs. In addition, two or three questions that all CBD program managers should address are listed under each consideration.

Supply Chain Models

This guide proposes four SCM models for CBD programs that may be adapted to a specific program or may be used in combination with each other to fit particular program needs. For each model, this guide presents a general operational description; key characteristics including storage, distribution, and LMIS; resupply decisions; advantages and disadvantages; and recommendations. The four SCM models for CBD programs in this guide are as follows:

- ***Kit System:*** Products are packed in predetermined quantities in a kit for delivery to or pickup by a CBD agent.
- ***Two-Bin System:*** Two equal-sized bins of each individual product are used by the CBD agent. When the first bin is empty, the CBD agent seeks out a replacement bin of stock. The second bin is then used as the "first bin" to ensure that products move from both bins.
- ***Delivery Top-Up System:*** A delivery team travels and delivers products directly to each CBD worker or group of CBD workers on a set interval date
- ***Meet-Up and Resupply System:*** CBD agents meet on a regularly scheduled date and receive supervision and training, are resupplied, and provide data from the previous period.
- The team deemed that the Meet-Up and Resupply model is the most common model being implemented in the field. Given its simplicity and ease of implementation for both CBD agents and resupply points, the Meet-Up and Resupply model is the most highly recommended of the four models in this guide for most CBD health programs.

Key Steps to Implementing a Supply Chain Management System for a CBD Program

This guide presents eight key steps that are required for implementing a SCM system for a CBD program—whether it is being newly designed or has already been in operation for some time:

1. Determine products that CBD agents will distribute.

2. Assess the current functioning of the existing supply chain.
3. Determine what data are to be collected by CBD agents and what data should be reported up the system.
4. Assess the capacity of CBD agents and other relevant staff members.
5. Conduct a workshop for consensus on design of SCM system for the CBD program with local stakeholders.
6. Design the SCM system for the CBD program, including key logistics functions and considerations.
7. Implement the SCM system for the CBD program through a pilot program and then expanded roll-out.
8. Routinely monitor SCM functioning and make adjustments as necessary for improvement.

Conclusion

Functioning supply chains at all levels of the system are critical to ensuring commodity security at the lowest level of the system, which in many programs is a CBD agent. In many contexts, CBD programs connect clients to health services and commodities; therefore, the proper functioning of the supply chain down to the CBD level is essential. Supply chain functioning is more than just fulfilling the six rights of commodity security; it is also about moving information up the system to provide data to program managers. Quality data help managers to make important decisions about how CBD programs function and what changes or improvements need to be made to ensure commodity availability. Overall, CBD agents serve as one of the last critical links in the supply chain and provide greater access to health commodities to communities that need them; therefore, health programs must now invest time, funds, and attention to improving supply chains for CBD programs.

Introduction

Community-based distribution (CBD) offers the potential to significantly increase uptake of, and access to, a variety of health commodities and services, particularly by underserved groups. CBD programs have played and continue to play a significant role around the globe in bringing health information, services, and commodities to clients who otherwise might not have reliable access to such goods and services. With this increased demand, supply chain management (SCM) will serve as an essential part in the success of CBD programs.

Although significant attention is paid to areas such as training and supervision, limited resources are often devoted to SCM, including waste management. CBD programs have inherent characteristics that require unique supply chain considerations, including the distributor's educational level, volunteer or part-time status, and access to resupply. To date, no guidelines or best practices are known to exist specifically for SCM of CBD programs.

A supply chain system has many tiers, commonly starting from the central level and ending at the service delivery point (SDP) or CBD agent. A seamless linkage should exist between the supply chain for CBD agents and the existing supply chain. This link will help to ensure the fulfillment of the six rights: ensuring that the right goods, in the right quantities, in the right condition, are delivered to the right place, at the right time for the right cost.

With support from the Reproductive Health Supplies Coalition's Innovation Fund, John Snow, Inc. (JSI), interviewed 29 CBD programs and conducted significant research to produce two significant documents on SCM for CBD programs: *Promising Practices in Supply Chain Management for CBD Programs: A Global Survey* and this program managers' guide.

Definition of Community-Based Distribution Agent

The World Health Organization (WHO) defines *community health workers* as "men and women chosen by the community and trained to deal with the health problems of individuals and the community and to work in close relationship with the health services" (WHO 2008). WHO further states, "Community health workers should be members of the communities where they work, should be selected by the communities, should be answerable to the communities for their activities, should be supported by the health system but not necessarily a part of its organization, and have shorter training than professional workers."

For the purposes of this guide, the term *community-based distribution agent* will be used to refer to the WHO definitions. In addition, the following titles are used synonymously with the term *community-based distribution agent*: *community health worker*, *community-based health worker*, *health extension worker*, *health assistant*, and *community health volunteer*. Furthermore, CBD agents' remuneration status (paid or unpaid), literacy and education level, or affiliation (a government of a country, a nongovernmental organization or private voluntary organization, or another organization) can vary by program or country. CBD agents can provide products to clients for free or for a fee (cost recovery only), or they can sell products for a small profit. Mode of distribution is quite flexible as CBD agents often

operate out of their own homes or from rudimentary rural health posts. CBD agents can distribute products and services from door to door proactively, or they can remain stationary and allow clients patients to seek them out.

Purpose of This Guide

The foremost purpose of this document is to provide guidance in the design of SCM systems for CBD programs. This guide presents four SCM models for CBD programs that provide guidance on supply chain functions, including logistics management information systems (LMISs), inventory control systems, storage, distribution, and capacity building, that can be adapted and applied to a variety of country contexts. The four models are the Kit System, Two-Bin System, Delivery Top-Up System, and Meet-Up and Resupply System. The secondary purpose of this guide is to share lessons learned on current SCM practices from a range of CBD programs across the globe.

This guide aims to assist program managers and other stakeholders in designing and implementing stronger and more sustainable supply chains for their CBD programs. It does not intend to offer prescriptive SCM models to be followed rigidly. Rather, it is intended to serve as a resource of tools that can be modified and adapted for use by any public sector government or other organization that implements CBD programs. Additionally, it is not intended for emergency response or immunization campaigns, as different considerations and resources are required to support these types of systems.

This guide focuses specifically on the supply chain elements of CBD programs. It does not provide an in-depth discussion on important elements such as incentives, remuneration, and so forth. These issues are critical and have implications for the supply chain but are beyond the scope of this work.

Overall Project Methodology

The project's research design was comprised of two phases. The first included a qualitative interview process as well as significant web-based searches for additional resources, publications, tools, materials, and program information. The second phase began with a thorough review of current CBD practices before identifying insights from JSI's supply chain and logistics projects. The team proceeded to construct four SCM models that can be used or adapted for CBD programs for any health product.

Qualitative Interviews

The project team drafted a simple five-page qualitative questionnaire that included sections on general program information, storage and distribution, product availability and access, LMISs, waste management, organizational capacity and human resources, tools and technology, and recommendations and challenges. Prior to incorporation in this particular study, the questionnaire was tested with one country program to ensure ease of use and readability.

The team then compiled a preliminary list of partners to interview—those with active CBD programs as well as JSI project offices that support CBD agents. This list continued to expand as subsequent subjects would recommend others to interview or as web-based searches resulted in new contacts. Although the list includes nearly 100 professional

contacts, a total of 29 of these contacts yielded sufficient information to warrant inclusion in the study. The team interviewed 19 projects in sub-Saharan Africa, 5 in Asia, 4 in Latin America and the Caribbean, and 1 global project.

Web-Based Research

The project team conducted extensive web-based searches using a combination of different search terms. The team consulted the United States Agency for International Development (USAID) Development Experience Clearinghouse, MEDLINE, multilateral organization websites (including those of the United Nations Population Fund and the World Bank), the JSI project and publications databases, and Google to find additional information on supply chain resources for CBD programs.

Overall, more valuable and insightful information was found through the one-on-one interviews (conducted either by phone, by email, in person, or through some combination thereof) because little evidence was discerned from publications on the web regarding supply chain practices for CBD agents or programs. A plethora of information exists generally on CBD program research, project reports, and training resources, but few of these sources proved to have substantial information regarding supply chain responsibilities.

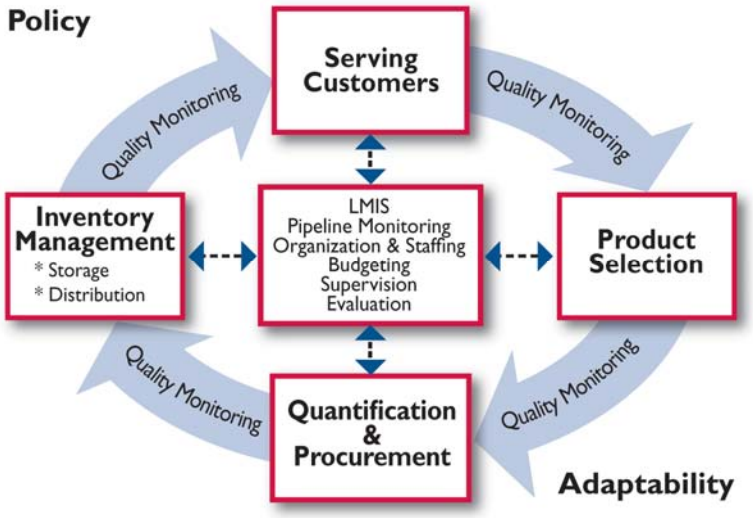
Project Outputs

The resulting products of this research include an extensive write-up of the 29 projects interviewed, documenting their lessons learned in SCM for CBD programs. The document, *Promising Practices in Supply Chain Management for CBD Programs: A Global Survey*, complements the second project output, S*upply Chain Models and Considerations for Community-Based Distribution Programs: A Program Manager's Guide*. This guide, as described previously, provides practical information and considerations for designing and implementing an SCM system for a CBD program. Used together, these two resources fill a unique gap that exists in both SCM for health commodities and CBD programming.

Lessons from the Field: Supply Chain Considerations for CBD Programs

A properly functioning supply chain is a critical piece of a successful CBD program. When in the design and planning phase of a CBD program, program managers must address a variety of supply chain considerations, including product availability, distribution and waste management, inventory control systems, LMISs, and organizational capacity. For already-functioning CBD programs, program managers will find it useful to be able to analyze how the identified supply chain functions impact the current operation of their CBD programs.

Figure 1: Logistics Cycle



Source: USAID | DELIVER PROJECT (2009).

Although all portions of the logistics cycle (Figure 1) are critical for successful supply chain functioning, this section of the guide will describe how five supply chain functions or considerations in particular are significant for CBD programs: product availability, distribution and waste management, inventory control systems, LMISs, and organizational capacity. Each consideration description includes a country example that provides a real-life illustration of how the supply chain function affects CBD programs. In addition, two or three questions that all CBD program managers should address are listed under each consideration.

Product Availability

Getting health commodities down to the very “last mile” is a key focus of many CBD programs. Without commodities, CBD agents will not be able to improve contraceptive prevalence rates, treat childhood illnesses, or fulfill their mandates to reach communities without access to health care. No product? No program! Product availability in CBD programs depends on a variety of factors whose locus of control may rest with the CBD agent, the resupply facility, or the larger supply chain itself.

Many health programs do not prioritize the supply chain and, therefore, do not often realize that if the supply chain does not function properly down to the resupply point for the CBD agent, then implementing a CBD program will not increase product availability or program reach—in fact, it may lessen both. Possible causes of lack of product availability at the resupply point could include the following:

- Orders not submitted on time
- Inaccurate or no reporting
- Products not delivered on time or according to schedule
- Inaccurate commodity forecasts
- Delayed procurement processes
- Improper storage
- Lack of financing (at the SDP level to purchase commodities or at higher levels to procure products or distribute them).

In addition, the types of products that a CBD agent distributes and the procuring body that buys those products may be the primary determinants of availability at the resupply level. For example, essential medicines that the public sector almost always purchases, such as antibiotics used for treating infections and childhood illnesses, may not always be in full supply (i.e., always readily available). Whereas, commodities like antiretroviral (ARV) medications for patients living with HIV or tuberculosis (TB) regimens may actually be in full supply for those on treatment due to donor-funded support for procurement of the commodities and because of the nature of the medicines (they must be taken every day for certain period of time).

Partners In Health (PIH) is working with the Ministry of Health in Rwanda to implement a national community health worker (CHW) program that focuses on the management of major childhood illnesses, including diagnosing, classifying, and treating or referring for diarrhea, fever or malaria, pneumonia, and malnutrition. CHWs in the PIH catchment areas are also trained to observe and distribute ARV and TB medicines daily to patients in their catchment areas. ARV and TB medicines distributed by CHWs are procured with monies from the Global Fund and other donors, whereas other commodities are largely procured by the ministry. Consistent donor funding as well as structured treatment regimens ensures full supply for CHWs' ARV and TB patients. Although the Rwandan Ministry of Health has made great strides in health commodity procurement, budget restrictions and lack of adequate data for forecasting sometimes contribute to stock availability challenges for CHWs.

Questions to Consider: Product Availability

- How well does the current SCM system function down to the CBD resupply point?
- Are all CBD commodities readily available and consistently in supply?
- Is there adequate, sustainable funding for the CBD program and relevant commodities?

Distribution and Waste Management

Two of the more commonly addressed logistics functions for CBD programs include distribution (storage and transportation) and waste management. In large part, the types and quantities of commodities selected for CBD agents to distribute will dictate storage and transportation requirements. Some commodities, such as malaria bed nets and condoms, are bulkier and require additional storage and transportation space. Many CBD programs provide CBD agents with a bag or backpack to transport their products or a box in which to store their commodities at home. It is important to ensure not only that the quantity and volume of products that CBD agents will distribute are manageable for them to carry and store, but also that the CBD storage receptacle is large enough to store all the products yet small enough to be manageable to carry when seeking out resupply. In addition, any products requiring special storage conditions (i.e., cool or cold chain for vaccines) may need additional storage resources. Transportation options for CBD workers, either when traveling to be resupplied or when distributing to clients, are usually limited to walking on foot or riding by bicycle (which must be maintained). At times, CBD agents may use a bus or other means of public transportation to travel to the resupply point. Again, storage mechanisms and volume of products must take into account the primary transportation means of the CBD agent. For example, transporting multiple boxes of products might be difficult on foot or on a bicycle.

In some programs, CBD agents now also dispense injectable contraceptives, rapid diagnostic tests, and routine immunizations, all of which require special waste management considerations and special disposal of used syringes, needles, and glass vials. In these cases, CBD agents also need to be supplied with sharps boxes and be instructed on the importance of bringing back the sharps boxes to the resupply point for proper disposal.

With the advent of autodisable syringes like SoloShot® and preloaded, autodisable syringes such as Uniject®, CBD agents who dispense injectable contraceptives and vaccines may have to be supplied with only one or two commodities instead of three (vial, syringe, and needle). Fewer products mean more simplified inventory management and smoother distribution. Preloaded autodisable syringes also present fewer products to dispose of in a sharps container (in addition to being a safer way to provide injections). In Kenya, Uganda, and Zambia, Family Health International is conducting studies on the ability of CBD agents to use Uniject® preloaded with the injectable contraceptive DMPA (depo-medroxy progesterone acetate) and has found encouraging results and few problems with CBD agents being able to use the sharps boxes and return used cartridges.

Questions to Consider: Distribution and Waste Management

- What products will your CBD program distribute and what volumes or weight would a CBD agent be expected to manage?
- Will the CBD make a visit to the resupply site to receive additional products, or will the products be delivered to the CBD directly?
- What is the distance that a CBD agent would have to travel for resupply, and how will he or she travel for resupply?

Inventory Control Systems

One of the most critical elements of logistics system is the inventory control system. An inventory control system is a system that informs the CBD agent and the CBD resupplier (someone at the health facility level or other lowest level of the system) when to either place an order for or issue more supplies, how much to order or issue, and how to maintain an appropriate stock level of all products to avoid shortages and oversupply. Unfortunately, designers of CBD programs do not always think of the details related to inventory control systems when beginning to implement a CBD program. Often CBD agents are resupplied with quantities that are based on what the CBD agent thinks he or she needs or on whatever the resupply point has available to give to the CBD agent. For proper supply chain functioning, an inventory control system must be in place for CBD programs, but this system does not need to be complicated to work well.

The next section of this guide, "Supply Chain Models for CBD Programs," presents four different types of inventory control systems that could be used for CBD programs. The tables in that section present a wide range of considerations that should be thought about before selecting or moving to a particular system. The "Questions to Consider" text box presents key questions for all CBD program managers to consider and answer if they intend to operate a well-functioning logistics system for their CBD program.

The Zambian Ministry of Health does not operate one national CHW program; instead, districts have designed their own CHW programs with different inventory control systems and different sets of products to be distributed by the CHWs. For example, in one district, CHWs distribute oral contraceptives and condoms and are resupplied monthly or as needed in between monthly visits, based on consumption data. In another district, CHWs receive a kit of supplies (including condoms, oral rehydration solution, basic health supplies, and pain relievers) every month and cannot be supplied other than through the kit. The Ministry of Health is also implementing a new two-bin inventory control system for the distribution of two different artemether-lumefantrine presentations. Although having many different kinds of inventory control systems is not necessarily recommended, the strength of any CBD program is that it can be adapted to the needs of its specific community.

Questions to Consider: Inventory Control Systems

- What is the minimum amount of stock that a CBD agent should have at all times to ensure he or she does not stock out? The maximum amount to minimize wastage?
- How frequently should the CBD agent be resupplied?
- Who will determine the resupply quantities—the CBD agent or the resupplier?
- How will the resupply quantities be calculated? Is it appropriate to the literacy and education level of the CBD agent?

Logistics Management Information Systems

Most CBD programs collect and track service or patient data, such as new or continuing user, day seen, diagnosis, and medication given. This information contributes to a health management information system (HMIS). It is also important for CBD agents to track some type of basic logistics management information such as current stock on hand and quantity dispensed. Collecting these data assists program managers in calculating resupply quantities, monitoring stock status of CBD agents, and reporting CBD dispensed-to-user data up the logistics system. Tracking CBD agent dispensed-to-user data separately up the system enables the program managers to monitor if CBD agents have the correct type and quantity of products, to conduct more accurate forecasts on the basis of consumption data, and to have specific information on the impact and reach of the CBD program. Depending on the type of inventory control system in place for the CBD program and on the capacity level of the CBD agents, a variety of LMIS options exist for CBD programs.

The most basic type of CBD LMIS is where a health facility or resupply site does most of the logistics recordkeeping for the CBD agents associated with that site. Products issued to CBD agents could be counted as dispensed (in the same way as the SDP may dispense products regularly from the pharmacy to a nurse, ward, or dispensing unit, which then dispenses them to patients), and CBD agents would not be required to fill out additional paperwork. In a more complex LMIS for CBD programs, CBD agents would track stock status on a stockcard and dispensed-to-user data on some type of register and would compile that information in some type of summary report. A variety of sample forms and reports for the various SCM models for CBD agents can be found in the next section of this guide.

The BRAC Community Health Volunteer Program in Uganda does not require its volunteers to collect any service or logistics information. These volunteers are given a small start-up loan and then sell different products at a small markup. They use the revenues to purchase additional products from the BRAC offices each week if they so choose. The supplying BRAC office keeps track of how much each volunteer purchases instead of having the volunteers focus on data collection.

Rural health extension workers (HEWs) in Ethiopia's public sector collect and report a small quantity of logistics data. A beginning monthly stock balance, quantity received, and ending balance are reported. The HEWs, who are based at a health post, then submit their report to the health center, where the reported data are used to estimate actual consumption. Resupply quantities are calculated by adding the current and previous month's quantity consumed and then subtracting the stock on hand at the end of the month from that total. The HEWs report very simple data up to the health center level, where more complicated calculations are completed. Issue quantities to HEWs are aggregated with the health center's other consumption a consumption is therefore not tracked separately up the system but is included as part of total health center consumption.

Questions to Consider: LMISs

- Do you want your program to be able to track CBD logistics data (either dispensed or issued) separately up to the national level? Or will such data be aggregated into health facility or resupply site data?
- What is the educational or competency level of your CBD agents, and are the recording and reporting requirements suitable?
- What is their workload, and what kind of a burden for reporting can they reasonably bear?
- What are your preexisting HMIS reporting requirements?

Using Technology in CBD Programs

Mobile technologies can serve as a powerful tool to facilitate data collection and transfer from CBD agents to higher levels in a health system. Incorporating the use of mobile technologies in a CBD program may be challenging depending on the actual cost of the technology, network availability in rural areas, and training implications (especially for low-literacy CBD agents).

However, as in the case of efforts to use mobile technologies such as cell phones and personal data assistants (PDAs) at health facility levels, an opportunity does exist to potentially use cell phones or PDAs in CBD programs for collecting data, requesting diagnosis or treatment information, and mapping CBD coverage areas using geographic information systems.

The Asociación Pro-Bienestar de la Familia de Guatemala (APROFAM-IPPF affiliate) used Palm Pilots® to manage CBD agent inventory. Volunteer CBD agents are visited by APROFAM staff who upload sales data to the clinic thus automatically generating resupply quantities for the CBD agent. This information is also sent to a management system for continuous program monitoring and evaluation. These technological innovations were patterned after a private sector program designed by Pepsi (PepsiCo, Inc.) in Guatemala.

As more data become available on the utility of mobile technologies at the health facility level, additional research should also be conducted on how cost-effective and practical it would be to use mobile technologies in CBD programs.

Organizational Capacity

CBD programs have the potential to be extremely effective at meeting the health needs of some of the most at-risk and in-need populations. However, the administrative and training requirements for starting up and maintaining such programs should not be underestimated. Given high turnover rates (especially in volunteer programs), rapidly changing clinical information, and the capacity levels (literacy and numeracy) of some CBD agents, the capacity-building demands on an organization implementing a CBD program can be quite high.

CBD training programs can last anywhere from a few days to months depending on the breadth and scope of the program. Most training programs focus primarily on building clinical knowledge and counseling skills. SCM is not often covered or is only briefly referenced when teaching how to fill in required forms; however, SCM is much larger than LMIS. Although most of the burden and major responsibilities are incurred at the higher levels, CBD agents handle pharmaceuticals and, as such, should also receive basic SCM training in a range of logistics skills, including inventory management and completion of LMIS forms.

CBD programs often have opportunities for on-the-job training that should be used appropriately. For example, monthly meetings or supervisory visits are perfect times to review different treatment guidelines, inspect commodities in storage, and review the completion of forms. Depending on the educational and program competency levels of each CBD agent, supervisors and program managers should be prepared to invest a substantial amount of time in capacity building.

Incentives such as payment can lessen programmatic challenges (e.g., CBD agent turnover) that cause additional demands on an organization. Performance-based compensation (e.g., paying CBD agents after submission of correctly completed reports) also helps to ensure timely and accurate reporting.

In operation since 1994, the Lady Health Worker Program in Pakistan has developed a comprehensive system that has trained nearly 100,000 lady health workers (LHWs) and 4,000 lady health supervisors (LHSs). LHWs participate in a 3-month extensive classroom training followed by 12 months of field and classroom training. They have close, daily working relationships with the LHSs.

In Nepal, the Ministry of Health has implemented the Female Community Health Volunteer program since 1988. The 50,000 female community health volunteer (FCHVs) all received 18 days of training, which included hands-on training at a health facility as well as regular refresher and on-the-job trainings from their supervisors.

Because the success of the LHW and FCHV programs, many other programs implemented by the ministries of health in Pakistan and Nepal try to add their own products on to the current list of commodities that the LHWs and FCHVs currently distribute for free. With the growing success of the CBD programs, managers must be careful to avoid overburdening CBD agents with too many tasks or commodities, which could affect their capacity to do their work at the same level of quality.

Questions to Consider: Organizational Capacity

- Have you mapped out the catchment or program area to determine the number of CBD agents needed, number of supervisors, and number of CBD agents per resupply point?
- What logistics topics should be included in training, and how long is the training?
- How will CBD agents be monitored, supported, and updated with new program changes?
- Will any incentives be provided to CBD agents to encourage continued participation?
- Is there sufficient capacity at the resupply point or at higher levels in the system to manage the CBD agent, analyze data, and monitor and supervise CBD agents in addition to current responsibilities?

THE ROLE OF INCENTIVES IN CBD PROGRAMS

Most of the existing research on incentive provision for CBD agents addresses how to use incentives to improve CBD agent retention or to motivate CBD agents to improve performance; such research has not yet been conducted in relation to improved supply chain functioning.

- Intrinsic or more socially valued incentives can be used to motivate volunteer CBD agents. Some programs provide free carrier bags, rain boats, umbrellas, or other goods to assist CBD agents in completing their tasks and also increase public awareness of their presence and role. Involving community leaders in the selection of CBD agents has helped some programs to heighten the CBD agent's status in the community. When specifically selected by community leaders and publically recognized, CBD agents may become more respected in their communities and may value their role in serving their clients even more. *In Nepal, FCHVs receive national public recognition during an annual FCHV day and through a national postage card.*
- Remuneration in the form of a salary, a transportation reimbursement, or profit retained from product sales can be a monetary incentive. Not all programs have the financial resources to provide salaries for their CBD agents; therefore, selling commodities for a small profit is often a successful way to generate a sustainable income for the CBD agent while also providing communities greater access to health products. CBD agents then have the incentive to sell products on the basis of the potential income they can earn. *Community heath volunteers in BRAC programs are provided a one-time start-up stipend to purchase commodities from BRAC and then sell them at a slightly higher cost and keep the small profit.*
- Performance-based remuneration, microloans, and cooperative funds are new incentive offerings in CBD programs. By instilling a sense of responsibility and independence, performance-based payments, as well as access to microloans, are a progressive way of ensuring quality programs and CBD agent livelihoods. *Partners in Health in Rwanda uses performance-based mechanisms as an incentive to CBD agents. If CBD agents complete their reports correctly and on time, funds are paid into a self-managed cooperative fund that provides small grants to those same CBD agents.*

Supply Chain Models for Community-Based Distribution Programs

In a supply chain, it is important to implement an inventory control system to effectively manage products and consistently serve clients. The models described in this section can be implemented and adapted to any particular program or country context.

The four SCM models for CBD programs are the Kit System, Two-Bin System, Delivery Top-Up System, and Meet-Up and Resupply System.

- ***Kit System:*** Products are packed in predetermined quantities in a kit for delivery to or pickup by a CBD agent or resupply point.
- ***Two-Bin System:*** Two equal-sized bins of each product are used by the CBD agent. When the first bin is empty, the CBD agent seeks out a replacement bin of stock. The second bin is then used as the "first bin" to ensure that products move from both bins.
- ***Delivery Top-Up System:*** A delivery team travels and delivers products directly to each CBD worker or group of CBD workers on a set interval date.
- ***Meet-Up and Resupply System:*** CBD workers meet on a set interval date and receive supervision and training, are resupplied, and provide data from the previous period.

For each model, this guide provides a basic description of how the model operates, how and when resupply decisions should be made, the number of products best suited for it, storage and distribution requirements, the organizational capacity needs, suggestions on LMIS design and implementation, and, finally, the advantages and disadvantages of the model. Sample LMIS forms for SDPs and CBD agents are also included with each type of system. A summary, recommendations, and key steps for implementation are all provided at the end of the section.

The models may be implemented as is, or elements of the models may be used in combination with each other. In addition to the already-mentioned supply chain considerations, policies such as prescribing protocols, standard treatment guidelines, and other policies that relate to products should also be taken into account. Additionally, the models described in this section should be compatible with existing supply chains that supply the products to the CBD resupply points.

Model 1: Kit System

Factor	Model 1: Kit System
Description	Kit models have been used extensively throughout many health delivery systems due to their ease of distribution and seemingly low workload burden on both CBD agents and their resupply points. Kits are prepacked and have predetermined quantities and types of health products. Kits may be packed by any of the following: the manufacturer or the central-level, regional, district, or lowest-level SDP. Because mass quantities of kits are usually physically prepacked at a higher level with predetermined quantities (usually based on commodity forecasts for a general catchment area population), kits are well suited to provide CBD agents with a set of general essential medicines and supplies. The lower the level at which kit is packed, the more likely the kit contents will meet particular community needs. Packing kits for very specific, tailored regimens such as prescribed products like antiretroviral (ARV) medications is very difficult. This guide presents two options for a Kit System: Option 1 is a "true" Kit System where a CBD agent is supplied with a kit every few months (or other determined time frame) and no reports or information are required. Option 2 is more of an "informed" Kit System where the CBD agent actually does track what quantities from the kit were dispensed to users and also returns any remaining quantities of commodities leftover in a kit before a new kit is received. These options are described in more detail in the LMIS section of this table.
Number of Products	Each kit can include upward of 30 different products depending on program need. Each kit should also include set numbers and set types of product. Kit contents (both in type and quantity of product) do not usually differ from place to place (though they sometimes vary by catchment area).
Storage	Depending on quantity and type of products, space considerations should be taken into account for places where kits are packed and assembled as well as where they will be stored. CBD agents should consider storage space depending on the number kits allotted to them. Lastly, when designing a Kit System, what should be done with leftover or unneeded supplies should be determined as well as what a CBD agent should do if she or he runs out of supplies before receiving another kit.
Distribution	If the kits are packed at a higher level, they should be transported to the CBD agent's resupply point. Depending on the size and number of kits allocated to each, transport may be challenging. If kits are packed at the resupply point for the CBD agents, they can be more tailored to the CBD agent or program and will need only to be transported or picked up by the CBD agents. Traditionally kits are picked up by CBD agents, but it is possible to have them distributed directly to CBD agents. A set time should be scheduled for CBD agents to pick up kits, which will result in fewer burdens on the resupply point but will require CBD agents to be able to travel. There also can be a combination system where CBD agents receive a basic supplies kit and then receive additional commodities on an as-needed basis.

<table>
<tr><th>Factor</th><th colspan="2">Model 1: Kit System</th></tr>
<tr><td>LMIS</td><td>Option 1: Simpler “true” Kit System with no calculations or recordkeeping required of the CBD agent.

CBD agents

• Do not need to make calculations if the kit is assumed to be dispensed when issued to the CBD agents

• Receive a new kit at each set resupply time period

Resupply points

• Track the number of kits issued</td><td>Option 2: “Informed” Kit System that requires minimal recordkeeping by CBD agents and allows tabulation of actual dispensed-to-user data from CBD agent.

CBD agents

• Report what was issued and bring back extra to reduce wastage

• Do minimal recordkeeping because the resupply point and LMIS are able to track consumption data by CBD workers

Resupply points

• Report kits issued

• Report CBD agent consumption data and aggregate so that the program can eventually make informed changes to kits</td></tr>
<tr><td>Resupply Decision Point</td><td colspan="2">In the Kit System, there is usually a regular, set distribution or pickup time for the kits; therefore, the CBD agent does not have to make a decision about whether to seek resupply. The kit should be distributed or picked up at a regular interval without the CBD agent having to ask for it. Alternatively, some Kit Systems provide a CBD agent a generic kit, and when that kit is finished or low, the CBD agent then seeks or requests another kit.

If a CBD agent is very low on supplies and if it is possible for him or her to request additional supplies separate from the kit, he or she will need to decide whether an emergency request for supplies is needed.</td></tr>
<tr><td>Basis for Resupply</td><td colspan="2">• The kit has predetermined quantities.

The exact quantities that should be included in the kit should equal the estimated quantity of commodities that should be used in the time until resupply of a kit. For example, if the CBD program would like kits to be distributed or picked up once every two months, then the quantities of commodities within the kit should equal the quantity of commodities forecasted to be consumed in two months. Some systems allow for CBD agents to seek extra supplies if needed before the new kit arrives or is picked up.</td></tr>
</table>

Factor	Model 1: Kit System
Organizational Capacity	**For CBD agents:** • *Option 1:* Little training is required on recordkeeping. This system works well for low-literacy and low-computational levels. • *Option 2:* Basic training is provided on one simple form, including what to do with extra supplies and what to do when CBD agents need more supplies. CBD agents should have basic stockcard skills. **For resupply points:** • Because of the relatively simple nature of this system, minimal training of the resupply point staff is required. • Resupply staff members will need to have basic stockkeeping and recordkeeping skills. • If option 2 is used, where CBD agents bring back excess supply, more data potentially are available to either report up the system or to adjust the resupply point kit contents.
Advantages	• Good for a large number of CBD agents • Low data collection burden for CBD agents • Fairly simple stock and information management skills needed for resupply facility • Appropriate for general, essential medicines and supplies or, if packed at a lower level, possible to tailor to community needs
Disadvantages	• The system is not easy to customize to varying consumption rates between CBD agents (leading to wastage or stockouts). • It is not an ideal system for specific treatment regimens (such as ARVs). • In the "true" kit option, actual dispensed-to-user data cannot be tracked. • Depending on the packing location, adequate space is needed for receiving, packing, and distributing. • If a higher level is packing the kits, it requires packing function and transportation to the resupply point

SAMPLE CBD AND RESUPPLY POINT FORMS FOR THE KIT SYSTEM (OPTIONS 1 AND 2)

In a "true" Kit System (as described in option 1), CBD agents are not required to complete any logistics forms. The resupply point tracks only its own distribution of kits to the CBD agents. The sample form that follows shows how the CBD agent kits are tracked and reported, as any other product would be from a resupply point. Resupply points count the actual kit as a unit and not the individual items inside. Because the number of kits issued to CBD agents is reported, an assumption is made that all of the contents in the kit have been dispensed. In addition, this method of reporting the number of kits issued, allows higher levels in the system to have a picture of the breadth and reach of the CBD program. Unfortunately, no information is collected on whether the supplies in the kit are consumed or whether the quantities and types of products offered are correct.

Kit System Option 1: Resupply Point Commodity Report Form (Completed by Resupply Point Only)

Resupply Point Commodity Report (with CBD Kits)

Resupply Point Name: _____ Reporting Period: _____

Resupply Point Location: _____

	A	B	C	D	E	F	G	
Product	Beginning Balance	Quantity Received	Losses	Adjustments	Quantity Dispensed	Ending Balance (Physical Count)	Days Stocked Out	Remarks
CBD Kits								
Male condoms								
Microgynon								
Ovrette								
NVP 200 mg tablets								
NVP syrup								

Report Completed by (Name): _____ **Approval (Name):**_____

Signature: _____ **Signature:** _____

Date: _____ **Date:** _____

With an "informed" Kit System (as described in option 2), a CBD agent receives a prepackaged kit of products, but then instead of simply picking up another kit and adding those products to any leftover commodities from the previous kit, the CBD agent brings back any excess commodities and also reports the ending balance. This method allows the resupply point not only to track actual dispensed-to-user data, but either to repack future kits with excess products from CBD kits or to use excess products from CBD kits in its own inventory. In addition, the information that the resupply point collects on actual quantities dispensed will help program managers determine what products and quantities are most useful for CBD kits.

Kit System Option 2: CBD Kit System Commodity Report (Completed by CBD Agent and Resupply Point)

CBD Kit System Commodity Report

CBD Name: _____

Reporting Period _____

PRODUCTS	*Tabs Paracetamol*		*ORS (packets)*	*Eye Ointment (tubes)*	*Tabs Mebendazol*	*Syp Mebendazol*	*Sticking Plaster (pieces)*	*Thermometer*	*Antiseptic Lotion (bottles)*	*Cotton Wool (rolls)*	*Cotton Bandages (pieces)*	*Male Condoms (pieces)*
Kit Contents: Beginning Balace *(preprinted)*	200	5	25	5	200	5	100	1	5	5	20	300
Kit Contents:- Ending Balance *(physical count)*												
TO BE COMPLETED AT RESUPPLY POINT												
Quantity Dispensed by CBD *(Beginning Balance - Ending Balance)*												

CBD Printed Name: _____

CBD Signature: _____

Date: _____

Supervisor Printed Name: _____

Supervisor Signature: _____

Date: _____

Model 2: Two-Bin System

Factor	Model 2: Two-Bin System
Description	Each CBD agent receives two equal-sized bins (containers, boxes, cartons, sacks, etc.) of each individual product (i.e., not a kit). When the first bin is empty, the CBD agent seeks out a replacement bin of stock. The second bin is then used as the "first bin" to ensure that products move from both bins. For example, a CBD agent may have two bins of condoms, two bins of combined oral contraceptives, and two bins of progestin-only pills, or six bins in total of three products. This system works best for CBD programs that are fairly stable and are not seeing a significant increase or decrease in quantities distributed. No calculations need to be made by the CBD agent, and paperwork is kept to a minimum.
Number of Products	Because two bins are needed for each product, this type of system is recommended for three to five products (i.e., six to ten bins). The two-bin system is also better for a targeted program (malaria, family planning, TB) and for products that are less bulky to reduce bin size. The size of the bin may potentially vary by catchment area, but generally sizes do not differ from one CBD agent to the next.
Storage	Depending on the number of bins and volume of product (which affects the size of the bins), the space that CBD agents will need to have available in their home or health post may be considerable. Resupply points must also be able to store quantities of product to refill bins for all of their CBD agents and to fill additional bins in case of loss or damage.
Distribution	There is an initial burden of procuring and distributing bins to CBD agents, which may also be hindered by transport challenges. Even if the supply chain system and bin size and quantity are adequately designed, the resupply point may be in a constant state of resupply to the CBD agents, with agents coming to seek resupply whenever a bin is empty. Similarly, CBD agents may also have to travel multiple times to the resupply point as one bin empties and then another. The resupply point resupplies CBD agents with pre-established quantities. Bin sizes can be adjusted to reduce the number of trips required for resupply, but such an adjustment will require the resupply facility to recalculate and determine the quantities to be included in each bin, which could result in different bin size requirements (or even number of bins) for different CBD agents.
LMIS	• For CBD agents: CBD agents do not report any stock data to the resupply point. The only form that they are responsible for is a simple "resupply request" consisting of a preprinted form found at the bottom of each bin that is submitted to the resupply point in order to receive more supplies. • For resupply points: In the Two-Bin System, the resupply points must use stockcards and record the total quantities of products issued to CBD agents (quantity of products should equal quantity of product in one bin). Resupply points should distinguish between an issue to a CBD agent from an issue to a facility department (e.g., a maternity ward) on the stockcard. If the resupply point wants to report issues to CBD agents separately up the system, this distinction will be necessary. In addition, if the resupply point combines its own

	dispensed-to-user data with issues to CBD agents (as a proxy for consumption by the CBD agents' clients), the resupply point will need to be careful to avoid double-counting such data (i.e., as both issues and consumption).
Resupply Decision Point	The CBD agent makes a decision to seek out resupply when the first bin of the two bins of one product becomes empty; it is possible that bins of different products will empty on different days, necessitating multiple visits to the resupply point.
Basis for Resupply	• Predetermined bin quantity • The exact quantities that should be included in ONE bin should equal the estimated quantity of commodities that should be used in the time between CBD resupply visits. For example, if the CBD program would like CBD agents to visit the resupply point once a month, then the quantities of commodities within the one bin should equal the quantity of commodities forecasted to be consumed in that month. The second bin, therefore, acts as the buffer stock in case the CBD agent cannot make a resupply visit immediately when the first bin is empty. When the first bin is refilled, the second bin is then used as the primary bin (to reduce risk of expiry), and the refilled bin is then the buffer bin. The quantities and size of the products will dictate how large the bins have to be.
Organizational Capacity	• For CBD agents: Little training is needed for record-keeping, and this system is ideal for CBD agents with low-literacy and low-computational skills. A transportation provision or reimbursement may need to be provided depending on where resupply point is. • For resupply points: Resupply points should have stockcard skills, know exact bin quantities, and have staff members available and prepared to resupply CBD agents on any given day. Resupply points have more individual interaction with CBD agents, but group meetings and trainings must be scheduled and happen separately.
Advantages	• This system is ideal for CBD agents with low literacy or capacity. • No recordkeeping is required by CBD agents. • The resupply decision is simple because of the static resupply quantity (i.e. same each time—one bin). • Potential for stockouts is low because of constant resupply.
Disadvantages	• Resupply point staff members may potentially resupply CBD agents with additional quantities for bins on multiple days. • This system works best with few products. • CBD agents may need to travel frequently for resupply; the system works best when CBD agents are located close to resupply point. • Real-time consumption data is harder to capture. • If the program grows or decreases, the quantity held in each bin needs to be revised accordingly.

SAMPLE CBD AND RESUPPLY POINT FORMS FOR THE TWO-BIN SYSTEM

In the Two-Bin Model, a CBD agent has two bins of every product he or she carries. Whenever one bin of a product is empty, the CBD agent should take the preprinted form at the bottom of the bin back to the resupply point. With this form, the resupply point will know how much product with which to resupply the CBD agent.

Two-Bin System: CBD Two-Bin Resupply Request (Signed and Turned in by CBD Agent to Resupply Point)

CBD Two-Bin Resupply Request

PRODUCT *(preprinted)*: Female Condoms

BIN QUANTITY *(preprinted)*: 100 pieces

CBD Printed Name: _____

CBD Signature: _____

Date: _____

Supervisor Printed Name: _____

Supervisor Printed Name/Signature: _____

Date: _____

Resupply points will most likely resupply a CBD agent out of its own store of supplies and therefore record that product as issued to a CBD agent. Most simply, a resupply point can sum those products issued to CBD agents with their own facility's dispensed-to-user data. Should a CBD program want to track these data separately, an additional column could be added to the following form. This additional column would track "Issues to CBD agents" separate from the "Dispensed to User" data column. If the additional column is added then you would remove "Issues to CBDs" text from column E.

Two-Bin System: Resupply Point Commodity Report and Request (Completed by Resupply Point)

Resupply Point Commodity Report & Request (CBD Two-Bin)

Resupply Point Name: _____ Reporting Period: _____

Resupply Point Location: _____

	A	B	C	D	E	G	H	M
Product	Beginning Balance	Quantity Received	Losses	Adjustments	Quantity Dispensed (facility dispensed data + Issues to CBDs)	Ending Balance (Physical Count)	Days Stocked Out	Remarks
Product A								
Product B								
Product C								
Product D								
Product E								
Product F								

Report Completed by (Name): _____ **Approval (Name):**_____

Signature: _____ **Signature:** _____

Date: _____ **Date:** _____

Model 3: Delivery Top-Up System

Factor	Model 3: Delivery Top-Up System
Description	In this model, deliveries are made directly to each CBD agent or group of CBD agents. Deliveries can be made by truck, car, or bike or on foot depending on quantity of products and the geographic dispersal of the CBD agents. A supervisor or other staff person (the "delivery team") travels to each CBD or group of CBDs at a set interval and date (e.g., first Tuesday of each month, second Monday, or last Friday). CBD agents may or may not be required to keep basic records that indicate quantities dispensed. All other resupply calculations are completed by the delivery team and then saved to inform the next visit. Information on what was issued to or dispensed by CBD agents is available for reporting up the system.
Number of Products	Given that the delivery team must travel with sufficient quantities of products to resupply all the CBD agents it will visit, a maximum of 10–15 products are recommended for this system. However, more products can be added depending on both (a) the amount and type of transportation available and (b) the volume of commodities (bulky packaging, slimmer products, etc).
Storage	A storage area is required for each CBD agent in his or her home (box, cupboard, bag, etc.). The delivery team will need sufficient storage space to transport resupply quantities on delivery runs. Depending on the number of products and number of CBD agents to visit on each run, the required amount of space that the delivery team will need varies, but it could be quite large (i.e., a truck could be needed).
Distribution	If deliveries are made by car, truck, or bike, reliable transportation (vehicle maintenance, etc.) and a sufficient road network are necessary to complete deliveries. If deliveries are made on foot, resupply quantities must be low to decrease the burden of carrying supplies. Regular delivery team and supervision visits must be adhered to so that adequate stock status is maintained for all CBD agents.

Factor	Model 3: Delivery Top-Up System
LMIS	**For CBD agents: There are two options for data collection:** • Option 1: No data collection on the number of products dispensed is necessary. The delivery team tracks what was issued to the CBD agent and determines what is left during the next visit; the difference equals quantity dispensed by the CBD agent. • Option 2: Minimal data collection is required. Possibly a tick sheet is used to note how much of each product was dispensed. **For delivery teams:** • If CBD agents do not record any data on the number of products dispensed, the delivery team will need to have a very organized system that tracks exactly how much each CBD agent has of each product after being resupplied by the delivery team. The team would then complete a physical count at the next visit and assume that the difference of what was on hand at the previous visit minus the quantity on hand at the next visit equals the quantity dispensed. • Delivery teams could also rely on tick sheets that the CBD agents complete when they dispense products to clients. Delivery teams could total the tick sheets and resupply on the basis of this quantity and also report exact dispensed-to-user data by CBD agents. • Delivery teams must keep stockcards of all products being transported. • Delivery teams must also calculate estimated resupply quantities prior to deliveries to appropriately stock the truck, bike, or bag.
Resupply Decision Point	In the Delivery Top-Up System, there is a regular, scheduled delivery time of commodities set by the delivery teams; therefore, the CBD agent does not have to make any decision regarding whether to seek out resupply: the supply is always delivered directly to the CBD agent. The deliveries should be made at approximately the same time every distribution interval. If a CBD agent is very low on supplies, he or she will need to decide whether an emergency request for supplies is needed.

Factor	Model 3: Delivery Top-Up System
Basis for Resupply	There is no set or predetermined resupply quantity. The resupply quantity is based on either what the CBD agent dispensed or, if using LMIS option 1 for CBDs, estimated dispensed-to-user data. At a minimum, the following are the most basic recommended calculations for resupply: • When using *estimated* CBD dispensed-to-user data: o Calculate the difference between total CBD stock quantity after the end of the previous delivery top-up (period beginning balance) and subtract what the CBD agent has on hand at the next delivery to get the estimated quantity dispensed. o **(Estimated quantity dispensed *multiplied by* Maximum level) *minus* CBD agent stock on hand = Resupply quantity** *or* • When using actual CBD dispensed to user data: o **(Quantity dispensed by CBD *multiplied by* Maximum level) *minus* CBD agent stock on land = Resupply quantity** **These basic calculations require that a maximum level (in basic logistics terms, expressed in months of stock) has been established. Maximum level is the maximum months of stock that you would want a CBD agent to have at any one time. By multiplying the total quantity dispensed by a CBD agent over the previous resupply period by the maximum level, you translate months of stock into a maximum resupply quantity. You must subtract from that figure the amount of stock that the CBD agent currently has so as not to overstock the CBD agent. In addition, any major losses or adjustments that occur (borrowing or lending stock to other CBD agents) must also be considered.* *For example, if delivery teams deliver once per month, the program's maximum level could be two months of stock. If delivery teams deliver once every two months, the maximum level may be anywhere from two-and-one-half to four months of stock. For more information on how to establish a maximum level, please reference the "Maximum–Minimum Inventory Control" chapter in the* USAID | DELIVER PROJECT Logistics Handbook *(2009).*
Organizational Capacity	Logistics management training is primarily only required of the delivery team members because the logistics management skills required of the CBD agents are low, especially with regard to recordkeeping. If implemented correctly, this model allows for solid, reliable resupply times as well as opportunities for individual supervision and on-the-job training, depending on the time permitted at each CBD agent resupply point.

Factor	Model 3: Delivery Top-Up System
Advantages	• The majority of logistics responsibilities fall on the delivery teams, thus freeing up CBD agents to focus more on clients and product distribution. • Resupply quantities are tailored to each CBD agents' client base (i.e., what was dispensed to clients); therefore, there is less possibility of product wastage or under- or overstocking. • Deliveries can be combined with supervision and other monitoring depending on whether CBD program managers or supervisors participate in the deliveries.
Disadvantages	• Depending on the number of CBD agents per delivery team, delivery teams may be on delivery runs somewhat constantly (e.g., if resupply is monthly). • If delivery runs are less frequent (e.g., quarterly), the quantities of products that the CBD agents would be required to hold start increasing and thus increasing storage space need and so forth. • Maintenance expenses, fuel costs, and other travel costs are incurred for the delivery team and trucks or other vehicles.

SAMPLE DELIVERY TEAM FORMS FOR THE DELIVERY TOP-UP SYSTEM

In the Delivery Top-Up System, a delivery team (or possibly only a CBD supervisor) completes all of the logistics forms and calculations on behalf of the CBD agent. Depending on how many CBD agents a delivery team will visit in one "delivery run," the team must do some preparation prior to the run in terms of determining how much stock to take. The team must be able to top up all CBD agents that it will visit in that particular run. The sample forms that follow are *based on* the Ministry of Health and Child Welfare[1] Delivery Team Topping Up program in Zimbabwe. These forms include the following:

- ***Delivery Team Letter of Request:*** A request for all of the products to be delivered; quantities are based on what was distributed in the last delivery run multiplied by a certain percentage increase (1.25, 1.35, 1.50, etc.).
- ***Truck Stockcard:*** This stockcard allows the delivery team to keep track of what it issues at each resupply to CBD agents.
- ***Delivery/Receipt Voucher:*** This form serves as a resupply calculation worksheet, delivery report, and receipt voucher for the delivery team. The resupply quantity is based on specific logistics system design issues related to how average monthly consumption is calculated and what the maximum level of stock is. Although those specifics depend on each system, the column headings and principles of the form will remain. It is also possibly to automate this form by using an electronic form with formulas programmed into it; therefore, the delivery team has fewer calculations to complete. However, rugged laptops would be a necessary added expense for an automated version of the Delivery/Receipt Voucher.

[1] Supported by the USAID | DELIVER PROJECT.

CBD DELIVERY TOP-UP SYSTEM
DELIVERY TEAM LETTER OF REQUEST

Name of person making request:
Date request submitted:
Province to be delivered to:
Date of next delivery round:
Expected date of loading:
Team leader:
Truck driver:

	A	B	C	D
	Commodity	**Total qty delivered in last delivery round**	**Expected qty to be delivered in next round**	**Quantity approved**
			Col B * 1.XX	
1.	Male condoms			
2.	Oral contraceptives			
3.	Uniject			
4.	Sharps box			
5.	Alu 1x4 blisters			
6.	Alu 1x6 blisters			

Supervisor approval

Signature:	Date:

CBD DELIVERY TOP-UP SYSTEM
Truck Stockcard

Truck Registration No. _____

Item: _____

Date	Received From/ Issued To	Qty Received	Qty Issued	Losses	Balance

CBD DELIVERY TOP-UP SYSTEM
Delivery/Receipt Voucher

CBD/Resupply Location: _____ **CBD Name:** _____

(A) Product	(B) Ending Balance Last Delivery	(C) Total Stock on Hand (Physical Count)	(D) Used Since Last Delivery (B-C)	(E) Calendar Days Since Last Delivery	(F) Days Stocked Out	(G) Average Monthly Cons. (D/(E-F)) x30	(H) Maximum Stock Quantity (G x # months)	(J) Quantity Required (H-C)	(K) Excess Stock Removed	(L) Stock Delivered	(M) Ending Balance (C-K+L)	(O) Remarks
Male condoms												
Oral contraceptives												
Uniject												
Sharps Box												
AL 1X4 blisters												
AL 1x6 blisters												

Delivery Team Leader Signature: _____ **CBD Signature:** _____

Date: _____ **Date:** _____

Top copy to Central Level; Middle copy to Delivery Team Leader; Bottom copy to CBD

Model 4: Meet-Up and Resupply System

Factor	Model 4: Meet-Up and Resupply System
Description	The Meet-Up and Resupply model is one of the most common among CBD programs. In this model, CBD agents meet (usually at the resupply point or health facility) on a set day (first Tuesday of each month, first Monday of every other month, etc.). At these meetings, CBD agents meet with supervisors, usually receive some kind of training or program update, and are then resupplied. Information on what was issued to or dispensed by CBD agents is available for reporting up the system.
Number of Products	A large number of products is possible (+/- 20 products) given that each CBD agent may carry a different set of products (from a set list of commodities) as well as different quantities depending on his or her client base. A predetermined set of products is usually available to CBD agents from the resupply point, but this system allows for that product list to grow or lessen depending on community needs.
Storage	CBD agents will need a storage receptacle at home (box, bin, cupboard, etc.) as well as something to transport resupply quantities. Depending on the number of commodities distributed and frequency of resupply, storage space will vary. The greater the quantity of products and the less frequent the resupply visits, the larger the amount of storage space required.
Distribution	For CBD agents: • The CBD agent picks up all supplies on the meet-up day. All reporting, resupply calculations, and resupplying of commodities happen in one day. • Transport or travel for the CBD agent would be required only once in a set period of time. However, the number and quantity of different products needed to carry back to CBD agents' place of service could be cumbersome. In some systems, CBD agents could store excess supplies at the health facility and go back for the remaining portion at a later date. For resupply points: • The set date to resupply CBD agents allows the resupply point to organize and prepare for a particular day (i.e., prepare training materials, commodities, reporting forms, etc.) • No distribution directly to CBD agents is required.

Factor	Model 4: Meet-Up and Resupply System
LMIS	Varieties of options exist for an LMIS for the Meet-Up and Resupply model. From simplest to more difficult, they are as follows: • ***Most basic:*** Only the resupply point collects logistics data; the CBD agent conducts a physical count and notes the quantity of each product remaining at end of period (just before the meeting). The resupply point must record total stock that the CBD agent left the resupply point with after the last meeting (the beginning balance). Then, on the basis of what the CBD agent has left at the next meet-up, the resupply point calculates an "estimated dispensed" quantity and a resupply quantity. o For example: Estimated dispensed = CBD beginning balance *minus* CBD stock on hand • ***Fairly basic:*** The CBD agent tracks quantities of products dispensed with a tick sheet. The resupply point reviews the tick sheet, notes how much was dispensed, and resupplies depending on the quantity dispensed and CBD agent stock on hand. The resupply point will need to track issues to each CBD agent to crosscheck accuracy. • ***Basic:*** The CBD agent uses a basic ledger that tracks the beginning balance, ending balance, and calculated dispensed (i.e., Calculated dispensed = Beginning balance minus Ending balance). Resupply point calculates resupply quantity on the basis of the calculated dispensed. *Sample forms for this model are listed later in this section*. • ***Less basic:*** The CBD agent completes a dispensing register that feeds into a ledger that tracks the beginning balance, quantity dispensed, ending balance, quantity required, quantity received and possibly quantity supplied, and ending balance. The resupply point can calculate the resupply quantity required, quantity supplied, and ending balance.
Resupply Decision Point	Given that in the Meet-Up and Resupply model supplies are replenished at regularly scheduled meetings, the CBD agent does not have to decide whether to seek out regular resupply. The only decisions to be made are how to get to the meeting and how to transport supplies back. If a CBD agent is very low on supplies, he or she will need to decide whether an emergency request for supplies is needed.

Factor	Model 4: Meet-Up and Resupply System
Basis for Resupply	There is no set or predetermined resupply quantity. The resupply quantity is based either on what the CBD agent dispensed or on estimated dispensed-to-user data (calculated—most basic and basic option). At a minimum, the following are the most basic recommended calculations* for resupply: • When using *estimated* CBD dispensed to user data: o Calculate the difference between total CBD stock quantity after the previous meet-up (beginning balance for next period) and subtract what the CBD agent has on hand at the meet-up to get the estimated quantity dispensed. o **(Estimated quantity dispensed *multiplied by* Maximum level) *minus* CBD agent stock on hand = Resupply quantity** *or* • When using actual CBD dispensed-to-user data: o **(Quantity dispensed by CBD *multiplied by* Maximum level) *minus* CBD agent stock on hand = Resupply quantity** ** These basic calculations require that a maximum level (in basic logistics terms, expressed in months of stock) has been established. Maximum level is the maximum months of stock that you would want a CBD agent to have at any one time. By multiplying the total quantity dispensed by a CBD agent over the previous resupply period by the maximum level, you translate months of stock into a maximum resupply quantity. You must subtract from that figure the amount of stock that the CBD agent currently has so as not to overstock the CBD agent. In addition, any major losses or adjustments that occur (borrowing or lending stock to other CBD agents) must also be considered.* *For example, if CBD agents meet once per month, the program's maximum level could be two months of stock. If meet-ups happen once every two months, the maximum level may be anywhere from two-and-one-half to four months of stock. For more information on how to establish a maximum level, please reference the "Maximum–Minimum Inventory Control" chapter in the* USAID | DELIVER PROJECT Logistics Handbook *(2009).*
Organizational Capacity	Depending on the LMIS selected for the system, the organizational capacity needed at both the CBD level and the resupply point varies. At a minimum, staff members at resupply points are the key players in the system. Not only must they be able to provide technical training and on-the-job training to their CBD agents on program changes, they also must keep their supplies in stock to be able to replenish the CBD agents who attend the Meet-Up and Resupply meetings. The less basic the LMIS, the more information that a CBD agent must collect, thus increasing the possibility for errors.

Factor	Model 4: Meet-Up and Resupply System
Advantages	• The Meet-Up and Resupply model's primary advantage is that it makes appropriate use of already-scheduled monthly meet-ups required by most CBD programs (for ongoing training, salary or stipend disbursements, etc.). • Meetings can be used to provide refresher trainings to CBD agents on their logistics roles and provide motivation and feedback to encourage them to continue recording important logistics information. • Resupply quantities are tailored to each CBD worker's client base (i.e., what was dispensed to clients); therefore, there is less possibility of product wastage or under- or overstocking.
Disadvantages	• Depending on the number of CBD agents per resupply point and number of meetings in a set period, meetings may be long and therefore take CBD agents and supervisors away from their service delivery roles. • CBD agents must find transport to get to the meeting. • If meet-ups are less frequent (e.g., quarterly), the quantities of products that the CBD agents and resupply points would be required to hold are greater, thus increasing storage space needs. Moreover, CBD agents will require a suitable vehicle to transport resupplies as they may not be able to carry them, etc. • Some logistics training is required for each level of the system, including the CBD agent level.

SAMPLE CBD AND RESUPPLY POINT FORMS FOR THE MEET-UP AND RESUPPLY SYSTEM

As described in the LMIS section in the "Meet-Up and Resupply" model table, the "basic" LMIS model includes a basic stock report that a CBD agent would need to complete. This form tracks the beginning balance that a CBD agent or resupply point would fill in after a Meet-Up and Resupply visit. Then, just before the next meet-up, the CBD agent would physically count and record all the stock that she or he has remaining. The resupply point would then calculate the remaining portion of the form dealing with estimated quantity dispensed, maximum quantity, and resupply quantity. At each meet-up the CBD agent will work with two copies of this basic stock report—one that was started at the previous visit to record the ending supply for that period which the resupply point will finish completing the bottom portion, and one to be used for the new period and record the starting balance.

CBD Stock Report & Resupply Form

CBD Name: _____

Reporting Period _____

	Product A	*Product B*	*Product C*	*Product D*	*Product E*	*Product F*
A. Beginning Balance *(recorded after previous resupply)*						
B. Ending Balance *(based on physical count)*						
COMPLETED BY RESUPPLY POINT						
C. Total Estimated Dispensed [C = (A - B)]						
D. Maximum Quantity [D = C x Max Months of Stock]						
E. Resupply Quantity [E = (D - C)]						

CBD Printed Name: _____

CBD Signature: _____

Date: _____

Supervisor Printed Name: _____

Supervisor Signature: _____

Date: _____

The resupply point may choose either (a) to report the dispensed data from CBD agents separately so as to track that information separately up the system (for example, in the following form, column F) or (b) to combine CBD agent dispensed data with its own to form a total dispensed from the resupply point. The design of this report depends on how the higher level would like to track and monitor CBD program data.

Resupply Point Commodity Report (CBD Meet-Up & Resupply)

Resupply Point Name: _____ Reporting Period: _____

Resupply Point Location: _____

	A	B	C	D	E	F	G	H	M
Product	Beginning Balance	Quantity Received	Losses	Adjustments	Quantity Dispensed	Quantity Dispensed by CBDs	Ending Balance (Physical Count)	Days Stocked Out	Remarks
Product A									
Product B									
Product C									
Product D									
Product E									
Product F									

Report Completed by (Name): _____ **Approval (Name):**_____

Signature: _____ **Signature:** _____

Date: _____ **Date:** _____

CBD Supply Chain Management Model Summary and Recommendations

The four SCM models presented in this guide are just that—models. All of the information provided in the models is presented with the intent that program managers will read, discuss, and decide what is ultimately best for their CBD programs. The main point to take away from these four models is that a variety of considerations must be taken into account when designing the supply chain portion of a CBD program, from organizational capacity and literacy levels of the CBD workers to ways to track LMIS forms and track and aggregate data.

Various aspects of these models can be combined to fit the specific needs of a program. For example, a kit with staple CBD supplies, such as cotton wool, antiseptic, antibiotics, and thermometers, could be provided to CBD agents quarterly and then more prescriptive commodities could be supplied through a Meet-Up and Resupply model. Documentation on models used by 29 different programs around the globe can be found in *Promising Practices in Supply Chain Management for Community-Based Distribution Programs: Global Survey of CBD Programs* (Hasselberg and Byington 2010).

According to the research, feedback, and logistics knowledge gleaned from health commodity supply chain experts at the USAID | DELIVER PROJECT, the Meet-Up and Resupply model is the most commonly and potentially the most useful model of the four presented in this guide for the following reasons:

- It does not require much data collection on the part of the CBD agents.
- It places the majority of the reporting burden on the resupply point.
- It provides unique learning opportunities and planned supervision time during the meet-ups.
- It has the potential to be the most responsive supply chain design in terms of being able to both track CBD dispensed-to-user data and supply CBD agents with the quantities and types of commodities that their clients need.

The authors designed a hybrid form that CBD agents could use as both a client register and a stock tracking form. In this way, CBD agents can record all of their logistics information in one place instead of having some information in a client register, some information in a ledger book, and other data in reports. This register is very simple, and other columns could be added depending on the services or programs provided by the CBD agent (for example, child health activities may require age and symptoms to also be recorded). Again the CBD agent would need to complete only the beginning balance row and client dispensed data and bring the form to the resupply point during the meet-up; the resupply point could complete rows B through E, depending on the capacity of the CBD agents. Row D “Maximum Quantity” would need to be determined by multiplying a determining maximum level (in months of stock) by either average monthly consumption or at least the previous month’s consumption.

CBD Dispensing Register & Resupply Form

CBD Name: _____

Reporting Period _____

	Products	*Product A*	*Product B*	*Product C*	*Product D*	*Product E*	*Product F*
A. Beginning Balance							
Date	**Client**	**Quantity Dispensed**					
B. Total Dispensed							
C. Total Remaining (A - B)							
D. Maximum Quantity							
E. Resupply Quantity (D - C)							

CBD Printed Name: _____

CBD Signature: _____

Date: _____

Supervisor Printed Name: _____

Supervisor Signature: _____

Date: _____

Implementing a Supply Chain Management System for a CBD Program: Key Steps

In an ideal world, the supply chain system for a CBD program would be designed when the entire health commodity supply chain is designed at a national level. Realizing that many program managers reading this guide already have CBD programs in place, this guide will present eight key steps to implementing a supply chain management system for CBD programs which are already established or just starting.

In addition to the "Questions to Consider" boxes listed earlier in this guide, readers should also look at the questions listed under each step and develop some of their own.

STEP 1: Determine all the health commodities that the CBD agents will distribute.

- What products do CBD agents currently distribute, and are there plans to increase or decrease that product list?
- Are all of these products fully available (financed, procured, delivered) or do stockouts occur?

STEP 2: Assess the functionality of the health commodity supply chain down to the CBD resupply point, starting from the national level.

- Does the distribution (storage and transportation) system function down to the resupply point level?
- Will reverse logistics be needed to dispose of any product waste, such as that waste collected in sharps boxes by CBD agents?

STEP 3: Determine what information must be collected from the CBD agents and whether these data must be reported up the system.

- Does the LMIS need to track CBD dispensed-to-user data, or is it acceptable to combine such data with total dispensed-to-user or total issues from the resupply point?
- What information will the CBD agent have to collect? Is that expectation reasonable?

STEP 4: Assess capacity (literacy and numeracy) levels of the CBD agents and also of staff members and supervisors at the resupply point.

- Do staff members at the resupply points have preexisting stock management knowledge or have they received logistics training?
- Are CBD agents able to complete basic numeracy exercises (addition, subtraction), and do they have a minimum level of literacy for any forms that may need to be completed?

STEP 5: Conduct a design or consensus-building workshop to decide on a supply chain model to implement for the CBD program.

- What partners have a stake in the success of the CBD program, and who from their staff should be included in the workshop?

- How will the workshop be structured and facilitated to ensure maximum participation with consensus at the workshop's closing?

STEP 6: Design the SCM system, including the inventory management system, distribution scheme, waste management and storage practices, LMIS forms, job aid tools, and curriculum to train CBD agents and the resupply point staff in how this new SCM system for the CBD program works.

- What is the current (formal or informal) inventory management and distribution system for products that CBD agents distribute?
- Which SCM models (or combination) seem best suited to your CBD program?

STEP 7: Implement the program initially as a pilot, monitor progress and then make any necessary changes prior to an expanded roll-out.

- Where will this new SCM system for the CBD program be piloted, and who will monitor the initial implementation?
- Who will be responsible for making changes to the system after the pilot?
- What are the timelines for both a pilot and an expanded roll-out?

STEP 8: Routinely monitor SCM functioning and make adjustments as necessary for improvement of the CBD program and system as a whole.

- After an expanded roll-out, who will be responsible for monitoring the CBD SCM system's functioning?
- How will data and success be shared with all stakeholders of the program, from funders to CBD agents?

Conclusion

Functioning supply chains at all levels of the system are critical to ensuring commodity security at the lowest level of the system—which in many programs is a CBD agent. In many contexts, CBD programs connect clients to health services and commodities; therefore, the proper functioning of the supply chain down to the CBD agent level is essential. Supply chain functioning means more than just fulfilling the six rights of commodity security; it is also about moving information up the system to provide data to program managers. Quality data help managers to make important decisions about how CBD programs function and what changes or improvements need to be made to ensure commodity availability. Overall, CBD agents serve as one of the last critical links in the supply chain and provide greater access to health commodities to communities that need them; therefore, health programs must now invest time, funds, and attention to improving supply chains for CBD programs.

This project is supported by the Reproductive Health Supplies Coalition. Its outputs—the Global Survey and this Program Manager's Guide—are intended to fill in a gap in existing resources available on the supply chain management of CBD programs. Although neither of these documents are completely exhaustive of all the supply chain information necessary to design and operate a successful logistics system, they are a first step in a growing body of work and interest in improving product availability at the lowest level of the supply chain. Additional resources may be found in the References and Annex to this guide.

In the same way that CBD programs are customizable and adaptable to specific communities and health programs, supply chains are also intended to be adaptable and to change with system improvements, expansions, and challenges. With this shared strength of adaptability, stronger supply chains hold a great possibility for even more successful community-based distribution programs.

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Annexes

Annex 1: Resources

Supply Chain Management and Logistics Publications:

Country	All
Document Type	Handbook
Reference	Family Planning Logistics Management (FPLM). 2000. *Contraceptive Forecasting Handbook for Family Planning and HIV/AIDS Prevention Programs*. Arlington, Va.: FPLM/John Snow, Inc., for the U.S. Agency for International Development.
Summary	*The Contraceptive Forecasting Handbook for Family Planning and HIV/AIDS Prevention Programs* is designed as a reference book for forecasting commodity needs for family planning and HIV/AIDS prevention programs. Topics include general methodological considerations, data sources and alternative techniques for preparing forecasts of consumption, special considerations in forecasting for new programs and HIV/AIDS prevention programs, methods for validating the forecasts, procedures for calculating quantities of contraceptives required based on the consumption forecast, and methods for monitoring the forecast over time.

Country	All
Document Type	Survey
Reference	Hasselberg, Erin. Julia Byington. 2010. *Supply Chain Models and Considerations for Community-Based Distribution Programs: Global Survey of CBD Programs*. Arlington, Va.: John Snow, Inc., for the Reproductive Health Supplies Coalition.
Summary	The global survey consists of the preliminary research and findings that the JSI team compiled. The team interviewed a total of 29 programs: 19 projects in Sub-Saharan Africa, 5 in Asia, 4 in Latin America and the Caribbean, and 1 global project. These findings were used in this guide to analyze current trends and practices in supply chain management and provide considerations for different supply chain models and functions for community-based distribution programs.

Country	All
Document Type	Tool
Reference	USAID | DELIVER PROJECT, Task Order 1. 2008. *Logistics Indicators Assessment Tool (LIAT)*. Arlington, Va.: USAID | DELIVER PROJECT, Task Order 1.
Summary	The Logistics Indicators Assessment Tool (LIAT), a quantitative data collection instrument developed by USAID | DELIVER PROJECT, is used to conduct a facility-based survey to assess health commodity logistics system performance and commodity availability at health facilities. The LIAT can be used to monitor the performance of certain processes involved in the logistics management of health commodities over time, to evaluate certain outcomes of logistics interventions, to provide ongoing supervision and performance monitoring, and to monitor commodity availability.

Country	All
Document Type	Tool
Reference	USAID | DELIVER PROJECT, Task Order 1. 2009. *Logistics System Assessment Tool (LSAT)*. Arlington, Va.: USAID | DELIVER PROJECT, Task Order 1.
Summary	The Logistics System Assessment Tool (LSAT), one of two data-gathering tools (with the Logistics Indicators Assessment Tool) developed by the DELIVER project, is used to assess a logistics system and the system's environment. The LSAT, a diagnostic and monitoring tool, can be used to complete an annual assessment as an integral part of the work planning process. The information collected using the LSAT is analyzed to identify issues and opportunities and, from those, used to outline further assessment and/or appropriate interventions.

Country	All
Document Type	Handbook
Reference	USAID | DELIVER PROJECT, Task Order 1. 2009. *The Logistics Handbook: A Practical Guide for Supply Chain Managers in Family Planning and Health Programs*. Arlington, Va.: USAID | DELIVER PROJECT.
Summary	The Logistics Handbook includes the major aspects of logistics management with an emphasis on contraceptive supplies. The text should be helpful to managers who work with supplies every day as well as managers who assess and design logistics systems for entire programs. Policymakers may find the text useful in exploring the inputs needed to create an effective logistics system. Key terms and concepts are clearly defined and explained, and the design and implementation of management information systems and inventory control are discussed in detail. Storage and quality control practices are also discussed, and overviews of forecasting and procurement processes are included.

Selected CBD Resources:
Region: Africa

Country	All
Document Type	Report
Reference	Frontiers in Reproductive Health Program (FRONTIERS). 2002. *Best Practices in CBD Programs in sub-Saharan Africa: Lessons Learned from Research and Evaluation*. Washington, D.C.: for the U.S. Agency for International Development.
Summary of CBD Supply Chain Practices	Report from a seminar organized collaboratively by the Population Council's Frontiers in Reproductive Health Program (FRONTIERS), Family Health International (FHI), and Advance Africa and attended by participants of the U.S. Agency for International Development (USAID) and its collaborating agencies (CAs). The one- day event: (1) summarized evidence on the effectiveness, impact, cost, and sustainability of various CBD models; (2) identified best practices in African CBD programs; and (3) described how CBD programs can meet reproductive health needs in sub-Saharan Africa. Key issues reviewed included: effectiveness, cost, and sustainability of various CBD models; (2) identified best practices in African CBD programs; and (3) described how CBD programs can meet reproductive health needs in sub-Saharan Africa. While the document did not focus largely on supply chain practices for CBD programs, the "Maximizing Impact" section states that for commercial CBD "Program managers might look to the commercial sector to address questions on how products reach households, and on whether direct sales is the best way to create a demand for family planning products. Making sure that product is available is crucial to a program's success. Data from Nigeria suggest that CPR is higher when product availability is higher (Aronovich 2002). Managers need a sound logistics system that includes methods of forecasting supply needs, distribution, procurement warehousing, storage, and end-dates for perishable products. Programs should conduct a periodic analysis of logistical systems to ensure reliable delivery of supplies to clients."

Country	All
Document Type	Training Guide
Reference	The Family Planning Service Expansion and Technical Support Project (SEATS). 1994. *Management of Community-Based Family Planning Programmes: Manual for Trainers*. Washington, D.C.: for the U.S. Agency for International Development. The Family Planning Service Expansion and Technical Support Project (SEATS). 1994. *Management of Community-Based Family Planning Programmes: Manual for Trainees*. Washington, D.C.: for the U.S. Agency for International Development.
Summary of CBD Supply Chain Practices	These Trainer and Trainee manuals offer standardized curriculum guidelines for teaching program management skills specific to CBD programs. The material is geared toward mid-level managers of CBD programs (therefore the Trainee is the manager). It is available in French and English and was utilized in the early 1990's in Kenya. Of the 19 sessions, one session focuses specifically on logistics and one also focuses on Management Information System (MIS). The logistics section is two sessions (total 3 hours) and the objectives include: Explain the functioning of an effective logistics system for a CBD program; forecast contraceptive requirements for a CBD program; describe appropriate storage conditions, inventory control, and distribution systems for CBD programs; design implement, and operate effective systems and procedures for monitoring contraceptive use for CBD programs; and discuss strategies for solving transport problems specific to CBD programs. The MIS section is four sessions (6 hours total) and objectives include: understand basic principles of information systems; design a basic integrated information system; utilize data to monitor performance, assess impact, manage operations, and present results to others; and be able

	to identify MIS needs and express these needs to MIS design specialists.

Country	All (based on Madagascar and Uganda)
Document Type	Handbook
Reference	Weil, Benjamin, Kristen Krueger, John Stanback, and Theresa Hatzell, Hoke. (Family Health International). 2008. *Provision of Injectable Contraception Services through Community-Based Distribution*. Research Triangle Park, NC: for the U.S. Agency for International Development.
Summary of CBD Supply Chain Practices	Based on pilot program experiences in Madgascar and Uganda, this handbook outlines nine basic steps for introducing and ultimately maintaining injectable contraceptives into existing family community-based distribution programs. The fifth step "Set up a Logistical System that Ensures a Steady Provision of Supplies" identifies six areas basic principles to follow to make sure that supplies are readily available for the program. Specifically this section recommends linking to health facilities and the existing government supply chain; forecasting adequate quantities of supplies; properly disposing of waste; and ensuring timely reporting by CBD agents. Fourteen appendices supply a plethora of resources ranging from a rapid assessment guide for CBD agents to a CBD agent training curriculum. Appendix 12 of the document also offers an example Contraceptive Stock Control that collects data on products received and used (Microgynon, Lofemenal, Ovrette, condoms, and DMPA).

Country	Ghana
Document Type	Report
Reference	Population Council and Planned Parenthood Association of Ghana. 2000. *An Assessment of the Community-Based Distribution Programs in Ghana*. Washington, D.C.: for the U.S. Agency for International Development.
Summary of CBD Supply Chain Practices	This publication has extensive information on the mainly NGO-supported CBD programs in Ghana, and it includes much more information on the PPAG program than the phone interview with PPAG staff yielded. Major findings included finding that PPAG reporting systems were not being followed and subsequently as a result of the study PPAG revised its reporting system for CBD agents to that which was described by PPAG in the phone interview. In the section "NGO CBD programs in Ghana" there is a "Record Keeping" section which states the following: "All programs expect their agents to keep monthly records of their activities, including numbers of new, resupply, and referral clients, as well as the number of contraceptive and other health care commodities dispensed. The records kept vary from program to program and is determined by the range of services the agents provide. ADRA has trained its illiterate agents to use pictorial methods for record keeping. PPAG agents also keep records of all contacts made for educational or information giving purposes (i.e. with individuals, home visits, rallies, and group meetings, drama and video contacts). For all programs, supervisors use the agents' records to compile monthly, quarterly and annual performance reports for their area of coverage. These reports are supposed to be submitted to headquarters, usually via district or regional channels. This survey found, however, that record keeping in all programs is extremely poor, and whatever records are collected are often not reported through the program structure. There is no feedback to supervisors and agents, and the quality of the reports at headquarters level is not sufficient to inform senior management and donors about program performance. No policy guidelines or mechanisms exist to ensure that NGO programs submit their CBD records to the National Population Council. Even at the district, regional and national levels, NGOs are not required to forward their output to the respective MOH officials."

Country	Ghana
Document Type	Report
Reference	PRIME. 1996. *Technical Report 5: Assessment of Community-Based Distribution in the Republic of Ghana*. Chapel Hill, NC: for the U.S. Agency for International Development.
Summary of CBD Supply Chain Practices	In the 1990's Ghana had five very active CBD programs. Each program sourced its own contraceptive products, had different brands of products, and priced their products at various levels. These five programs also had their own individual distribution systems. The Republic of Ghana was hoping to develop a national strategy for CBD and commercial distribution of contraceptives. INTRAH/PRIME, conducted a national assessment of existing CBD programs with the Ministry of Health. In terms of logistics and supply chain management the assessment recommended the following: 1. As much as possible, organizations receiving donated products should ensure continuity in the types and brands of contraceptives distributed. 2. The Ministry of Health should monitor and coordinate the introduction of the new brands of contraceptives in the country to avoid uncontrolled proliferation of brands in the field. 3. Organizations should harmonize their pricing policies to limit/reduce differences in price for similar products as much as possible, in order to allow clients to make a choice based on their preference, rather than on financial considerations.

Country	Guinea
Document Type	Report
Reference	Pour Renforcer les Interventions en Santé Reproductive et MST/SIDA (PRISM). 2007. *Guinea PRISM Final Report 2003 - 2007*. Cambridge, MA; for the U.S. Agency for International Development.
Summary of CBD Supply Chain Practices	Management Sciences of Health Project Summary report on the Ministry of Health and MSH's efforts through PRISM I & II(1997-2002; 2003-2007 respectively) to build fully functional service delivery points at all levels, including at the community level. In 2005 and 2006, the project supported direct distribution of family planning commodities to CBD agents which in turn minimized stock outs and increased client confidence in the system. The project created incentives for CBD agents to dispense products—CBD agents received 30 percent of value of what they sold which was deposited into a bank account to fund community development activities. At the end of the project, almost 24 percent of the value of the contraceptive products sold at the community level went back to the communities through this performance-based mechanism. This unique model for involving CBD agents in other community activities did increase contraceptive access as well as economic empowerment for the community.

Country	Malawi
Document Type	Evaluation Report
Reference	Support to AIDS and Family Health Project (STAFH). 1996. *Quality of Family Planning: Community-based Distribution Services in Malawi*. Lilongwe, Malawi: for the U.S. Agency for International Development.
Summary of CBD Supply Chain Practices	This comprehensive report documents the selection, functioning, and quality of CBD services in Malawi in order to evaluate their strengths and weaknesses. Includes Swahili language CBD agent client contraceptive tally sheet that uses tick marks, as well as client card and referral letter in the annexes (pp 120-2). The study found that only 50% of CBD agents perceived they had sufficient supply. Contraceptives were supplied on supervisory visits to CBD agents as well as on visits to mobile clinics, project offices, and referral clinics. A total of 16.5% reported difficulties in maintaining supply due to the following reasons: supervisor did not bring enough supplies on visits; supervisors did not make monthly visits due to transportation difficulties; supervisors bought supplies only when requested; a lag-time between placing an order and filling it; and travel/distance challenges for the CBD agent who had to walk to referral clinic to obtain supplies when he/she missed the supervisor's visit. The evaluation found no relationship between a specific type of distribution system and supply availability. In each project where CBD agents were understocked, different distribution systems had been used. Giving a month's supply of medicine at a time might be implicated in high discontinuation rates (pg. 27). CBD agents were asked to record client information in register books but most records incomplete although most recorded they had no problem filling out the books. Many CBD agents were also found to make errors in the tally sheets. Although managers reported improvements under close supervision, there is evidence that they were not aware of the errors. The Annex of this evaluation report provides examples of tally sheets and training guides.

Region: Asia

Country	India
Document Type	Report
Reference	Paxman, John M. et. al. 2005. *The India Local Initiatives Program: A Model for Expanding Reproductive and Child Health Services.* Studies in Family Planning. 36[3]: 203-220.
Summary of CBD Supply Chain Practices	This journal article, authored by a combination of MSH staff, documents how a model adapted from Indonesia and Bangladesh shaped the India Local Initiatives Program. The program enrolled 1,850 Community Health Volunteers (CHVs) who delivered health information and services (including contraception) to their neighbors. The program established a simplified, management information system that tracked services provided and health status of clients. The CHVs utilized a map of their community and utilized simple symbols and color coding for each of the components of the program to log the health status or services rendered onto the map. This pictorial reproductive and child health map was used to record reproductive and child health status of each home, and allowed volunteers to keep track of trends and give verbal reports. Program staff then used those maps and verbal reports to complete paper-based and electronic registers to track progress. Program staff used maps to monitor performance and identify necessary modifications. Assessments found that information on health status of individuals were correctly reported 96% of time. No systemic under- or over-reporting was found. Data from maps were often used for decision making.

Country	Philippines
Document Type	Curriculum
Reference	Integrated Population and Coastal Resource Management Initiative (IPOPCORM). 2004. *Training Curriculum for Community-Based Distributors*. Manila, Philippines: for PATH Foundation Philippines, Inc.
Summary of CBD Supply Chain Practices	The IPOPCORM project aimed to improve reproductive health outcomes among people living in coastal communities in the Philippines. The curriculum is designed to guide Community Health Outreach Workers (CHOWs) in training selected CBD agents in reproductive health information, education, communication, and products. The one day training covers five main topics including CBD Program structure and Management information systems. The IPOPCORM program had varying scenarios where CBD agents either distributed product for free or sold products to clients on a sliding scale. The management information section instructs CBD agents on how to complete the CBD Outlet Reporting Form (products delivered, distributed, end balance, and funds collected) and CBD Record of FP commodities sold/distributed (more a client tracking sheet with some commodity data).

Region: Latin American and the Caribbean

Country	Guatemala
Document Type	Report
Reference	Management Sciences for Health. *Ensuring Supply, Cutting Costs, Raising Quality: Health Volunteers apply a Business Model to Contraceptive Distribution*. Available at http://www.msh.org/projects/mandl/6.8.html (accessed on March 15, 2010).
Summary of CBD Supply Chain Practices	The APROFAM project (IPPF affiliate) found success and 70% self financing of its CBD project by using Palm Pilots to manage inventory. Volunteer CBD agents (who are visited by local residents instead of visiting homes themselves) are visited by APROFAM staff who upload sales data to the clinic, thus, automatically generating resupply. Information is also sent to a management system where there is a continuous program of monitoring and evaluation. These technological innovations were patterned after a private sector program designed by Pepsi (PepsiCo, Inc.) in Guatemala.

Region: Global

Country	All
Document Type	Report
Reference	Burket, Mary K. 2006. *Improving Reproductive Health through Community-Based Services: 25 Years of Pathfinder International Experience*. Watertown, MA: Pathfinder International.
Summary of CBD Supply Chain Practices	The report highlights major lessons learned in Pathfinder's extensive history with CBD programs globally. The report does not provide any lessons learned on commodity or information management that would relate to the supply chain. There are a few lessons learned RE: public-private partnerships and unique distribution points that have implications for the supply chain but those inferences would have to be made by the reader.

Country	All
Document Type	Case Study
Reference	Wolff, James et. al. 1990. *Beyond the Clinic Walls: Case Studies in Community - Based Distributions*. West Hartford, CT: Management Sciences for Health.
Summary of CBD Supply Chain Practices	The case studies in this publication may serve as a guide to program managers who are designing CBD programs or also as a training tool for small groups/organizations working in CBD program management. Part III of the document focuses on "Information for Effective Management" and presents three different case studies that identify various challenges in many CBD programs. The fourth case study "Dealing with Data" contains an example organizational chart (pg. 44) as well as sample forms for the CBD agents. Additional sample forms such as client referral cards and tick sheets can be found in the annexes. The document summarizes that information management is critical for any CBD program but must be designed with the CBD volunteer in mind as well as who will be using what information. Author emphasizes that the physical design of forms are important, must be clear, uncluttered and easy to use to increase adherence of report and record-keeping. Forms should be designed so data is entered only once, and color coding and graphics help make forms easy to use. Pictures and simple counts help for non-literate CBD agents.

Country	All
Document Type	Report
Reference	Prata, Ndola et. al. 2005. *Revisiting community-based distribution programs: are they still needed?* Contraception 72: 402– 407.
Summary of CBD Supply Chain Practices	This journal article reviewed over 30 years of findings and experiences of CBD programs across the world to determine whether this type of service had a significant impact and was still needed in relation to other family planning health delivery services. The article in part analyzed what factors would make CBD programs more cost-effective and found that one way to increase cost-effectiveness and possibly strengthen the logistics system is by optimizing supervisory visits to local posts. By limiting supervisory visits to quarterly visits, travel costs decrease significantly and supervisors are able to oversee more posts, thus, decreasing the number of supervisors needed. Reducing restocking visits from monthly to quarterly is more cost-effective, regardless of front-end costs of providing each post with adequate supply of contraceptives. It should be noted, however, that decreased supervisory visits may compromise the quality of care provided by agents and/or agent motivation, and as such, it may be most effective to maximize supervisory visits as an opportunity for on-the-job training.

Country	All
Document Type	Executive Summary
Reference	Global Health Workforce Alliance. 2010. *Global Experience of Community Health Workers for Delivery of Health Related Millennium Development Goals: A Systematic Review, Country Case Studies, and Recommendations for Integration into National Health Systems*. Montreux.
Summary of CBD Supply Chain Practices	On April 29-30, 2010 a Global Consultation on Community Health Workers (CHW) was held to discuss recent findings of a systematic review of CHW programs. The review was conducted with the intention of identifying CHW programs that had/have a positive impact on the Millennium Development Goals (MDGs) focusing on human resource indicators and health program impact. Human resource indicators specifically focused on selection, training, supervision, in-service training, performance, deployment patterns, standards for evaluation and certification, CHW classification, and impact assessment. Health impact indicators focused on MCH, HIV/AIDS, TB, Malaria, mental health and non communicable diseases. The three objectives of the consultation were to: i) identify best practices and lesson learnt, ii) identify implementation challenges, connect knowledge and programs; and iii) identify strategies for disseminating recommendations and information sharing. The consultation reviewed case studies conducted in eight countries (Mozambique, Uganda, Ethiopia, Bangladesh, Pakistan, Thailand, Brazil and Haiti). The summary describes key findings, strategic messages, identifies areas of further study needed, and provides further recommendations on how the Global Health Workforce Alliance can use the study findings. A full report on the consultation was not available at the time of this research.

Country	All
Document Type	Tool
Reference	USAID | Health Care Improvement Project. 2009. *Rapid Assessment of Community Health Worker Programs in USAID Priority MCH Countries Draft Tool for Field Testing*. Bethesda, MD: USAID Health Care Improvement Project
Summary of CBD Supply Chain Practices	This tool is intended for USAID missions, implementing partners, ministries or other organizations to assess functionality as well as provide action plans and promising practices to improve CHW programs. It uses the AIM approach, which is based on organizational best practices. The tool assesses functionality for 15 programmatic components that are generally part of CHW programs, some of which include SCM, namely: equipment and supplies, supervision, information management, community health facility linkages and community ownership (in development). At the time of this research the tool was under Beta testing and in draft form. It can be viewed at the following website: http://www.hciproject.org/node/1224

Country	All
Document Type	Training Guide
Reference	Partners in Health. 2007. *Accompagnateur Training Guide: Facilitator's Manual and Accompagnateur Handbook*. (English-Pilot Testing Edition). Boston, MA. http://model.pih.org/accompagnateurs_curriculum
Summary of CBD	PIH describes their curriculum as "an easy-to-follow fifteen unit training guide includes both a

Supply Chain Practices	facilitator's manual and participant handbook. This pilot curriculum for accompagnateurs comprises 15 units, with a focus on treatment and support for patients with HIV/AIDS and tuberculosis. The training is tailored to be given over seven consecutive or separate days, after participants have received their initial orientation by PIH clinical staff. The curriculum includes parallel materials for use by trainers and participants, as well as visual aids for use with each unit. The Accompagnateur Training Guide for facilitators provides detailed steps on how to train accompagnateurs in the skills and knowledge needed to carry out their work. The Accompagnateurs Handbook is designed to be used by accompagnateurs both as a manual during the training and as a reference when they are working with patients in the community. Visual aids are also provided in two alternative forms – flipcharts and slides. The curriculum covers the following topics:* Treatment, prevention, side effects, and risk factors for HIV, TB, sexually transmitted infections (STIs), and other infectious diseases; * The roles and responsibilities of accompagnateurs; * Challenges faced by accompagnateurs and ways of dealing with them; * The impact of HIV/AIDS on women; * Recognizing and reducing stigma and discrimination; * Effective communication and psychosocial support. Based upon adult learning principles, the curriculum incorporates a variety of participatory approaches to teaching and learning that build upon the existing knowledge, skills and experience of the participants. PIH is currently pilot testing this curriculum with four partner programs in Haiti, Lesotho, Malawi, and Rwanda." While the curriculum focuses only minimally on supply chain management, Unit 13 does review how to complete the "Accompagnateur Form" which is a dispensing register as well as the importance of storing medicines properly and forming a strong relationship with the clinical team. The overall framework, design, and implementation of this training are comprehensive yet simple to follow and are a good model to be shared and expanded upon by any program.

Website links*:*

Community-based Family Planning Toolkit- Knowledge 4 Health Project, Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs

http://www.k4health.org/toolkits/communitybasedfp

USAID | DELIVER PROJECT, John Snow Incorporated

http://www.deliver.jsi.com

Strengthening Pharmaceutical Systems Program, Management Sciences for Health

http://www.msh.org/projects/sps

Flex Fund, USAID

http://www.flexfund.org

Community Health Worker Program Improvement and Assessment Matrix (CHW AIM), USAID I Healthcare Improvement Project

http://www.hciproject.org/node/1224

Annex 2: Interview Questionnaire

Annex 2 includes the interview questionnaire that was used to guide the 29 interviews with different organizations regarding their CBD programs. Their responses informed the development of this program guide.

Best Practices in SCM for CBDs	
INTRODUCTION	
Project Summary Blurb	
Contact Name, Title, Org	
Email:	
Phone:	
CBD PROJECT/PROGRAM INFORMATION	
Name of Project:	
Dates of Project Operation:	
Country/Region of Operation:	
What was the impetus for involving CBD's in the program? - Were there any major challenges to incorporating CBDs into the program?	
Brief description of organizational structure of CBD program -including approx # of CBDs; catchment area, etc -selection criteria -do the CBDs meet together as a group? (how often?) -are the CBDs paid? -do they have specific targets? -who manages the CBD program? (MOH? A Program within the MOH)	
What is the general profile of a CBD in your program? (Sex, age, literacy level, married/single, etc.)	
Do the CBDs dispense/distribute/use health commodities (pills, condoms, test kits, bed nets, etc.)? If yes, which ones? If yes, are these products free or do they collect fees?	*If answer is no, ask why they do not and then skip to end of questionnaire.*

STORAGE AND DISTRIBUTION	
How do the CBDs carry their supplies (while working)? Is this mechanism provided to CBDs by the program?	
How/where do CBDs store their products while not "working"?	
How often do CBDs distribute products to clients?	
How do CBDs travel to their clients?	
Where do CBDs receive their supplies/commodities? -Are there alternative sources for them to resupply? -How often do they get re-supplied?	
PRODUCT AVAILABILITY & ACCESS	
Is access to products/commodities for clients better through CBDs or through health facilities?	
Have there been any challenges with expiries, damaged or lost/stolen products with the CBDs?	
What are the reported reasons for stockouts at CBD level (e.g., inappropriate resupply by higher level, inappropriate ordering by CHW, poor forecasting, and increased demand)?	
Do CBDs have incentives to take ownership of supply and ensure they are never stocked out (e.g., options such as charging a fee or carrying other items that they know mothers/kids will want/need that they can charge for)?	
INVENTORY CONTROL	
Is there a maximum stock quantity that a CBD can hold? (either in quantities, bags, kits, or *months of stock (MOS)*)?	
Is there a minimum stock quantity a CBD should always have? (either in quantities, bags, kits, or MOS)	
Is there an Emergency Resupply point that indicates to the CBD that she should immediately seek resupply?	
How does the CBD know when she must go for resupply?	
How does the CBD know if she is at/over her Maximum stock level, at/under her minimum stock level, or at/under her Emergency Order Point?	
Does the CBD know how to or need to calculate *average monthly consumption (AMC)* or Max/MIN MOS? How does she calculate it?	
Does the CBD need to submit/report to be resupplied? How is the resupply quantity calculated? (determine if this is a push or pull system?)	

LMIS	
Does the CBD collect any of the essential logistics data items? (dispensed-to-user/usage, stock on hand, losses/adjustments?) If so, how?	
Does the CBD use any forms to request resupply/order? What do these forms look like (pre-printed or handwritten?, booklet, notepad, loose leaf? Carbon copies?)? If so what are they and is it possible to have a copy of those forms?	
What happens to any information that the CBDs supply to their resupply point? Do the health facilities record the information just by writing it down/do they physically collect a copy of the form? How is this information sent UP the system?	
How/where do the CBDs get additional copies of the forms/registers?	
Do you believe that collecting and using logistics data has improved/could improve product availability and the CBDs' ability to manage the products?	
WASTE MANAGEMENT	
How do CBDs dispose of expired or damaged products?	
Do CBDs pick up damaged or expired products from clients?	
Is the CBD program waste management guideline in line with any official MOH or national policies?	
ORGANIZATIONAL CAPACITY & HUMAN RESOURCES	
How are candidates to be CBDs selected?	
What does the training program for CBDs include?	
Do CBDs carry job aids such as pregnancy checklist, visual aids for clients, etc? If yes, what are they? Are they more visual/pictorial or written instructions? Do you have a copy that I could see?	
What other training materials or resources do the CBDs have if any?	
Do CBDs receive supervision? How frequently & by whom? Do supervision visits improve performance?	
What types of capacity-building techniques work the best for CBDs? (on the job; stand-up trainings; CD; etc.)	

TOOLS & TECHNOLOGY for SCM for CBDs	
Do you know of /Can you recommend any tools/resources that can be used for improving supply chain management skills for CBDs?	
Are there technical innovations that can improve the management and transmission of logistics information (cell phones, PDAs, etc.)?	
BIGGEST CHALLENGES IN Supply Chain Management FOR CBDs	
BIGGEST OVERALL CHALLENGES FOR CBD PROGRAM	
BIGGEST SUCCESS/BENEFIT OF CBD PROGRAM	
RECOMMENDATIONS OF OTHER ORGANIZATIONS/PEOPLE TO SPEAK WITH ABOUT SCM FOR CBDs?	