USAID
FROM THE AMERICAN PEOPLE

DELIVER: FINAL PROJECT REPORT

JULY 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

DELIVER: FINAL PROJECT REPORT

DELIVER

DELIVER, a six-year worldwide technical assistance support contract, is funded by the U.S. Agency for International Development (USAID).

Implemented by John Snow, Inc. (JSI) (contract no. HRN-C-00-00-00010-00) and subcontractors (Manoff Group, Program for Appropriate Technology in Health [PATH], and Crown Agents Consultancy, Inc.), DELIVER strengthens the supply chains of health and family planning programs in developing countries to ensure the availability of critical health products for customers. DELIVER also provides technical management of USAID's central contraceptive management information system.

Recommended Citation

DELIVER. 2007. *DELIVER: Final Project Report.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Abstract

USAID funded the DELIVER project from 2000 through 2006. Implemented by John Snow Inc., the overarching aim of the project was to improve commodity security for health products in the public sector in developing countries. The project worked more with contraceptives than other product categories, but essential drugs, and drugs and diagnostic supplies also received significant attention. Based on needs that USAID had identified, the project carried out work under the following headings: logistics improvement; human capacity development; resource mobilization for commodity security; adopting advances in logistics technology; estimation of USAID's contraceptive needs; and operating USAID's contraceptive procurement database.

DELIVER
John Snow, Inc.
1616 Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
Email: deliver_project@jsi.com
Internet: deliver.jsi.com

CONTENTS

Figures

Tables

ACRONYMS

ACAME	*Association Africaine des Centrales d'Achats de Médicaments Essentiels*
ACS	Authorization for Contraceptive Shipment
AIDS	acquired immunodeficiency syndrome
AL	artemether-lumefantrine
ART	antiretroviral therapy
ARV	antiretrovirals
ATLAS	Assessment Tool for Laboratory Services [created by the DELIVER project]
ATM	automated teller machine
AutoCAD	Automated Computer Aided Design (software)
CA	cooperating agency
CC	Country Coordinators
CCMIS	Contraceptive Commodities Management Information System
CCP	Central Contraceptive Procurement (USAID)
CERPOD	*Centre d'Etude et de Recherche sur la Population pour le Development*
CIB	coordinated informed buying
CIDA	Canadian International Development Agency
COTS	commercial off-the-shelf software
CPR	contraceptive prevalence rate
CPT	Contraceptive Procurement Table
CS	contraceptive security
CSI	Contraceptive Security Index
CSL	Commodities Security and Logistics Division (USAID)
CTL	Country Team Leader
DFID	Department for International Development (UK)
DGFP	Directorate of Family Planning
DHS	Demographic Health Surveys
DR	Democratic Republic of Congo
DRP	Distribution Resource Planning
DTTU	Delivery Truck Topping Up
ECOWAS	Economic Community of West African States
EML	essential medicines list
ERP	enterprise resource planning
FPLM	Family Planning Logistics Management (project)
FY	fiscal year
GFATM	Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria
GTZ	*Deutsche Gesellschaft für Technische Zusammenarbeit* [German international development agency]
HIV	human immunodeficiency virus
HR	human resources
HSR	health sector reform
ICC/CS	inter-agency coordinating committee for contraceptive security
IPPF	International Planned Parenthood Federation
IWG	Interim Working Group on Reproductive Health Commodity Security
JCRC	Joint Clinical Research Centre
JSI	John Snow Inc.

KfW	*Kreditanstalt für Wiederaufbau* (German funding agency for international development)
LAC	Latin American countries
LIAT	Logistics Indicator Assessment Tool
LMIS	logistics management information system
LSAT	Logistics System Assessment Tool
MCH	maternal and child health
MDG	Millennium Development Goal
MOH	Ministry of Health
NAVISION	[software used by the Ugandan National Medical Stores]
NEWVERN	[USAID automated ordering, processing, and financial tracking system]
NGO	nongovernmental organization
NMS	National Medical Store
ODDID	[Reproductive and Child Health Alliance of Cambodia implemented this system]
OI	opportunistic infection
PAI	Population Action International
PATH	[organization uses acronym only
PEPFAR	President's Emergency Plan for AIDS Relief
PMI	President's Malaria Initiative
PMTCT	preventing mother-to-child transmission (of HIV)
ProQ	[software developed by the DELIVER project]
PSI	Population Services International
RACHA	Reproductive and Child Health Alliance of Cambodia
RHCS	reproductive health commodity security
RHeXchange	[web-based contraceptive procurement mechanism that was the precursor to the RHInterchange]
RHI	Reproductive Health Interchange (RHI),
RHSC	Reproductive Health Supplies Coalition
SCM	Supply Chain Manager
SCMS	Supply Chain Management System
SDP	service delivery point
SI	Supply Initiative
SIGM	*Sistema Integrado De Gestao De Medicamentos*
SOPS	standard operating procedures
SPARHCS	Strategic Pathway for Reproductive Health Commodity Security
STGs	standard treatment guidelines
STI	sexually transmitted illness
SWAp	sector wide approach
TB	tuberculosis
UN	United Nations
UNFPA	United Nations Population Fund
USAID	U.S. Agency for International Development
VCT	voluntary counseling and testing
WAHO	West Africa Health Organization
WHO	World Health Organization
WHO-AFRO	World Health Organization African Regional Office

ACKNOWLEDGMENTS

The real authors of this report are the many JSI and USAID staff members, plus their country counterparts who carried the work of the DELIVER project. When it came time to write the final report, the work was greatly simplified by the abundance of good documentation that they produced. DELIVER staff who shared the work of producing the document include Jennifer Antilla, Dana Aronovich, Jim Bates, Elizabeth Bunde, Yasmin Chandani, Abdourahmane Diallo, John Durgavich, Jim Eberle, Barbara Felling, Ali Karim, Sun Lee, David O'Brien, Youssouf Ouedraogo, Erika Ronnow, Raja Rao, David Sarley, Lesley Slevin, Sharon Soper, and Marie Tien.

EXECUTIVE SUMMARY

The U.S. Agency for International Development (USAID) funded the DELIVER project from October 2000 through September 2006. The contract requires a final report. The DELIVER project takes pleasure in providing this presentation to fulfill that obligation. The overarching goal of DELIVER was to assist developing country health programs in securing the availability of a broad range of contraceptives, HIV/AIDS condoms, and other essential health commodities to clients at service delivery points (SDPs). Using examples from the project's ample documentation, the report describes how DELIVER fulfilled both the letter and spirit of the contract.

The contract specified six elements through which the project worked to achieve the overarching goal. These elements are—

- *logistics system improvement,* or upgrading the physical and procedural components necessary to ensure the availability of contraceptives and other essential health commodities at SDPs
- *human capacity improvement,* or the fostering of the knowledge, skills, attitudes, and practices necessary to operate logistics systems
- *resource mobilization for contraceptive security,* an inclusive approach that works broadly with all stakeholders, including the private sector, to develop long-term strategies for effective forecasting, procurement, distribution, and financing of contraceptives
- *adoption of advances* in logistics, that is, the introduction into country systems of new technologies that will improve the efficiency with which contraceptives and other commodities are managed.

The final two project elements were focused in Washington, and these elements enhanced USAID's capacity as a major supplier of contraceptives:

- *estimation of USAID's contraceptive needs,* an activity designed to support USAID's requirement to know how many contraceptives to purchase and ship
- *operation of USAID's Contraceptive Commodities Management Information System* (*CCMIS),* to manage and enhance, on the agency's behalf, the commodity management information system that supports the central contraceptive procurement process.

DELIVER inherited from the Family Planning Logistics Management (FPLM) III project a large and experienced staff who were working in Washington and at the country level. Numbers of staff varied over the life of the project; in June 2005, there were approximately 160 experts worldwide, working in such specialties as contraceptive logistics, information technology, drug management, performance improvement, policy, financing, and evaluation. Of this total, about 100, or 60 percent, were based in Washington.

Over the life of the project, DELIVER worked in 48 countries, and in late 2006, had an active portfolio of 29 countries. At that time, field offices with one or more resident advisors were in 19 of the 29 countries. In addition to the country programs, there were two active regional programs, one for West Africa and one for Latin America.

When a project with six contractual elements runs for six years, operates in as many as 48 countries, and has ample documentation, it is a challenge to present brief summaries of the results. Listed below are a

few highlights from the project's different elements. They are ordered them to minimize the redundant writing that their interrelated nature would encourage.

Resource Mobilization for Contraceptive Security

Contraceptive security (CS) was a particularly strong activity area. Of the 29 countries in the end-of-project portfolio, 18 had *active* CS plans. Four countries had plans on paper that were not active, and seven had no plans. Twelve countries, or 40 percent of the active portfolio, were clearly engaged in funding diversification activities, which is a significant fact as insufficient funding is arguably the most important CS issue.

At the global level, DELIVER made progress on a number of activities that promote interagency collaboration. These included supporting the organization of contraceptive working groups, such as the Interim Working Group on Reproductive Health and Commodity Security and the Supply Initiative (SI). In partnership with the POLICY Project, DELIVER made substantial contributions to the development of the *Contraceptive Security Index*, a planning tool that aggregates the results of 17 indicators for 57 countries. For 47 countries, the index measures for both 2003 and 2006 are available.

Bringing the country and global work together, DELIVER developed a list of ten countries where practical work experience suggested that the ministries of health were genuinely interested in CS. This group showed an average 11.7 percent improvement in the *CS Index*, while the other 37 countries averaged 2.7 percent. Although not conclusive for showing causality, this analysis does suggest that countries that want to move toward CS are able to do so.

Human Capacity Building and Logistics System Improvement

This report combines human capacity building and logistics system improvement in one discussion, because, at the country level, the work for improving human capacity is not distinguishable from the work for logistics system improvement. It could be said that the first term describes the discipline and the second term describes the setting. Country by country, there were many specific achievements, and the list below illustrates the different ways in which DELIVER participated.

- In *Rwanda*, a country recovering from civil war, a vertical contraceptive distribution system brought measurable reductions in stockouts at the facility level. This simple program, characteristic of an earlier time, is the one most appropriate for Rwanda today and, for now, continues to serve the country well.

- *Ghana* is far advanced in its health sector reform (HSR) efforts, including the integration of its contraceptive, essential drugs, vaccines, and medical supplies distribution systems. DELIVER played a central role in this complex activity, which represented a major change from its predecessor, the FPLM III project, when access was limited and work in HSR situations was primarily to defend logistics systems from poorly planned reforms. In six countries—*Ghana, Uganda, Ethiopia, Malawi, Indonesia* and *Bolivia*—DELIVER was at the reform planning table and played an important role in inducing rational logistics reform.

- In *Uganda*, there were enormous escalations in funding and commodity inputs for contraceptives, essential drugs, vaccines, as well as drugs and other supplies for malaria and HIV/AIDS. DELIVER assisted the Uganda Ministry of Health (MOH) with the integration of some supply systems, as well as maintaining vertical ones where it made the most sense. Because of product or program requirements, this meant one overall system for contraceptives, essential drugs, sexually transmitted infection (STI) program drugs, HIV/AIDS, opportunistic infection (OI) drugs, HIV and malaria test kits, and general laboratory supplies. It also meant separate vertical systems for tuberculosis (TB) drugs, antiretrovirals (ARVs), and antimalarials. This configuration represented DELIVER's attempt

to help the Ministry cope with scale-up by seeking the efficiencies through integration where possible and making pragmatic choices where separate systems served the situation best.

- Apart from a recently completed CS assessment, DELIVER did not work in the *Central Asian Republics***,** but the region still merits a brief note here because JSI Logistics Services carried out supply chain–related work there using DELIVER's lessons learned, thus reducing costs to the client, a USAID-funded regional project. In Uzbekistan, Tajikistan, Turkmenistan, and Kyrgyzstan, JSI Logistics Services collaborated with Project HOPE to implement a TB drug distribution system. In a situation where the quantity of work to do greatly exceeded the funds available, it was possible to design and implement a simple and locally appropriate logistics management information system (LMIS), based on models developed elsewhere. In carrying out this work the JSI logistics staff consulted the DELIVER LMIS and performance improvement staff to ensure that the work met DELIVER's quality standards.

Adopting Logistics Advances

Public-sector logistics systems are becoming more sophisticated as population increases and new health programs place increasing burdens on them. While this is happening, financial constraints are limiting the options for providing effective service. The overall logic of this situation calls for improved logistics system efficiency. Use of *appropriate techknowledgy* programs, such as PipeLine for supply planning and ProQ for quantifying HIV/AIDS test requirements, seemed to work well in most countries, but they did not solve all the problems.

Throughout the life of the project, DELIVER experimented with adapting private-sector methods and products. The results were mixed. Commercial-off-the-shelf software and cutting edge innovations, such as bar coding, have not worked as well as hoped; the principal problems were the cost of making required modifications and the scarcity of local software companies that could help maintain extremely sophisticated software. It is possible, however, as we learn more about the setup and support requirements of these products, companies will be identified that can improve efficiency and be economically replicated. Certainly efforts should continue. One technology that worked well was the use of electronic smart cards to track the dispensing of antiretroviral therapy (ART) to HIV/AIDS patients.

Estimating USAID's Contraceptive Needs

Under DELIVER, as under FPLM III, the Contraceptive Procurement Table (CPT) was the key tool for estimating contraceptive requirements and the connected global procurement activities with work at the country level. Between fiscal year (FY) 2001 and FY 2006, 1,548 CPTs were received, reviewed for quality assurance, analyzed, and entered into NEWVERN (the automated order processing and financial tracking system, also known as CCMIS). These CPTs represented 37 countries, 66 recipients, and 53 products. As will be shown, the data in the CPTs are useful not only for estimating contraceptive needs, but also for monitoring trends when the project is evaluated.

DELIVER annually produced the *USAID Contraceptive Procurement Guide and Product Catalog* as a guide to missions, programs, cooperating agencies (CAs), Commodities Security and Logistics Division (CSL), and DELIVER staff on CPT preparation and USAID ordering procedures. In FY 2002, DELIVER successfully implemented the CPT skills assessment training course, which was another opportunity to improve the quality and reliability of CPTs. Over the course of the DELIVER project, seven training sessions were held for 99 participants.

To measure the reliability of CPTs, DELIVER conducted statistical analyses of forecasting accuracy. Most recently, the *Accurately Forecasting Contraceptive Needs: Levels, Trends and Determinants* (Karim forthcoming) assessed the accuracy of annual contraceptive forecasts in CPTs prepared between 1994 and 2002 compared to the actual demand contained in CPTs prepared between 1996 and 2004. The comparison consisted of 1,050 CPTs covering 50 programs in 19 countries.

Ali Karim's study reviewed the factors that influence forecast accuracy; his paper defined forecast accuracy as "the absolute percentage difference between projected and actual quantities of a contraceptive distributed in a specific year for a given program." The study revealed the following:

- Forecast accuracy improved between 1995 and 2004.
- Expected forecast error was about 25 percent (considered good in commercial circles).
- Forecasts were more likely to overestimate rather than underestimate actual consumption.
- Improvements in forecast accuracy were associated with improvements in the LMIS and with the use of PipeLine software.

Operating CCMIS

DELIVER maintained and managed NEWVERN; the project used NEWVERN to assist CSL with the purchase, storage, and shipment of family planning and reproductive health commodities to USAID-supported recipients throughout the world. NEWVERN was the primary repository of information relating to CSL's contraceptive production, warehousing, and shipping activities. It also contained information on CPTs; production contracts; and warehouse stocks by lot, field orders, and shipments in process; and funds received and expended.

NEWVERN was available through the Internet to USAID staff, recipient programs, and other partners involved in the procurement and shipping process. In FY 2005, DELIVER introduced a redesigned NEWVERN website with many new user-friendly features and greater security options. Improvements included the ability for users to view shipment information, account statements and publications, as well as updating pertinent shipping information for customers and recipients.

During the course of the DELIVER contract, the system had five major version updates with 12 minor upgrades, including 47 functionality additions/modifications, 23 report additions/modifications, 14 interface modifications, and four website updates.

Leadership for Logistics Solutions

DELIVER was more than the sum of its parts and the work described in greater detail in the body of the report demonstrates that the project provided innovative leadership in a number of areas, including—

- In 2001, following the Istanbul conference on contraceptive security, emphasis was placed on the need to increase donor financing. Since then, advocacy for funding increases have not achieved the hoped-for results. DELIVER found, however, that work at the country level, especially work with diversification of financing, offered considerable hope for improvement, independent of donor funding. This was a concrete and direct contribution to long-term sustainability goals.
- Research carried out under the FPLM III project documented persistent problems where HSR efforts insufficiently planned for logistics and, in a number of cases, caused serious disruptions to logistics systems. DELIVER put considerable effort into reversing this tendency by working with reform planners in a number of countries to ensure that their work constructively embraced logistics. DELIVER's presence at the table in a number of countries meant that reforms were supported and strengthened by improvements to the logistics systems, rather than undermined by their disruption.
- DELIVER's start-up coincided with the worldwide movement to bring ARTs to developing countries and the concomitant rise of the President's Emergency Plan for AIDS Relief (PEPFAR) and Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria (GFATM) funds. These developments, plus targeted funding from bilateral donors, soon induced massive increases in the procurement of drugs, test kits, and other supplies for HIV/AIDS, TB, and malaria. Some of these products brought special

problems, such as short shelf lives or unusual bulk. Countries anxious to deliver these life-saving supplies to the people were usually not equipped to cope with these surges. DELIVER led the way in developing specific methods for coping with the needs of specific products, as well as exponential increases in volumes of supplies.

- Although some countries continue to operate rudimentary public health logistics systems, others have grown considerably in their sophistication and efficiency. Where once it was sufficient to use stock record cards, forward motion began to require the introduction of advances technologies, such as bar coding, radio frequency identification devices, and smart cards. The introduction of these technologies was not easy and some efforts failed. Looking to the future, however, the efficiencies promised by these technologies will be required to cope with the simultaneous rollouts of the new initiatives described in the preceding paragraph. DELIVER invested considerable effort in identifying, testing, and installing advanced commercial sector technologies; this leaves the USAID | DELIVER PROJECT with a strong foundation for introducing advanced systems into resource poor settings.

PROJECT OVERVIEW

PURPOSE

USAID funded the DELIVER project from October 2000 through September 2006. The overarching goal of DELIVER was to assist developing country health programs in securing the availability of a broad range of contraceptives, HIV/AIDS condoms, and other essential health commodities to clients at SDPs. Using examples from the project's ample documentation, this report describes how the DELIVER project fulfilled both the letter and spirit of the contract.

PROJECT ELEMENTS

The contract specified six elements that the project used to achieve the overarching goal. The first four elements focused on work at the country level:

- *logistics system improvement,* or upgrading of the physical and procedural components necessary to ensure the availability of contraceptives and other essential health commodities at SDPs
- *human capacity improvement,* or the fostering of the knowledge, skills, attitudes, and practices necessary for operating logistics systems
- *resource mobilization for contraceptive security,* an inclusive approach that works broadly with all stakeholders, including the private sector, to develop long-term strategies for effective forecasting, procurement, distribution, and financing of contraceptives
- *Adoption of advances* in logistics, that is, the introduction of new technologies into country systems, to improve the efficiency with which contraceptives and other commodities are managed.

The final two project elements were Washington-focused and enhanced USAID's capacity as a major supplier of contraceptives:

- *estimation of USAID's contraceptive needs,* an activity designed to support USAID's requirement to know how many contraceptives to purchase and ship
- *operation of USAID's CCMIS,* that is to manage and enhance, on the agency's behalf, the commodity management information system that supports the procurement process.

STRUCTURE AND OPERATIONS

From the FPLM III project, DELIVER inherited a large and experienced staff working in Washington and at the country level. Numbers have varied over the life of the project; in June 2005, there were approximately 160 experts worldwide, working in such specialties as contraceptive logistics, information technology, drug management, performance improvement, policy, financing, and evaluation. Of this total, approximately 100, or 60 percent, were based in Washington.

Over the life of the project, DELIVER worked in 48 countries and toward the end of 2006 had an active portfolio of 29 countries. There were field offices in 19 of the 29 countries. In addition to the country programs, there were two active regional programs—one for West Africa and one for Latin America. See appendix 1 for a list of the countries where DELIVER worked, including fact sheets about our work in each of the countries.

Figure 1 displays a flow chart of DELIVER's approach to commodity security and logistics improvement. Although individual country plans may have varied, the following sequence was usually observed:

- assessment
- analysis
- selection and planning for interventions
- design
- implementation
- monitoring.

It was through this process that DELIVER designed and implemented typical project activities that included diversifying funding options, improving storage conditions, installing inventory controls, rationalizing transport, or strengthening the LMIS.

Figure 1. DELIVER Model for Commodity Security and Supply Chain Improvement

The flow chart stresses quality monitoring at every step. DELIVER ensures the quality of its work in a number of ways, including—

- *Written quality standards* were required for products and activities that included curricula and training materials, automated LMIS designs, application of evaluation tools, preparation of contraceptive procurement tables, and quantifications and forecasts for essential medicines and laboratory supplies.
- *Internal review* was done for the design and implementation work carried out by DELIVER advisors at the country level. In any given country, one or several *advisors* were asked to contribute,

depending on the specialties required. Each country had an assigned *Country Team Leader* (CTL), who coordinated the work of the advisors; the team leaders, in turn, were supervised by *Country Coordinators* (CC). The CTLs and CCs were responsible for monitoring the quality of all the work and for ensuring that quality standards were met. Advisors, CTLs, and CCs routinely submitted proposals and draft products to specialists in the home office for review; this process frequently resulted in revisions and improvements.

In addition to country-level work, which was DELIVER's main focus, the project also developed and disseminated a variety of tools, hosted a series of events, and participated at many conferences. These efforts improved logistics management, allowed the sharing of results and best practices, and raised awareness of the importance of logistics. These were USAID's contribution to supply chain management, lessons learned, and accomplishments.

Concrete examples of tools that the project has put to extensive use at the country level include the *Strategic Pathway for Reproductive Health Commodity Security (SPARHCS)* assessment tool; PipeLine computer software for managing procurements; and ProQ software for forecasting HIV/AIDS test kit needs. (See appendix 2 for a complete list of these publications.)

Major studies include analyses of CPT-based forecasting activities, investigation of decentralized logistics systems, and evaluation of contraceptive prices in West Africa.

Part of DELIVER's communications strategy included sharing knowledge through the project website and other electronic means, including listservs and newsletters, as well as by mail. Over the life of the project, DELIVER publications and software were disseminated to more than 65 countries. See the references page for a complete list of the DELIVER publications.

DELIVER hosted and participated at many conferences and events in Washington, D.C., and abroad. A few specific examples include—

- In October 2006, DELIVER hosted the State of the Practice: Contraceptive Security in Latin America and the Caribbean. To ensure future contraceptive security, the event focused on common findings across countries and recommendations that merited investment at the regional and country level.
- Held in May 2006, DELIVER's Critical Issues Series event, *Delivering HIV/AIDS Commodities to Customers: Insights and Partnerships for Seamless Supply Chains*, brought together stakeholders that influence, implement, or integrate HIV/AIDS supply chains to discuss gaps in and solutions for achieving seamless supply chains.
- USAID, DELIVER, and KfW hosted the East Africa Reproductive Health Contraceptive Security Workshop: *Ensuring Access to Family Planning* in November 2005 in Dar es Salaam, Tanzania. The workshop addressed the critical need to improve access for the family planning supplies and services for women and men in the region.

DELIVER also adhered to USAID's branding and marking requirements and complied with Section 508 for website accessibility. See appendix 2 for a list of all publications (including tools) produced during the project.

DELIVER will provide the volume of funds expended and the level of effort provided over the life of the project in a separate document.

ORGANIZATION OF THIS REPORT

In the summary above, the project elements have been listed in the order in which they appear in the contract. Given, however, the overlap and interrelationships among these elements, the original order

would result in a great deal of repetitive writing if it were used as the sequence of discussion in a report. The following presents a more unified and efficient presentation:

- The technical discussion opens with *Resource Mobilization for Contraceptive Security,* which is an inclusive concept that requires the mention of the other elements of the project and the activities that they cover.
- In the next section, *Human Capacity Development* and *Logistics System Improvement* are one presentation. Capacity development is carried out to improve systems; during country-level implementation, the two elements are not distinguishable in practice.

The other elements of the project are then presented in the original order:

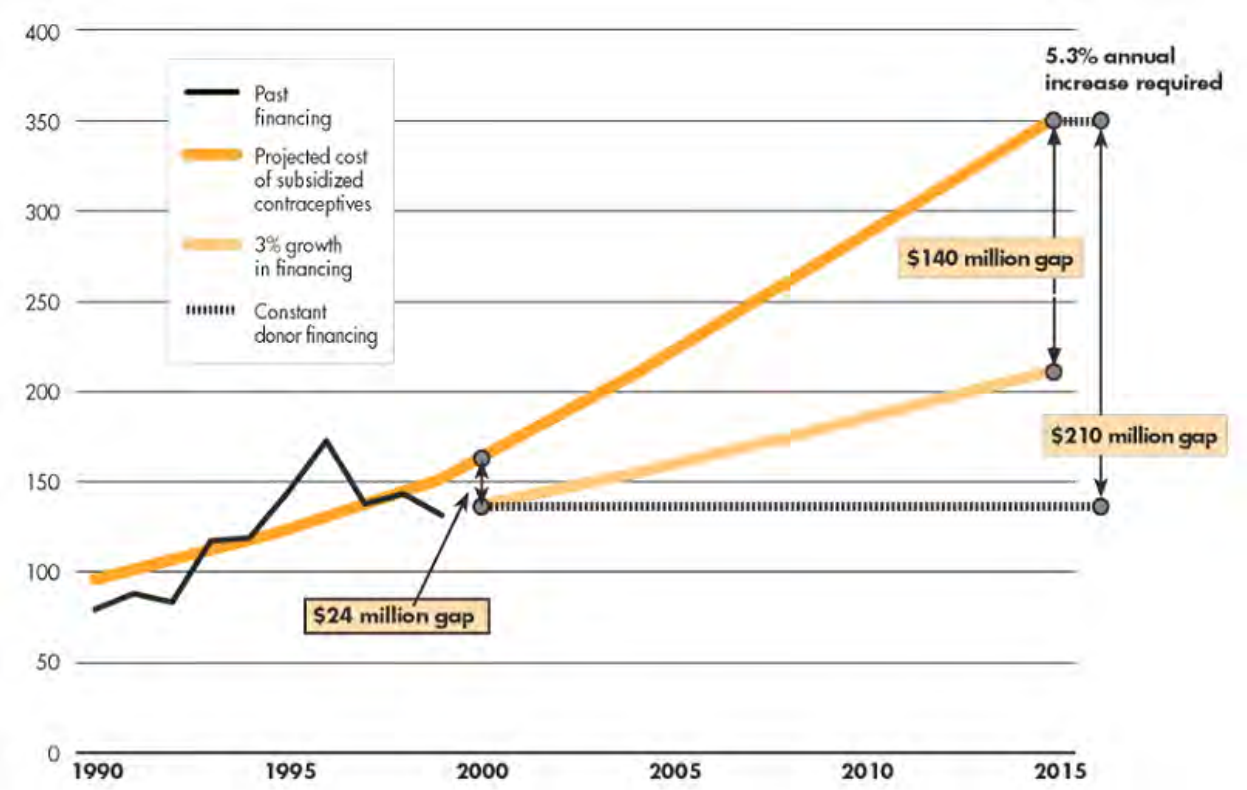
- *Adopting Logistics Advances*
- *Estimating USAID's Contraceptive Needs*
- *Operating CCMIS.*

The report concludes with a brief discussion of how the project has provided *leadership in commodity management* that has benefited clients and other stakeholders, and how the project has enhanced USAID's reputation and capacity in commodity management.

RESOURCE MOBILIZATION FOR CONTRACEPTIVE SECURITY

Projections prepared for the Interim Working Group on reproductive health commodity security (RHCS) in 2001 showed that donor funding would need to increase initially by $24 million; then by 5.3 percent annually if donor-funded contraceptive supplies were to meet projected demand in 2015 (see figure 2). Available information shows that over the last four years, donors have not sustained the required increase in funding. DELIVER's practical experience showed, however, that in other ways the situation is much more positive than these disappointing results suggest. It is clear that recent initiatives at country, regional, and global levels have improved the outlook for RHCS.

Figure 2. Projected Gap in Donor-Provided Contraceptive Funding



REQUIREMENTS FOR CONTRACEPTIVE SECURITY

As the DELIVER project began, it worked with a consensus definition of *contraceptive security*. At that point, this important concept was defined as a state in commodity management that is characterized by the availability of contraceptive supplies for all who wanted them, which could be achieved when countries could carry out the following four activities:

- forecast their needs
- efficiently procure the required product
- distribute it to customers
- achieve a financial situation in which funds from all sources were sufficient to support required purchases.

Six years later, DELIVER's work suggests that a more complete definition would take into account the following factors:

- *Commitment* of key stakeholders to CS is required if improvements are to be sustained.
- Favorable *policies*, often included in HSR, are needed to encourage the public and private provision of contraceptives.
- *Coordination* among all stakeholders is required for the true partnerships and information flow required to avoid duplication and address gaps.

Reaching all segments of the market requires a *total market approach* in which the roles of the public, private, and nongovernmental organization (NGO) sectors are understood and even coordinated, if possible.

- Realistically, in most countries, securing enough *funding* will require financial contributions from all market segments.
- Accurate *forecasting* based on consumption data and efficient *procurement capacity* are required to ensure that the best prices and quality are obtained through transparent contracting and timely ordering and delivery.
- Well functioning in-country *distribution* systems (storage and transport) need to be in place to ensure that contraceptives are always available where they are needed.
- Equity in and access to *service delivery* must be in place to ensure that clients, including *underserved* populations, are reached.
- A *monitoring and evaluation capacity* is needed to make necessary adjustments as new constraints emerge or outputs do not meet targets.
- A focus on the *client* and an understanding of the *context* in which clients seek service is essential for determining the reasons for unmet need.

The balance of this section provides examples of these variables in play as we consider DELIVER's role in global, regional, and country CS activities.

GLOBAL INITIATIVES

NEW WORKING GROUPS

JSI had worked with partners that included the Wallace Global Fund, Population Action International (PAI), and PATH. With these partners, they set up the Interim Working Group on Reproductive Health Commodity Security (IWG/RHCS). Within IWG/RHCS, DELIVER played a leadership role in preparing for the highly influential Istanbul conference, Meeting the Reproductive Health Challenge: Securing Contraceptives and Condoms for HIV/AIDS Prevention. This meeting was an important moment for the

global community; it created the space and commitment to raise awareness in the issues surrounding supplies, and more importantly, to seek solutions for those issues. IWG partners prepared nine papers, including the highly influential paper, *Contraceptive Projections and Donor Gap*, which predicted a $140 to $210 million shortfall in donor funding by 2015 (all nine papers are on the RHSC website.[1] DELIVER prepared a business plan, functional requirements, and a prototype website for the RHeXchange, a web-based contraceptive procurement mechanism that was the precursor to the RHInterchange. The Istanbul conference ended with a call to action. In 1999, prior to the meeting, the funding level of contraceptives had dropped to $154 million; after Istanbul, by 2004, bilateral and multilateral donor support for contraceptives had increased to $203 million.

The original IWG partners worked with a broad array of stakeholders to move the agreed-upon actions that emerged from the Istanbul meeting forward. In January 2003, the SI was formed, based in Europe in response to stakeholder input, and managed and staffed by the German Foundation for World Population (DSW), JSI, PAI, and PATH. The organization carried out a number of advocacy activities, some of them are ongoing. One contribution was the creation and operation of the Reproductive Health Interchange (RHI), which is a consolidated contraceptive procurement database, currently including data from USAID, United Nations Population Fund (UNFPA), and International Planned Parenthood Federation (IPPF). Information from the Supply Chain Management System RHI is intended to facilitate and improve discussions about the coordination of inbound supplies. For additional information on this activity, go to the RHI website.[2]

The efforts that DELIVER and other organizations made through the IWG and SI eventually led to a very important development in which DELIVER has not been directly involved—the Reproductive Health Supplies Coalition, which has met five times since it was organized in 2004 and has a permanent secretariat in Brussels. Among its 20 members are such influential agencies working for reproductive health as the World Bank, UNFPA, the World Health Organization (WHO), European Union, USAID, DFID, GTZ/KfW, and the Bill & Melinda Gates foundation.[3] Three well-established working groups, each of which is grounded in priorities established at the Istanbul conference, include (1) resource mobilization and awareness raising, (2) systems strengthening, and (3) market development approaches.

It is significant that a number of the RHSC members are important funders of contraceptives and providers of technical assistance for systems strengthening—USAID, UNFPA, DFID, and KfW. Concomitant to the founding and evolution of RHSC, a consensus for a worldwide contraceptive security movement has emerged, with UNFPA having assumed a visible coordinating role. As a result, there are a growing number of individual country commodity security programs in every region of the world.

It is fair to say that USAID through DELIVER played a key role, first with its support for the Istanbul conference and, subsequently, with JSI and DELIVER's ongoing collaborations with UNFPA and other partners in country-level contraceptive security programs. It is here that we see the critical link between global advocacy and improved coordination in country arenas. DELIVER has played concrete roles at both ends of the continuum.

---

[1] http://www.populationaction.org/Publications/Reports/Meeting_the_Challenge/asset_upload_file852_5487.pdf

[2] www.rhi.rhsupplies.org.

[3] The complete membership list includes Bill & Melinda Gates foundation, Department of International Development (DFID), German Development Cooperation (GTZ)/German Development Bank (KfW), GSMF International (Ghanaian social marketing company) , International Planned Parenthood Foundation (IPPF), Ministry of Finance, Planning and Economic Development of Uganda, Ministry of Health of Romania, Ministry of Health and Family Welfare of India, Netherlands Ministry of Foreign Affairs, Partners in Population and Development (PPD), Population Services International (PSI), Profamilia of Columbia, Shanghai Institute of Planned Parenthood Research, Supply Initiative, United National Foundation, United Nations Population Fund (UNFPA), United States Agency for International Development (USAID), World Bank and World Health Organization (WHO).

CONTRACEPTIVE SECURITY INDEX

Another global initiative, undertaken in collaboration with the POLICY Project, is the aggregation and dissemination of the 2003 and 2006 *Contraceptive Security Index* (CSI.) The purpose of the CSI, which is disseminated by means of technical papers and wall charts, is to raise awareness about CS and the interrelationships between program components, different sectors, and program outcomes. At the international level, the index can be used for priority setting, planning and advocacy to support policies, and other interventions that promote progress towards CS. At the country level, it can be used to identify areas of relative strength and weakness to help stakeholders apply their resources more effectively.

The CSI has 17 indicators, grouped into five components:

1. supply chain
2. finance
3. health and social environment
4. access
5. utilization.

The indicator results are weighted and aggregated to establish a composite index that distills the results for all five components. DELIVER and POLICY have compiled the index two times, once in 2003 for 57 countries and again in 2006 for 63 countries. See appendix 3 for copies of the wall charts for 2003 and 2006**.**

The range of possible index sores is 0 to 100. For 2006, they ranged from 35.5 to 73.2. In 2003, the range was 28.1 to 68.1. Using a paired t-test, indicating aggregate improvement, the 2006 total scores, averaged across the 57 countries included in both aggregations, represent a statistically significant increase from 2003. The global averages for the five components also show significant improvement in every component from 2003 to 2006. In most cases, averages for the component scores by region also showed improvement but the results for regions are not always significant.

Table 1 lists the 10 countries where DELIVER staff felt the ministries of health had taken CS seriously; these are the total CSI scores for 2003 and 2006. Except for Kenya and Ethiopia, they show moderate to large increases. The average point increase for this set is 11.7. The average increase for the other 47 countries on the 2003 list is 2.7. This comparison does not establish a causal relationship between DELIVER inputs and the above average scores. It is safe to say, however, that these 10 countries' collaboration with DELIVER demonstrates their interest in CS, and that countries with a high interest are able to make progress.

Table 1. Total CSI Scores for 10 *Active* DELIVER Countries, 2003 and 2006

Country	2003 Total Score	2006 Total Score	Percentage Difference
Ghana	48.6	54.6	+12
Malawi	45.3	49.6	+9
Kenya	50.7	51.2	+1
Nigeria	42.3	48.6	+15
Bangladesh	56.4	62.7	+11
Tanzania	47.5	52.4	+10
Uganda	39.1	48.5	+24
Ethiopia	38.0	38.9	+2
Nicaragua	57.1	66.3	+16
Bolivia	51.1	59.8	+17

Although time trends derived using this methodology must be viewed with caution, these comparisons help substantiate the observation at the beginning of this section, that despite disappointing results for donor funding increases six years after Istanbul, other initiatives have improved the outlook for CS.

As noted, within countries, the CSI displays a broad indication of the state of affairs for variables that affect CS. To do useful planning for improvement at the country level, however, much more information is needed. DELIVER has devoted significant attention to the problem of how to collect and present such information, and it is to this subject that we turn next.

STRATEGIC PATHWAY TO REPRODUCTIVE HEALTH COMMODITY SECURITY

The Strategic Pathway to Reproductive Health Commodity Security (SPARHCS) is a framework for collecting and organizing information on the multiple components of reproductive health commodity systems. SPARHCS can be used for at least three different purposes in developing RHCS strategies:

- As a framework that helps stakeholders understand the full range of elements that make up an effective approach to RHCS.
- As a diagnostic guide that highlights a system's problem areas by using a series of targeted questions that assess a country's RHCS situation.
- As a process that facilitates cooperation among stakeholders who convene to use SPARHCS, because strengthening RHCS requires coordinated efforts.

The SPARHCS framework echoes the variables that affect CS and with which we began this section, including context, commitment, capital, coordination, capacity, and clients. Its data collection instruments are easily adaptable to individual country situations, and it is designed to make maximum use of pre-existing bodies of information.

What makes SPARHCS a truly global initiative is the fact that it results from a collaboration between DELIVER and other prominent participants in the field of RHCS—USAID, UNFPA, DELIVER, and the POLICY Project. Many other important organizations have also participated: Abt Associates, PATH, and PSI from USAID CAs; Schering-Plough and Wyeth from the manufacturing sector; the Wallace Global Fund and the Packard Foundation from philanthropic organizations; and the World Bank and WHO from

among multilateral agencies. This demonstrates that SPARHCS is accepted worldwide as providing the common language for assessment and planning.

DELIVER and other partners pilot tested SPARHCS in Bangladesh (2000), Nigeria (2001), and Madagascar (2002). Since then, SPARHCS has been implemented in 11 other countries, including Peru, Indonesia, Bolivia, Nepal, Nicaragua, Paraguay, Honduras, Ghana, Burkina Faso, Cameroon, and Togo. In addition, elements of SPARHCS have been used in regional assessments carried out in West Africa and Central Asia.

REGIONAL APPROACHES

A regional approach can provide many benefits to country teams working on CS. Regional workshops and conferences provide settings for the exchange of ideas and lessons learned with neighbors who typically face similar problems.

- As countries compare experiences**,** solutions for problems that are apparently intractable in one country may be found in another.
- Historical similarities between countries in a region may lend themselves to the adoption of common solutions.
- Bringing neighboring countries together can also engender some positive competition as countries see how they are performing compared to their neighbors. There are several examples of previously recalcitrant countries becoming energized after seeing what their neighbors had accomplished.

Although there has been some regional work in Eastern Europe, Eastern Africa, and Central Asia, DELIVER has implemented its most definable regional approaches in Latin America and West Africa.

In recent years, USAID has begun a gradual phaseout of contraceptive donations to all programs in the *Latin America and Caribbean region*. As countries have started preparing for this development they have struggled with similar challenges. During the early 2000's, certain key constraints to contraceptive security throughout the region were noted:

- little financial planning and limited political commitment toward sustaining the long-term supply of contraceptives
- varied capacity for the logistics functions of selection, forecasting, and procurement of contraceptives
- lack of information on options for improvement, including successful experiences within the region
- laws that favored the use of relatively expensive local distributors over the use of international suppliers known to supply good quality contraceptives at competitive prices
- despite relatively high contraceptive prevalence rates (CPRs), low use of modern methods and high unmet need in rural areas, among the lowest socioeconomic groups, the uneducated, and certain ethnic groups.

Countries facing phaseout include Bolivia, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Paraguay, and Peru. DELIVER supported USAID's LAC Bureau in convening a meeting in July 2003 in Managua that focused on the development of CS committees and strategies for each country. Despite the commonalities, it was clear that the strategies must be country-specific, taking into account local needs, resources, and constraints.

Five countries (Bolivia, Peru, Nicaragua, Paraguay, and Honduras) agreed to undertake SPARHCS assessments. DELIVER and the POLICY Project assisted in carrying these out. USAID sponsored a

second regional contraceptive security meeting in Lima in October 2004. Results of this workshop included two additional countries (Ecuador and Dominican Republic) that decided to carry out the SPARHCS assessments and three countries (Bolivia, Nicaragua, and Paraguay) that decided to further engage the private sector, starting with a market segmentation analyses. These specialized assessments are the basis for specific countries' CS plans. As work in all countries has progressed, a regional strategy has emerged that includes the following elements:

- Establishment of multi-sector CS committees (DAIA in Spanish) at the country level that have continued to meet since the regional workshops; they have also carried out coordination, planning, and action.
- SPARHCS assessments and market segmentation analyses that have led to the development of CS strategies that make increased use of the private sector.
- Increased public sector funding for contraceptives. Paraguay and Guatemala have established line items for contraceptive procurement, while Ecuador, Peru, Honduras, Dominican Republic, and El Salvador have all begun to fund part of their supply. All of these developments post-date the start of the regional initiative. Although the Ecuador and Peru examples pre-date the regional activity, the other four items have occurred in response to this process.
- Increasing use of UNFPA as a procurement agent, as well as other options, to gain access to the competitive international contraceptive market.

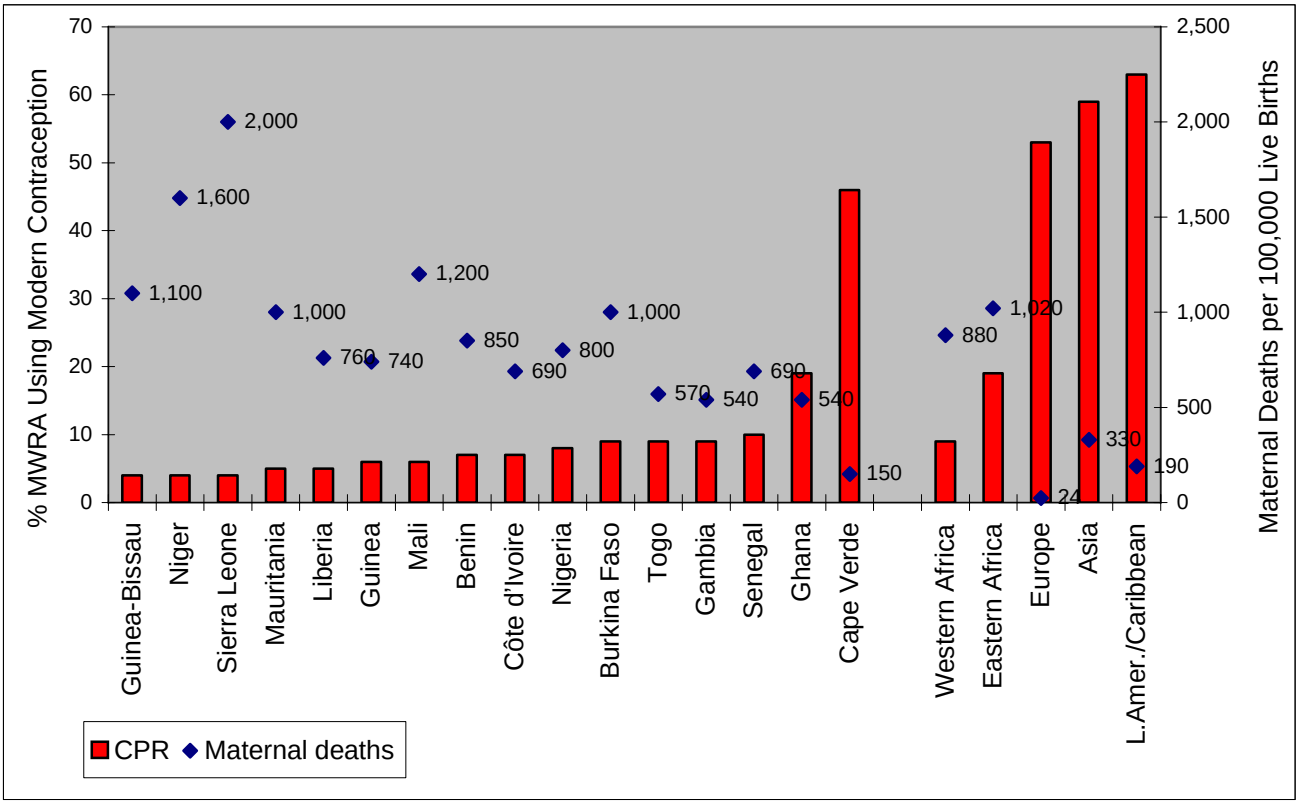
DELIVER followed approximately the same process in *West Africa* as in Latin America. Starting in 2003, DELIVER worked with West Africa Health Organization (WAHO), which is the health secretariat for the 16-member Economic Community of West African States (ECOWAS). This work has had two major objectives:

- development of a regional RHCS strategy
- design and implementation of a *coordinated informed buying* (CIB) procurement information system.

These efforts were actively supported by such important regional partners as WHO/AFRO, the *Association Africaine des Centrales d'Achats de Médicaments Essentiels* (ACAME), and the *Centre d'Etude et de Recherche sur la Population pour le Development* (CERPOD). Major international partners such as UNFPA, the World Bank, and KfW have also lent their support.

DELIVER used the results of the country-level SPARHCS assessments to develop a regionwide assessment. The specific findings were not strikingly different than the findings in Latin America and they do not need be listed in detail. There was, however, one major difference: in Latin America, the stimulus for regional work was the commonly shared problem of phaseout of donor contraceptive grants; while in West Africa, it was the urgent need to address a bad and still declining situation for maternal and child health. In West Africa, on average, 880 women die for every 100,000 births and 100 infant deaths occur for every 1,000 live births. The gravity of the situation is recognized by the UN's Millennium Development Goals (MDG), whose indicators include improving MCH outcomes and reducing the spread of HIV/AIDS. As figure 3 shows, there is a demonstrable correlation between CPR and maternal mortality, meaning that the availability of contraceptives and other reproductive health commodities is a necessary condition for achieving the MDG goals.

Figure 3. Contraceptive Prevalence and Maternal Mortality in West Africa, 2002



West African leaders have recognized DELIVER's assessment for its direct strategic relevance. At its fifth annual assembly in Accra in 2004, ECOWAS health ministers recommended that WAHO and its partners develop a regional strategy for RHCS. In Dakar, in 2005, ministers endorsed a road map for that strategy that was directly based on the recommendations in DELIVER's regional assessment.

Using a CIB model that incorporates commercial sales agents' price quotations for a defined set of reproductive health drugs, DELIVER's assessment estimated that a savings of up to 14 percent below international indicator prices are possible. Unit prices for contraceptives could be lowered by as much as 28 percent. It is not surprising then that the ministers in Dakar also called for the implementation of the CIB mechanism. DELIVER worked with WAHO to place a CIB manager in Dakar who will chair a system design workshop that will be attended by procurement managers from countries across the region. The aim of the workshop is to specify the procedures and routines required to allow the flow of price and other procurement information between country programs and the central database at WAHO.

As noted, DELIVER also pursued regional approaches for RHCS in Eastern Europe, Eastern Africa, and Central Asia. Details for these promising activities are in the report *Contraceptive Security: Practical Experience in Improving Global, Regional, National, and Local Product Availability* (Sarley et al. 2006).

COUNTRY CONTRACEPTIVE SECURITY PROGRAMS

Beginning in 1986, USAID invested in three successive family planning logistics management projects—FPLM I, FPLM II, and FPLM III. Although the work of these projects expanded and diversified over time, they still maintained a relatively narrow focus on vertical public sector contraceptive supply chains. DELIVER's mandate for contraceptive security was one of two major distinctions between this project

and its predecessors. (The other was the mandate to expand beyond contraceptives and to significantly engage work for other products.)

During DELIVER, USAID recognized that work on supply chains alone will not resolve the complex of dilemmas posed by the quest for secure supplies of contraceptives. This point was anticipated at the beginning of this section with the listing of 10 factors that influence contraceptive security. It has already been noted that worldwide UNFPA, USAID, and other donors are sponsoring country contraceptive security plans.

DELIVER was providing services in 29 countries in the last year of the project. Resource mobilization staff consider that 18 of them had CS plans that were *active*, and receiving attention from stakeholders. Four countries had plans on paper that were not active. Seven countries did not have plans. Inevitably, these distinctions are not always clear. In the case of Guatemala, there was no formalized CS strategy, yet the government had within the past two years enacted a law that earmarks 15 percent of alcoholic beverage tax revenues for reproductive health, and the country was working on a plan to set aside matching funds for replacing donated contraceptives.

The substance of the country CS plans varied greatly. For Bangladesh, a charter family planning country with a well-established and effective distribution system, the CS plan had focused on activities that would make the available financing go further, such as making procurement more efficient or making greater use of the private sector. For Rwanda, a fragile state emerging from a devastating civil war, the CS plan placed priority on establishing a public sector contraceptive distribution system; meaning that the Rwanda program closely resembled those that characterized FPLM.

The most distinctive new departures that the country-level CS planning brought along included—

- investment in building commitments for CS, creating favorable policies, and improving coordination among stakeholders
- adopting a total market approach
- diversification of funding
- emphasis increased on improving public sector procurement practices than in the past.

Prominent within CS plans but not a new departure was—

- general supply chain improvement.

DELIVER attempted a tabulation of these new departures to give a sense of which CS activities were in the greatest demand. This effort immediately ran into problems because of the difficulty of counting intangibles, such as commitment, coordination, and policies. Nor could the logistics system improvement activities that took place in almost all DELIVER countries be counted as a new trend. However, *diversification of funding* and *procurement* emerged more clearly as countable new activities. Twelve countries or 40 percent of all DELIVER countries and 66 percent of active CS plan countries were clearly engaged in funding diversification activities. They included Bangladesh, Benin, Cameroon, Ethiopia, Ghana, Dominican Republic, Ecuador, El Salvador, Paraguay, Peru, Madagascar, and Guatemala. Four countries, or 14 percent of the overall portfolio and 22 percent of the active CS plan–listed countries had procurement improvement-related activities. To this may be added regional work on this topic through the ECOWAS.

Following are discussions of each of these CS activity areas, with specific country examples.

Commitment, coordination, and policy. Commitment is needed from the highest levels of country leadership, but also from other levels of the public sector and from civil society. In this respect,

commitment must be understood in a broad socio-cultural context. Indicators that demonstrate commitment to CS include policies that support the right to family planning; budget lines for commodity procurement; and explicit inclusion of CS in national social policy initiatives, such as poverty reduction strategy papers.

To be effective, contraceptive supply chains must include many partners working together to ensure the availabilities of products to all who need them. Coordination between partners promotes efficient and optimal utilization of limited resources, which reduces the likelihood of waste, duplication, or contradictory decisions. Specific examples of coordination requirements include the national level between commodity suppliers, such as ministries of health, UNFPA, USAID, and IPPF; and between sectors providing services, such as the public sector, NGOs, faith-based organizations, and commercial.

A supportive policy and regulatory environment is required for contraceptives to be both available and accessible. The areas to be covered are diverse. Among the most important are product registration and quality control; essential medicines lists (EMLs) and standard treatment guidelines (STGs); patents, tariffs, duties, and other import-related items; distribution strategies, including both public- and private-sector options; and HSR initiatives, such as integration and decentralization. Two examples of progress for commitment, policy, and coordination took place in Ghana and Georgia.

- *Ghana* in 2002 created an inter-agency coordinating committee for contraceptive security (ICC/CS). In 2003, the ICC/CS set up a technical working group that remains active, working on such activities as monitoring progress of CS activities, consolidating forecasts and quantifications, and developing financial sustainability plans. The Government of Ghana contributed a combination of health funds (World Bank credits) and internal revenue to the procurement of contraceptives, starting with $230,000 in 2003 and adding $1 million in 2006.

- *Georgia*—not a DELIVER country—made a significant commitment to CS following the country's participation in a DELIVER-sponsored conference in Bucharest in March 2005. Until that time, the country had a policy in place that restricted family planning services provision to a relatively small number of care providers called *reproductologists*. After reviewing Romania's experience with general practice (GP)-based reproductive health services in rural areas, Georgia decided to adopt a similar model. In so doing, it used a change in human resources policy to significantly expand the number of health facilities where contraceptives could be dispensed. Subsequently, a Romanian expert identified by DELIVER helped design Georgia's contraceptive distribution system. Concomitant to this development, USAID began supplying contraceptives for rural and urban facilities; the result was that both the service and product supply in Georgia were greatly strengthened.

Total market approach: The most concrete manifestation of the total market approach is market segmentation analysis. This marketing tool divides a country's current and potential contraceptive users into sub-groups with specific characteristics and family planning needs. These characteristics can include age, education, geographic location, and wealth. The primary purpose of market segmentation analysis is to help public-sector policymakers become more aware of the roles and advantages of different sources of contraceptives. Not all contraceptive users can or will use public sources of supply. Private pharmacies, social marketing outlets, NGO providers, and commercial distributors all play important roles in reaching market segments underserved by the public sector. For example, pharmacies are the most important source of contraceptives for newlyweds in Bangladesh, a segment of the population not well served by public facilities.

The recognition that the public sector is not the only provider of family planning methods is a prerequisite for expanding supply options for contraceptive users. Market segmentation analysis is most effective when this awareness is translated into concrete actions to improve market efficiency and expand family

planning product availability through coordination and partnership between the public- and private-sector providers.

- While market segmentation analysis was completed in a number of countries, practical results were mixed. The key constraint appeared to be the willingness of policymakers to accept and use the findings of market segmentation analysis. In Romania, for example, policymakers used an analysis of urban and rural contraceptive users to target public subsidies to rural health facilities. This allowed the private sector to expand its supply in urban areas without competition from subsidized public-sector products. In *Nicaragua*, the Social Security Institute recognized from market segmentation data that its beneficiaries, instead of receiving contraceptives as part of their insurance-covered benefits package, were going to MOH facilities instead. Social Security has now made efforts to expand contraceptive supplies at its facilities.
- Market segmentation facilitates making adjustments to optimize responses to demand. Total market approaches can also be the focus on supply side issues. In 2004, *Peru's* MOH, in collaboration with UNFPA, conducted a study to identify the best available prices for the four contraceptive products that the family planning program procures. Condoms were not procured that year because sufficient stocks remained from previous years. For IUDs, the UNFPA price was far lower than prices available on the local market. The local and UNFPA prices for the three Depo-Provera options were identical. The MOH bought both products from the UNFPA. However, the price of the oral contraceptives used by the public sector was significantly lower in the local market, even after including costs of distribution to SDPs, a service not offered by UNFPA. Therefore, for 2004, the MOH procured oral contraceptives locally, thereby achieving significant savings. The supplier was ESKE, the local representative of the Indian company FamilyCare. The entry of companies like ESKE into local markets has great potential to increase competition among suppliers, and thereby yield better prices.

Diversification of funding: For many years, public sector programs relied on one or more donors to provide their contraceptives. As noted previously, a future funding gap as large as $140 to $210 million was projected. Preliminary analysis suggested that since this projection was announced in 2001, donor funding increased at less than half the annual rate that would have been required to resolve the problem. Because of this, the diversification of funding sources, that is, the securing of financial alternatives to traditional donor grants, was probably the most urgent of many CS challenges. DELIVER worked to define this challenge as concretely as possible; this was a first step toward working for solutions systematically across countries.

One output of this work was a simple classification of actual and potential funding alternatives that included global funds, sector wide approach (SWAp) funds (development bank loans and direct budgetary support), earmarked national budget lines, third party private providers, and households. A second output was a scheme for classifying countries according to the degree of diversification they had achieved. There are five classes ranging from *high donor dependency* to *private sector* and *household funding,* the largest source. DELIVER has also gathered information for classifying 24 countries. See table 2 for the results of this work. This approach has the advantage of providing a global summary for the state of affairs while also characterizing individual country situations. The examples below show how two countries responded to this particular challenge.

Table 2. Classification of 24 Countries by Diversification of Contraceptive Funding

Country/Classification	Sources				
Groups	**Donated Commodities**	**SWAp Funds**	**Budget Line**	**Household Income**	**Private CPR**
A: High donor dependency	Public sector dependent on commodity donations (over 90%)	Not used yet	None or limited	Small contribution/ market	
• Benin					4.0
• Burkina Faso					2.3
• Cameroon					4.8
• Ethiopia					1.4
• Mali					3.7
• Nigeria					6.5
• Rwanda					2.0
B: Still donor dependent but greater household funding and more government input	Less dependency in relative terms on donations than the first group but still receiving important commodity donations (over 80%)	Being increasingly used	Limited but increasing	Larger proportion of household contribution	
• Bangladesh					20.8
• Ghana					11.1
• Nepal					4.6
• Tanzania					5.4
• Uganda					12.5
C: Less donor and government funding with more private-sector contribution	Some donations but phasing out (between 30–80%)	Being increasingly used	Some funding	Significant household contribution	
• Bolivia					14.8
• Guatemala					19.2
• Honduras					30.2
• Paraguay					41.6
• Nicaragua					23.9
D: More balanced public and private contribution	None or limited (5–30%)	No	Yes	Varied contribution	
• Chile					n/a
• Peru					10.9
• Egypt					27.7
• Jordan					25.8
E: Private-sector and household funding the largest source	Phased-out or no commodity support (less than 5%)	No	Limited local	Very high relative to the previous groups	
• Georgia					15.8
• Kazakhstan					14.0
• Ukraine					na

- *Ghana,* in 2002, established an Inter-agency Working Group on Contraceptive Security (ICC/CS). ICC/CS quickly evolved into an effective mechanism for advocating, planning, and implementing contraceptive security strategies. One of its early accomplishments was quantifying a $2.4 million gap between the financing actually available for contraceptives and the projected needs. Led by the MOH and the Ghana Health Service, the ICC/CS has taken on the work of forecasting and coordinating financial inputs. Among the specific initiatives are the use of World Bank SWAp funds, with procurements by contracted agents; establishment of a line item for contraceptives in the regular government budget; and reaffirming bilateral funding from USAID and DFID and multilateral funding from UNFPA. The funding gap has been eliminated for 2005; plans are in place for a mid-term strategy to expand contributions from the commercial and social marketing sectors.

- *Guatemala,* similar to other LAC countries, is in an advanced stage of donor phaseout; in 2001, USAID ended all contraceptive donations except IUDs. In March 2002, the MOH signed an agreement with UNFPA under which the UN agency—using funds from Holland and Canada—would donate 100 percent of the public sector contraceptive needs. In turn, the MOH would deposit in a joint bank account an amount equivalent to a specified percentage of the total donation for each year (5 percent of the total donation in 2002, 20 percent in 2003, 30 percent in 2004, 40 percent in 2005, and 45 percent in 2006). This money will go toward creating a fund that will be used to purchase contraceptives when donations end in 2008, as well as to improve the public sector supply chain. It is expected that by 2008 the government of Guatemala will have enough funds to cover 100 percent of their contraceptive needs. However, in 2008, the government will also need to allocate enough funds to cover 2009.

Emphasis on procurement. Another activity that became prominent in country CS plans was improving the efficiency of public sector procurement. Certainly, procurement is a basic logistics function, but there was less demand during the FPLM years than there was during DELIVER. No doubt this is related to the shifting of mandates from helping ministries take good care of their donated contraceptives to helping ministries develop options for replacing the declining donor contribution.

Areas that typically need attention include strengthening planning through improved product selection and forecasting, guaranteeing transparency, and working with qualified procurement agents. The following two examples show how DELIVER assisted with procurement.

- *Nepal:* As donors grappled with the continuing funding gap for contraceptives, national leadership and coordination efforts supported by DELIVER helped identify strategies to reduce the commodity gap. Through its own procurement unit, with technical support and partial commodity financing from KfW, Nepal was able to obtain prices on the international market for contraceptives below the unit cost obtained from donor-supported procurement agencies. A procurement and pricing analysis, conducted by Nepal's Logistics Management Division (LMD), demonstrated the benefits of central government procurement, which has been able to obtain quality, low-priced contraceptives from the growing South and South-East Asian manufacturing market. The MOH has also established a budget line item for contraceptive procurement that it is increasing at an annual rate of 8 percent. The net result of the shift toward MOH procurement has been an increase in local capacity and increased funds for further procurements. Nepal has also recently moved toward a sector wide basket funding mechanism for health, enabling it to draw on World Bank credit for contraceptive procurements.

- *Jordan*: Through the FPLM project, USAID made a significant investment to improve Jordan's contraceptive distribution system. This work took place from January 1997 to December 1999. DELIVER assisted in the design, testing, and roll-out of a new system. Overall, the intervention was so successful that technical assistance was terminated. All indications are that the MOH continues to competently operate the system. However, a new problem arose when USAID announced in March 2004 that it would terminate commodity donations. At this point, DELIVER was invited to provide

narrowly targeted technical assistance for upgrading the ministry's capacity for procuring contraceptives. The work consisted of developing a three-year phaseout plan for USAID donations, revised procurement guidelines, on-the-job training in quantifications skills, and preparing the specifications for the impending condom procurement. As with the distribution system, the transfer of technology was successful. In 2006, the ministry began successfully executing contraceptive procurements without outside assistance.

General supply chain improvement. As it was under the FPLM projects, work on general supply chain improvement was a central focus under DELIVER. This included providing assistance for physically improving warehouses, creating and maintaining distribution systems, forecasting, procurement (as noted above), management information systems, and evaluation. Most important, it also included work to adapt supply chains to important HSRs, such as *integration* and *decentralization*. The following section of the report provides details and examples for work in this area.

HUMAN CAPACITY DEVELOPMENT AND LOGISTICS SYSTEM IMPROVEMENT

RELATIONSHIP BETWEEN CAPACITY BUILDING AND SYSTEM IMPROVEMENT

Human capacity building is another inclusive concept which, if defined broadly, could include advocacy, behavior change communications, system design, curriculum development, training, supervision, monitoring, and evaluation. DELIVER did significant work in all these areas; however, for this discussion, priority is given to those aspects of human capacity building that contribute directly to country-level logistics system improvement, as this was the contract's emphasis.

As with the FPLM projects, DELIVER always had a group of staff whose work focused not only on specific methods for transferring logistics technologies, such as training and supervision, but also on ensuring that logistics improvement activities were designed and implemented in ways that continually enabled and reinforced good logistics performance.[4] As a result, almost any country work plan that included system improvement activities had a high human capacity building content.

Many of the products called for in the work plans were directly related to human capacity building, including—

- *process maps,* which are detailed assessments of how logistics activities are carried out before changes for improvement are proposed. The process maps provide important insight into obstacles to good system operations and into problems that should be avoided in the future.
- *system designs* for forecasting, procurement, inventory control, storage, transport, and an LMIS that incorporate either manual or automated features and are as simple as possible to document, train, operate, and evaluate
- *standard operating procedures* (SOPs) (formerly manuals) that document the correct steps for systems operations
- *job descriptions* that clearly present the minimum list of essential tasks that must be carried out by staff members to ensure that the systems will operate as intended
- *job aids* or well-designed summaries that remind workers at a glance of the correct steps to take for important tasks; they are often desk top or wall-posted checklists
- *training materials* of various types including curricula, trainers' guides, participant guides, role play summaries, and simulations
- *supervisory materials,* including special training for good supervision practices and checklists for monitoring performance

[4] Historically, we have called this performance improvement, but can also be called human capacity building, the term used in the contract and in this report.

- *evaluation methods* to measure the effectiveness of training and the correct or incorrect operations of systems that have been implemented; in some cases evaluations may trigger additional work on every one of the points listed here.

PERFORMANCE MONITORING

Performance monitoring is related to, but distinct from, quality monitoring. Quality monitoring focuses on technical content and adherence to practices of proven efficacy. Performance monitoring, on the other hand, focuses on how well logistics systems actually perform before, during, and after implementation of changes intended to produce improvement. For performance monitoring, building on experience from FPLM, DELIVER developed two tools—one qualitative and one quantitative. The qualitative tool is the Logistics System Assessment tool (LSAT), and the quantitative tool is the Logistics Indicator Assessment Tool (LIAT).

- The LSAT is an instrument used to gather the opinions of key informants on the performance of nine logistics functions. The results provide qualitative descriptions of the status of the nine functions, including the LMIS, product selection, forecasting, procurement, inventory control, warehousing, product use, financing, and organization and staffing. By assigning numerical scores for how well these functions are carried out at given points of time overall system performance can be determined.

- The qualitative assessment provided by the LSAT requires supplementation with empirical measures of logistics systems performance. The LIAT is used to gather these measures in warehouses and SDPs using sample surveys, with data collected through shelf-checks and retrospective document review. The indicators measured include product availability, frequency of stockout, storage conditions, data quality for inventory control, training, and supervision for logistics system operators.

DELIVER used the tools extensively across the country portfolio, performing 37 LSAT measures in 22 countries and 36 LIAT measures in 19 countries.

EXAMPLES OF COUNTRY WORK IN SUPPLY CHAIN IMPROVEMENT

The scope and ambition of DELIVER country programs varied greatly. Some countries, such as Rwanda and Jordan, focused narrowly on vertical contraceptive distribution systems. Others, such as Bangladesh, retained their primary focus on family planning, but worked extensively with sustainability related supply chain functions, including procurement or funding diversification. Still other countries, such as Ghana, Uganda, and Kenya, retained a focus on family planning but also worked with other health programs—HIV/AIDS, TB, or malaria. A few countries, for example, Zambia with its HIV/AIDS focused work, were entirely outside family planning. In some cases, for example, in Uganda, Tanzania, Malawi, and Ghana, DELIVER assisted with adapting logistics systems to important HSRs, such as integration or decentralization.

The main determinants of program focus and scale were the scopes of work provided by USAID missions and the size of the investments they chose to make. In Uganda, which covered all but one of the possibilities summarized above, the mission allocated $9.3 million over a six-year period. In Rwanda, where the narrow focus was appropriate for a fragile government recovering from a civil war, the allocation totaled $1.7 million over a five-year period. In some situations, such as the Central Asian Republics, the regional mission opted for assessments only, with no design or implementation component, and a correspondingly modest budget of $200,000 for a one-time assignment carried out over a six-month period.

Following are several examples of country interventions and the types of human capacity development and supply chain improvement activities, including—

- *Tanzania,* in 2002, launched an ambitious plan to improve efficiency by integrating the LMIS and storage and distribution of a number of vertical systems, including essential drugs, contraceptives, STI supplies, malaria control supplies, and laboratory supplies. Intentionally excluded were the Expanded Programme on Immunizations (EPI) and TB programs. DELIVER helped the MOH off to a rational start with a process mapping exercise that specifically identified factors that would complicate the integration. As a result, before the integration took place, the MOH developed a new system design that included improvements and simplifications for ordering, receiving, and issuing; disbursing funds at the central level; managing funds at local levels; aligning transport schedules; reporting; and special products handling. One special feature of the new design is a mechanism for prioritizing products into essential products that must always be in stock, and additional products that, while important, may be ordered and stocked on a discretionary basis. The new system was pilot tested, evaluated, and revised. The test results were good, and the transparent design and evaluation process gave confidence to other donors, such as DANIDA, which provided significant funding for the national rollout.

- In *Rwanda* DELIVER's work reflected the USAID Mission's desire to directly support one important program—family planning—with the design and implementation of a vertical distribution system. Prior to 2002, contraceptive distribution was plagued by problems that included bad storage conditions and a limited choice of products at SDPs—often only one or none. At higher levels of the system, unfilled logistics positions were associated with stockouts at district levels. A design workshop held in 2002 produced consensus on how to upgrade storage, stock control, minimum/maximum inventory control mechanisms, and the LMIS. Following the workshop, DELIVER assisted with preparing SOPs for district and SDP levels, as well as job aids for staff with logistics responsibilities. DELIVER assisted the MOH in training or orienting 546 staff members at SDP, district, and national levels.

  Such important negative indicators, such as stockouts and product expirations, improved dramatically. As often happens, concrete and visible progress in improving logistics for family planning stimulated interest in upgrading logistics in general. Subjectively, it appears that better storage and inventory control for contraceptives resulted in limited improvements for other programs—such as essential medicines—without an additional investment. The MOH filled all central-level logistics positions and created a logistics committee to coordinate work for all programs that required improved service.

- *Bangladesh,* with years of assistance from USAID and other donors, long ago addressed its public-sector contraceptive distribution problems. Extensive training and retraining at the strategic district store level resulted in good storage, inventory control, and an LMIS. During DELIVER, a total of 2,635 staff members at all levels received training on these systems. Training in monitoring and supervision reached 105 supervisory staff members. Although DELIVER continued to provide inputs into contraceptive distribution, the project also made important contributions elsewhere.

  An activity with considerable measurable impact was assisting the MOH with upgrading its procurement practices. This came about because, as the MOH attempted to pursue a funding diversification strategy, it found that it had neither the staff nor the procedures in place to carry out transparent international competitive procurement practices. With key input from DELIVER's partner, PATH, newly developed SOPS and training materials were used to train 489 desk officers from the directorate generals of both health and family planning in internationally accepted procurement practices. One concrete result, as noted above, was a reduction in unit costs, in some cases for good quality Indian contraceptives, a savings of $17.2 million for one 2004 procurement.

  Another new departure in Bangladesh was DELIVER's support in improving NGO contraceptive distribution systems, training 621 staff in logistics management systems.

One important misadventure taught the project a valuable lesson. The MOH's loan agreement with the World Bank called for integration of the health and family planning logistics systems. Although it was evident that the program's logistics component had been poorly planned, after a request from the MOH, DELIVER agreed to help out—or at least try. From 2000 to 2003, DELIVER carried out an assessment, developed an SOP for integration at the district level, and helped train staff and merge storage and inventory control systems in more than 483 districts.

DELIVER's first contribution was to advise the MOH that, optimistic Bank reports not withstanding, integration was extremely unpopular with the rank and file of health and family planning workers, and there was considerable resistance to this reform at district and SDP levels. At least one law suit and one national election later, the MOH cancelled the integration plan. The lesson to be learned was to recognize the risks of investing in reforms that look good on paper, but which are not, in fact, politically feasible. As will be seen below, however, when planned carefully and implemented incrementally, integration of logistics functions can be made to work and can bring benefits to all stakeholders.

- *Ghana's* MOH in 2001**,** asked DELIVER to assist with a broad assessment of four vertical logistics systems: contraceptives, essential drugs, expendable medical supplies, and vaccines. Process mapping revealed that many procedures were either duplicative, unnecessarily time consuming, or both. Based on this analysis, the MOH decided to integrate the management of contraceptives, essential drugs, and expendable medical supplies. For contraceptives, this resulted in a reduction of tiers in the distribution system from four to three. One of the key challenges for the integration was forecasting, the specialized requirements of which vary by product category. DELIVER worked with the procurement unit to create schedules and routines for coordinating the work of different health program specialists to ensure that the preparation of comprehensive forecasts could be synchronized to support procurement schedules.

  DELIVER supported these efforts by creating SOPs and training 1,055 staff at all levels to operate the integrated distribution system. To promote sustainability, DELIVER also developed a comprehensive commodity security training program for central-level staff that focused on forecasting, procurement, and overall logistics systems management. In addition to on-the-job training, six key staff attended DELIVER's international course. The overall result of this particular performance improvement activity was to create at the MOH a cadre of logistics resource staff to support operations at district, regional, and central levels.

  In addition to supporting the major thrust towards integration, DELIVER also assisted with design and implementation of systems for HIV/AIDS products management. This included training staff from 21 ARV sites in LMIS, and ARV and HIV test kit quantification. Due to the special nature of its products, the HIV/AIDS distribution system was set up as a vertical one, with the intention of merging it with the larger system later. The MOH also requested assistance with logistics support for laboratories, and DELIVER completed a needs assessment for work in this area.

  With so much going on, it would be easy to overlook the fact that DELIVER continued to support contraceptive logistics, preparing the MOH to use World Bank funds to manage its own procurements.

- In *Uganda,* DELIVER's work covers all of the items described for Ghana and much more. DELIVER assisted with almost every public health logistics activity imaginable, beginning by integrating contraceptives, general essential drugs, STI drugs, malaria drugs, OI drugs, HIV and malaria test kits, and general laboratory supplies into one system. In addition, DELIVER assisted in setting up specialized partially vertical systems for TB drugs, ARVs, and malaria bed nets. These efforts covered the four functions of the logistics cycle—selection, procurement, distribution, and use—and

all the human capacity building and logistics improvement activities described above for other countries.

It is difficult to summarize any country program in a small space, but this is especially true for Uganda because of the size of USAID's investment and the multiplicity of programs receiving simultaneous support. Accordingly, we have developed a case study for Uganda (see appendix 4)**.** What is discussed here is a relatively recent development that is dramatically affecting work in Uganda, as well as other countries in Africa. We refer to the enormous increase in commodity inputs for donors' highest priority projects, which recently have been immunizable diseases, HIV/AIDS, and malaria.

Uganda received commodity inputs from bilateral donations, World Bank procurements, and GFATM grant procurements, plus, very recently, PEPFAR and the President's Malaria Initiative (PMI). Furthermore, service targets were growing significantly. To give a sense of the scale and velocity of increase, note the following:

- Between 2001 and 2006 the value of essential drugs that the MOH distributed grew from $18.7 to $84 million. Over the same period, the value of TB drugs increased from $1.46 to $3.22 million. Vaccines increased from $2.36 million to $17.7. With the introduction of polyvalent vaccines, ARVs increased from zero to $16 million. During the same period, the increase in contraceptive funding was more modest, but still significant at 20 percent.
- The MOH served no ARV patients in 2001, 2,225 in 2004, about 35,000 in June 2006, and a target for 2007 of 56,000. From 2004 to 2006, the number of sites providing ARVs grew from 26 to 220.
- The number of condoms distributed rose from 35 million in 2001 to 80 million in 2006.
- During the same period, DELIVER assisted with quantifications and other procurement-related activities for the GFATM, the World Bank, and PEPFAR, with a total value in excess of $250 million.

These examples represent orders of magnitude increases in the MOH's logistics requirements. It is not so much that they include problems that have not been seen before, but rather they bring along every problem anyone has ever seen and all at the same time. Examples of interventions that DELIVER supported to manage the scale-up included—

- As programs expanded, the National Medical Store (NMS) was working to capacity and struggling to respond to emergency orders from the field. An interim solution to this problem was to establish an *emergency order team* to respond to life-threatening situations that included ARVs, TB drugs, or AL.
- The long-term solution to the problem lies in continuing to upgrade the LMIS and distribution capacities of the integrated and vertical systems that now serve the MOH. Some concrete interventions were to design a logistics system for HIV tests and ARV drugs, and to develop clearly documented SOPs for both systems that assisted supply chain managers and officers at all levels to understand and execute their logistics responsibilities. Another significant contribution was the implementation of a computerized LMIS at the central level to manage logistics information for HIV test kits and ARV drugs. The computerized LMIS, which was a version of *Supply Chain Manager* software customized for the Uganda systems, is housed in the MOH's Resource Center. It facilitated rapid aggregation and analysis of logistics data (consumption, stock on hand, and adjustments), which, in turn, enabled the MOH to make on-time decisions and inform the NMS on resupply quantities.
- Surges in volume can be managed better when system operations become more efficient. Introducing bar coding and shrink-wrapping should improve the security and tracking of stock—especially high-

value items, such as ARVs—as they move through the system. Though bar coding failed in a previous attempt, the potential benefits may warrant another try. A related but distinct effort is the harmonization of the forms and LMIS procedures for all the different public-sector and NGO logistics systems. This was particularly important for ARV drug management. All LMIS records and reports were harmonized for the MOH sector and for the Joint Clinical Research Centre (JCRC), the largest non-government provider of ART services. Some facilities received ARV drugs from both the MOH and JCRC, and given that the same pharmacist manages the same supplies separately, harmonizing the forms and procedures greatly facilitated their ability to perform this duty.

- Customs clearance—always a headache—becomes a bigger headache when funding increases and procurements increase the volume of imports. In human resource terms, NMS was not well staffed or organized to handle the surge in work. Focused support to create a cadre that understands customs clearance requirements can improve the situation; DELIVER helped the NMS begin the process of creating such a staff.

Beginning in the mid-1990s, with help from the Family Planning Logistics Management project and later the DELIVER project, Bolivia implemented a number of governmental reforms that decentralized health sector financial and managerial responsibility to the 311 municipalities:

- In 1999, the Maternal and Infant Health Insurance program was expanded to cover ninety different services, and LPP revenues doubled, from 3.2 to 6.4 percent.

- In 2002, with DELIVER's assistance, the now Universal Maternal Infant Health Insurance (SUMI)—was established by law. Supplies provided by national health programs (including contraceptives) were included in service benefits to be reimbursed with SUMI funds.

- In January 2006, in accordance with Resolution 0032, Article 2, SUMI, again with help from DELIVER staff, was expanded to include all girls and women between five and sixty years of age. It also covered annual pap smears for the prevention of uterine cancer, treatment of precancerous lesions, and mutually agreed-to voluntary contraception. Contraception will be offered to all women of reproductive age.

These reforms resulted in the transfer of responsibility, authority, and funding for most pharmaceutical purchases to health establishments and/or municipal governments.

- Apart from a recently completed CS assessment, DELIVER did not work in the *Central Asian Republics*, but the region still merits a brief mention because JSI Logistics Services carried out supply chain–related work in the region using DELIVER's lessons learned, thus reducing costs to the client. In Uzbekistan, Tajikistan, Turkmenistan, and Kyrgyzstan, JSI collaborated with Project HOPE to implement a TB drug distribution system. In a situation where the quantity of work to do greatly exceeded the funds available, JSI designed and implemented a simple, locally appropriate LMIS that was based on models developed elsewhere. In completing this work, the JSI logistics staff consulted the DELIVER LMIS and performance improvement staff to ensure that the work met DELIVER's quality standards.

  Project HOPE and the National TB Center staff greatly appreciated the support for training, in particular, and they took the transfer of technology very seriously, which enabled them to work with increasing independence. As a result, USAID's Central Asia TB Control project made significant progress in a key area of logistics and were able to contain costs by using DELIVER-developed methods and products.

This completes a review of DELIVER's work in a sample of countries to illustrate the spectrum of DELIVER interventions in Rwanda, Bangladesh, Ghana, and Uganda, plus DELIVER's influence in Central Asia. Country reports for all countries in the DELIVER portfolio that received substantial

assistance will be available on the DELIVER website. However, this sample clearly demonstrates the interplay between the human capacity development and logistics system improvement elements at the country level, which, when taken together, were the heart of the project.

NEW CHALLENGES

The country summaries mentioned above note some of DELIVER's work to improve logistics for the closely related areas of HIV/AIDS and laboratory services and the work in the *fragile state* of Rwanda. However, these passing mentions do not do justice to the volume and complexity of work carried out in these critical and growing program areas.

- Logistics support for HIV/AIDS and laboratories were both new challenges—neither was a focus under the FPLM projects. DELIVER's progress in both areas reflects well on the project's ability to start from zero and increase work substantially in response to demand.
- When DELIVER began, USAID had yet to develop its *Fragile State Strategy*, but the project knows now that some of the countries in the DELIVER portfolio fall within this category. In addition to Rwanda, the countries include the Democratic Republic of Congo (DRC), Nigeria, and Zimbabwe.

HIV/AIDS

At the start of the DELIVER project, the landscape of HIV/AIDS programs was vastly different than it is now. Few national HIV/AIDS programs existed in many of the countries where DELIVER worked, and, if they did exist, they were under-resourced. The majority of HIV/AIDS interventions in countries were pilot projects—none had been taken to scale and few had dedicated logistics components. As a result, the project's experience working with HIV/AIDS supply chains was extremely limited. DELIVER's first forays into HIV/AIDS-related technical assistance was in Tanzania in 2001, where, due to our long-standing and successful logistics support for contraceptives, the mission requested support for HIV test kits and STI drug quantification. Many of the project's initial HIV-related supply chain work was limited to HIV tests, given that treatment was still considered unaffordable and impossible for developing countries to consider. However, in 2003, with the launch of several global initiatives—the Global Fund for AIDS, Tuberculosis, and Malaria; WHO's *3 by 5* strategy; and the President's Emergency Plan for AIDS Relief—resource-poor countries, for the first time, began to have access to the financial and technical resources needed to provide ARTs to thousands of people living with HIV/AIDS. Implementation of large-scale treatment programs, however, was fraught with technical challenges, especially in countries that were hardest hit by the epidemic.

Because of DELIVER's experience in helping to strengthen supply chains and improve product availability for contraceptives, essential medicines, and HIV tests; and its model of collaborative and consultative system design and implementation; DELIVER increasingly became a partner of choice for a number of USAID Missions and MOHs. The project provided technical assistance and support in supply chain management for emerging national HIV/AIDS programs, all of which were under extreme political pressure to scale-up rapidly. Between 2002 and the end of September 2006, DELIVER provided support in the supply chain management of HIV/AIDS commodities to 18 countries, including Côte d'Ivoire, El Salvador, Ghana, Guyana, Haiti, Honduras, Kenya, Malawi, Mozambique, Nepal, Nigeria, Rwanda, South Africa, Tanzania, Uganda, Ukraine, Zambia, and Zimbabwe. A number of these countries only requested short-term, isolated interventions for one or more logistics functions, or for just one category of commodities. In eight of the countries, however, DELIVER designed logistics systems for HIV tests and/or ARV drugs and provided support in all aspects of implementation.

Given the complex commodity funding and partner environment in many of these countries, DELIVER's approach was to build on and leverage existing supply chain approaches that had previously worked well, and then to continually adapt them to meet the challenges posed by the changing environment. DELIVER

tapped into another strength—its ability as a centrally funded project to (1) provide standard approaches that countries could use as a template to adapt, simultaneously test, and learn new approaches across a variety of countries and settings; (2) identify emerging promising approaches; and (3) rapidly share those lessons with other countries further behind in the process of system design and implementation.

For example, DELIVER developed two versions of *Guidelines for Managing the HIV/AIDS Supply Chain* (DELIVER 2006), the equivalent of *The Logistics Handbook: A Practical Guide for Supply Chain Managers in Family Planning and Health Programs* (John Snow Inc./DELIVER 2004), but for HIV/AIDS commodities. Published on CD-ROM, the guidelines were easily accessible by country counterparts, and could be updated quickly and affordably. The guidelines comprised eight documents, each addressing different components of the logistics management cycle. The inventory management document included sample templates for LMIS records and reports for managing HIV tests and ARV drugs that could be downloaded by program or supply chain managers and adapted to the country requirements. More than 3,000 CDs have been distributed to MOH and NGO partners in over 17 countries; the LMIS forms have been used as models for developing a national LMIS in Nepal, Nigeria, Zambia, and Zimbabwe.

LABORATORY SUPPORT

The scale-up of ARV treatment programs highlighted overwhelming deficiencies in laboratory services, and the process was a catalyst to the start of DELIVER's laboratory logistics support programs. Laboratory services to support HIV programs are required to diagnose HIV, opportunistic infections, and related conditions, as well as for baseline testing and monitoring of patients beginning ARV treatment. Consequently, WHO developed a minimum menu of laboratory test categories for individual countries to determine the specific number and type of tests required to support HIV/AIDS prevention and treatment programs. Although the resulting recommended test menu represented a finite number of laboratory tests, the laboratory supplies (e.g., reagents and other consumables) required to complete each test can increase very rapidly as there are a number of different testing methods that can be used for each test, each requiring its own combination of reagents and consumables. The management of potentially thousands of laboratory supplies introduced a level of complexity that had far-reaching implications for supply chain logistics.

DELIVER's work to support laboratory services began with assessments of laboratory systems. Initially, survey instruments to determine ART readiness, including a dedicated laboratory section, were used to assess laboratory system readiness in Zimbabwe, Ghana, Tanzania, and Burkina Faso. By mid 2004, the process evolved into a comprehensive assessment tool designed specifically for laboratories: the *Assessment Tool for Laboratory Services (ATLAS)*. The ATLAS was fully implemented in Ghana and Uganda, for a total of 560 laboratory sites, and it was adapted in Kenya and used to assess 16 laboratories.

As is true of most logistics activities, assessments provide the foundation from which additional technical initiatives are identified and built. The same is true of laboratory assessments. Each of the assessments executed by DELIVER resulted in deliberate and targeted logistics interventions that were appropriate within the context of the country or program. In both Uganda and Kenya, assessments were followed by a full-scale logistics system design and implementation, including the creation of logistics SOPs and country-wide training curricula, as well as the execution of system roll-out activities.

Additionally, in Uganda, Kenya, and Zambia, a full quantification of laboratory supplies was also conducted. However, to complete the quantification exercise and to keep the number of commodities required in laboratories to a manageable 250 to 300 products, countries had to standardize the test menus, test techniques, testing equipment, and SOPs. DELIVER facilitated this work by managing a collaborative standardization process among relevant country stakeholders; taking a holistic approach to the strengthening and management of laboratory services.

Finally, as a result of the collaborative field work undertaken during the course of the project, DELIVER institutionalized the knowledge gained from these activities by producing extensive, strategic technical documents, including *Guidelines for Managing the Laboratory Supply Chain* (Felling et at. 2006), *Lessons Learned in Managing Laboratory Supplies* (DELIVER 2006), *Guide for Quantifying Laboratory Supplies* (Diallo 2006), and the *Assessment Tool for Laboratory Services* (Diallo 2006) , and by producing numerous posters and presentations for industry meetings and conferences, sharing the project's knowledge and experience in a global forum.

WORK IN FRAGILE STATES

USAID elaborated its Fragile States Strategy in 2005. While DELIVER was awarded in 2000 and was not given an explicit focus, the project did work in a number of on fragile states (Nigeria, Rwanda, Zimbabwe, and the DRC). The fourth USAID Strategic Priority in the Fragile States Strategy is to "Develop the capacity of institutions that are fundamental to lasting recovery…" (USAID 2005) e.g., health care. DELIVER, by focusing on building logistics management capacity to ensure the effective provision of health services, contributed to this strategy. DELIVER also supported this strategy both in post-conflict settings like the DRC and Nigeria and in a country currently in crisis, Zimbabwe.

Since 2001, the DRC has been struggling to emerge from a post-conflict state. The end of the twentieth century was extremely chaotic in the DRC (then Zaire). "After thirty-two years of dictatorial rule under Mobutu Sese Seko, a war brought Laurent Desire Kabila to power in early 1997. …a second war pitting President Kabila against his former key allies, Rwanda and Uganda, [began] in mid-1998. Despite a peace agreement signed in Lusaka during the second half of 1999, instability, large-scale human rights abuses, and multiple humanitarian emergencies continued into 2001…The assassination of Laurent Kabila and his replacement by his son, Joseph, in early 2001 ushered in a more hopeful period of increased movement towards peace, greater stability, and improved economic management." (USAID 2002) However, Eastern Congo continued to experience humanitarian emergencies. Challenges working in the DRC in this period included disruption of in-country transportation, open conflict, and the risk of emergency evacuation.

DRC activity came late in the DELIVER project cycle. The project received funding in 2004 to support a reproductive health logistics initiative managed by a local NGO, SANRU, which has piloted family planning interventions in 22 zones. Initial training in reproductive health logistics was so well received that it led to additional resources being made available by USAID and, by CARE in 2005, for system assessment, logistics system design activities, and the implementation of capacity-building strategies that included training of supervisors and trainers, all of which have contributed to improved contraceptive availability in the target zones, as well as increased enthusiasm by project implementers.

Nigeria's short-lived civilian rule was crushed in 1993 when General Sani Abacha took power in a military coup. Abacha employed violence on a wide scale to suppress civil unrest and was considered by both Nigerians and foreign observers to be extremely corrupt. In response, USAID decertified the government of Nigeria for development assistance in 1994. While humanitarian assistance continued, USAID ended its support to the Federal MOH family planning program. Abacha's death in 1998 and Federal elections in 1999 created an opportunity for a return to civilian rule and a resumption of broader USAID development assistance to the public sector. Challenges working with the government in 2001 included travel restrictions due to civil unrest; poorly defined implementation responsibilities across a huge, multi-tiered administrative bureaucracy; and a strained relationship between the Government of Nigeria and the largely pessimistic donor agencies.

In 2001, DELIVER conducted its first assessment of the Federal MOH family planning program. Over the next five years, the project engaged with the government of Nigeria (GON), as well as other national and international stakeholders, in a broad program designed to strengthen both reproductive health policy and to build logistics management capacity to ensure the availability of contraceptives in all 36 states. By 2003, DELIVER had trained more than 2,000 health service personnel from 12 states on the National

contraceptive logistics management system (CLMS). By 2004, through the combined efforts of the GON, UNFPA, USAID, and its contractors, more than 10,000 ministry staff had been trained on the CLMS. A mid-term evaluation in 2005 indicated that contraceptive availability increased between 2002 and 2005; storage practices and the availability of stockcards also improved during this time. In 2004, largely because of the perceived success with contraceptive logistics, DELIVER was asked to begin working with the National AIDS and STI Control Program; by 2006, the project had helped them build and implement logistics systems for HIV/AIDS commodities.

In contrast to the DRC and Nigeria, Zimbabwe is currently in crisis. "Political and economic policies have resulted in hyperinflation, high unemployment, shortages of food and fuel, and widespread hunger and disease. The country's once excellent public health system is declining, and quality health services are sparse. Many international donors have discontinued their development programs, leaving national health interventions underfunded." Political instability has also exacerbated a brain drain in all sectors, and as highly qualified personnel find employment in other countries, critical services are often understaffed.

Another challenge for DELIVER, as indeed for all USAID projects operating in Zimbawe, is to support social sector service delivery without associating too closely with the unpopular policies of the current regime. However, in Zimbawe, the government of Zimbabwe provides a large percentage of health services (e.g., over 75 percent of family planning services according to the 1999 DHS). In 2003, DELIVER worked with the Zimbawean National Family Planning Council to establish the highly innovative Delivery Truck Topping Up (DTTU) system for condoms. The DELIVER strategy was to work with local stakeholders to implement programs that sought to demonstrate measurable short-term impact by reducing frequency and duration of stockouts of contraceptives and, later, HIV/AIDS program commodities. These activities operated to support the broader goal of health systems strengthening within the MOHCW (see table 3).

Table 3. Specific DELIVER Interventions, 2002–2006

Strategic Intervention	DRC	Nigeria	Zimbabwe
Assist the government to ensure the provision of basic public health services. Build technical capacity for logistics management within institutions responsible for healthcare.	• LMIS, inventory control system design • Supervisors' training and training of trainers • System Assessment • Forecasting training.	• LMIS and Inventory Control System redesign (streamlining) • Service providers trained on CLMS • TOT for master trainers • Training on forecasting and PipeLine software • Training on health commodity supply chain management • Supervisor training for state and LGA FP coordinators	• Procure and distribute USG funded ARV drugs for selected phase I sites. • Provide technical assistance and strengthen public sector capacity in supply chain management of HIV/AIDS commodities in the national program. • Strengthen sites' ability to manage ARV medicines.
Emphasize displaced persons or other vulnerable groups.	Work focused on South Maniema,a conflict-affected region.	N/A	In the current state of crisis, the entire population may be vulnerable, particularly PLWHA.

Table 3. Specific DELIVER Interventions, 2002–2006 (continued)

Strategic Intervention	DRC	Nigeria	Zimbabwe
Develop close partnerships with other donors and international organizations to enhance coordination.	DELIVER worked in close collaboration with CARE and SANRU.	• SPARHCS assessment • Joint action plans • CPT and quantification exercises	Support to the National HIV Care and Treatment Partnership Forum and various technical working groups and subcommittees.
Strengthen or reform policies within institutions responsible for healthcare.	While not a major objective of the project, DELIVER worked with other stakeholders to identify policy issues during an LSAT exercise in 2006.	• CLMS cost recovery strategy • National RHCS policy	Support for policies, including the establishment of a logistics section in the MOHCW and support for decentralization of HIV/AIDS services to rural health centers.

The timeframe for the DELIVER interventions in these countries was relatively short (2–4 years). However, according to the 2005 USAID Fragile States Strategy, "Because those living in fragile states cope with instability and uncertainty by focusing on the near term, short-term measures are critical to meeting their immediate needs and promoting an environment of security. At the same time, the urgent need for short-term measures should also be considered in the context of longer-term efforts required to advance stability, reform, and institutional capacity" (USAID 2005). The DELIVER emphasis on capacity building in this environment conformed unintentionally to this strategy (see table 4).

Table 4. DELIVER Achievements

Strategic Intervention	DRC	Nigeria	Zimbabwe
Assist the government to ensure the provision of basic public health services	• Logistics system in place in South Maniema. • Stockouts avoided in South Maniema. • USAID Mission and their partners trained in different methods for forecasting. • A 2006 study of CARE-supported SDPs indicated: – products available at warehouses and HC – no stockouts on the day of visit – fewer stockouts during the last 6 months compared to 2004	• System designs, SOPs and training curricula for contraceptives, ARVs, and HIV test kits. • Over 2,000 service providers, 99 supervisors, and 40 trainers trained on the CLMS. • % of public-sector facilities with condoms in stock on the day of visit increased from 4% in 2002 to 94% in 2005. • % of storage facilities adhering to good storage practices increased between 2002 and 2005. • % of public-sector facilities with combined oral contraceptives, injectables, and condoms in stock on day of visit was 56% in 2005 compared to 0 in 2002.	• DTTU system distributes [contraceptives] to 99% of all health facilities every trimester; has achieved stockout rates of less than 5%. • ARVs provided in full supply for 500+ patients at the phase I sites. • The phase I ART sites have SOPs and are correctly following national guidelines. • Phase I sites can manage ARVs using project designed forms and procedures.

In Nigeria, the percentage of public-sector facilities with condoms in stock on the day of visit increased from 4 percent in 2002 to 94 percent in 2005.

By working to develop broad stakeholder support for concrete, measurable objectives, DELIVER accomplish much in the context of fragile states. In Nigeria, the percentage of public-sector facilities with condoms in stock on the day of visit increased from 4 percent in 2002 to 94 percent in 2005. In the DRC, contraceptive stockouts were reduced to zero in the CARE-supported sites; in Zimbabwe, a full supply of ARVs was established for over 500 patients, supported by USAID. In Zimbabwe, DELIVER was also able to work with an NGO to establish a highly innovative and effective distribution system—the DTTU—which ensured the availability of contraceptives nationally. Condom stockout rates in Zimbabwe are less than 5 percent in 99 percent of health facilities nationally. "The lesson learned in DTTU is that, even in a fragile state environment with a collapsing economy, commodity security can be achieved with willing donors, accurate product forecasting, and a well-designed and implemented distribution system. Key to the success of the system has been placing control of financial and other resources for the system in the hands of the donors' contractors, rather than with government agencies."

RESULTS

DELIVER's largest input in any country arena was for technical assistance; the intermediate outputs included LMIS system designs or training materials; the main outputs were improved logistics operations of various types. However, the contract is clear that, in terms of impact, the intended result is improved availability of commodities, particularly contraceptives, without setting up many systems or training many MOH staff.

In reality, caution is required when attributing causality for improvements or deteriorations in product availability. For example, a marked improvement in availability of oral contraceptives in a sample of sites following the implementation of an LMIS could be primarily attributable to the recent arrival of a major shipment from a donor and not to improved information flow. Or, a slight decline in product availability following implementation of a stock accounting system could represent a good showing in the context of a generally deteriorating environment at the MOH rather than a poor performance of a new system. Considering these caveats, the evolution of product availability can be assessed in five ways:

By far, DELIVER has amassed the greatest amount of information for contraceptives. For this product category the project considers three approaches:

- comparing baseline and endline measures
- analyzing consumption data from CPTs
- parallels of LSAT, LIAT, and CPR
- financial inputs compared with project outputs.

Because HIV/AIDS and laboratory support were introduced as new challenges for public health logistics, an attempt is made to assess some of the impact of the project's work on product availability. This we do by—

- Review of project outputs in HIV/AIDS product management.

COMPARING BASELINE AND ENDLINE MEASURES FOR CONTRACEPTIVE AVAILABILITY

The clearest way to assess product availability is to compare measures taken early in the project with measures taken later in the project. As noted above, DELIVER developed the LIAT tool to take simple quantitative measures of selected logistics indicators, among which are product availability and stockout

frequency. As noted, altogether the project took 36 LIAT measures in 19 countries. Although the tool has worked well for problem identification, system design, and performance monitoring, it has been much less useful for evaluation because, during the course of the project, changes were made in LIAT's design and in sampling methods, causing a situation where many of the early and late measures could not be usefully compared. In the end, it was possible to develop useful comparisons for only seven countries[5] In preparing this report the project evaluated these data, but for such a small sample of countries no trends emerged.

ANALYZING CONSUMPTION DATA FROM CONTRACEPTIVE PROCUREMENT TABLES

Fortunately DELIVER has more than one option for evaluating product availability. Table 5 shows the trend in the quantity of annual consumption of public-sector contraceptives from 2000 to 2006 for selected countries. The quantity of contraceptive consumption is expressed in terms of thousands of couple-years of protection (CYP). The information is obtained from the CPTs archived in NEWVERN. Although CPTs contain historical consumption data for two years prior to the CPT year, only the consumption data from the year prior to the CPT year is used for this analysis. Blank cells indicate that the CPT for the corresponding reference period is not available.

Only the countries with sufficient data to observe meaningful trends are included in the analysis. The contraceptive consumption information is limited to the public sector because the public sector family planning programs are the major clients for DELIVER's technical assistance activities. Therefore, the change in public sector contraceptive consumption in a country can be partly attributable to the impact of DELIVER.

The analysis shows that in countries where DELIVER provided technical assistance (and where data are available), there is an increase in quantity of public-sector contraceptive consumption.[6] This, in turn, suggests improved product availability on a national basis.

Table 5. Trend in Annual Consumption of Public Sector Contraceptives (in 1,000s of CYP) in Selected Countries, 2000 to 2006

	2000	2001	2002	2003	2004	2005	2006
Asia							
Jordan	140.5	151.1	159.8	170.4	178.3		
Africa							
Ghana	279.6	377.0	330.6	385.6	424.2	403.0	433.0
Madagascar		239.0	273.1		265.1	303.1	
Malawi	361.5	350.7	415.1	503.0	466.6	608.5	
Mali		58.6	90.0	64.1		67.7	128.6
Mozambique		347.8	587.3	331.7		418.8	383.1
Rwanda			40.7		64.9	93.5	155.4
Tanzania	1,242.3	937.5	925.4	1,145.0	978.4	1,311.8	1,573.0
Uganda	531.7	391.6	678.4	250.3	702.9	211.8	919.0
Zimbabwe	1,106.5	1,143.9	1,331.5	1,386.4		1,235.4	1,302.9

[5] Nigeria, Malawi, Rwanda, Mali, Uganda, Ghana, and Bangladesh

[6] The major drawback of this analysis is that some of the historical consumption data reported in the CPTs are actually issues data from central warehouses or, in a few cases, demographic or service statistic estimates, which, as we know, are prone to errors. Nevertheless, when issues data are used to proxy consumption, the logistics advisors take the effort to adjust the final estimates based on best judgment and other programmatic information to reduce the errors.

Table 5. Trend in Annual Consumption of Public Sector Contraceptives (in 1,000s of CYP) in Selected Countries, 2000 to 2006 (continued)

	2000	2001	2002	2003	2004	2005	2006
Latin America							
El Salvador		81.7	121.2	147.5	167.6	172.0	181.9
Guatemala	127.1	148.9	200.7	228.1	224.5	230.5	
Nicaragua	198.9	226.9	220.2	159.0	255.1	299.6	
Paraguay				88.0		138.9	154.8

Source: 2001 to 2007 CPTs obtained from NEWVERN in May 2007

Because the quantity of contraceptive consumption in many cases are estimates from issues data, the annual consumption reported for a given year may include quantities of contraceptives that are still in the pipeline but were actually consumed the following year. Therefore, to observe valid change in contraceptive consumption over time it is more appropriate to compare the average annual consumption (averaged over two to three years) rather than comparing the reported annual consumption. Accordingly, to correctly interpret the trend in the annual consumption of contraceptives in table 5, the reported consumption figures for each of the countries are illustrated in graphs and changes in contraceptive consumption over time expressed in changes in the average annual consumption and described in the text below. See appendix 6 for copies of the graphs.

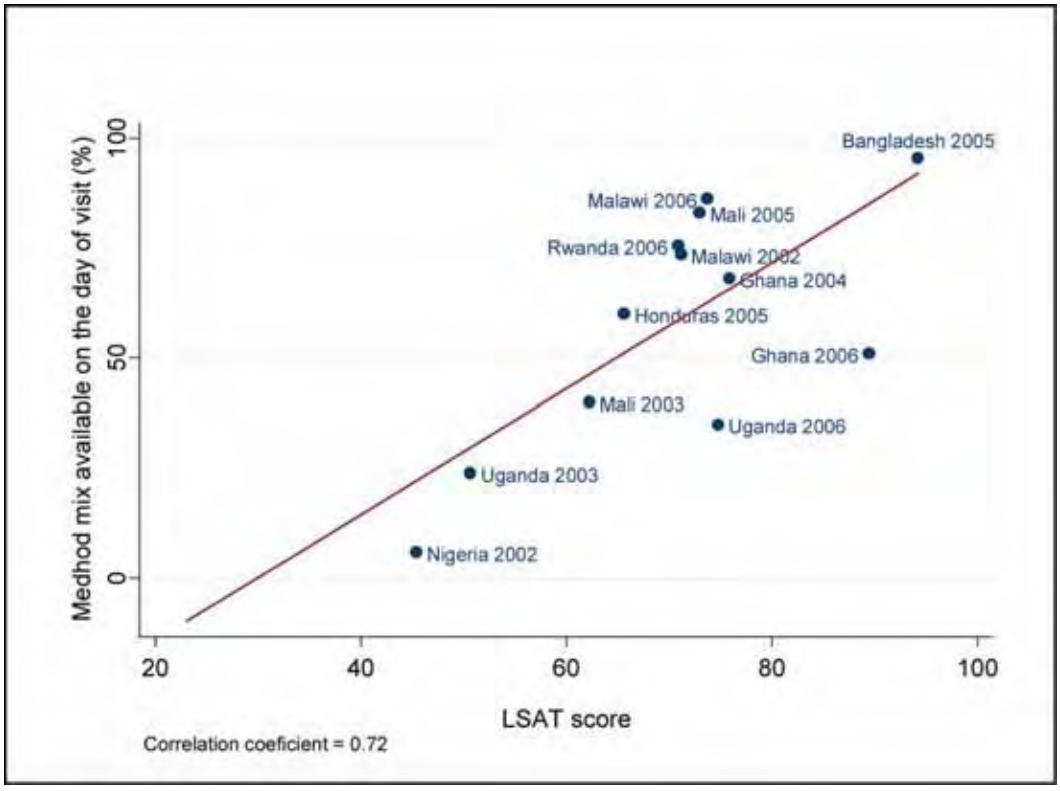
CORRELATIONS OF LSAT, LIAT, AND CONTRACEPTIVE PREVALENCE RATES

Another way to assess trends in product availability, albeit indirect, is to examine correlations between product availability measures, perceived logistics system performance, and CPR. An ongoing study of data from nine countries (Malawi, Mali, Ghana, Rwanda, Nigeria, Honduras, El Salvador, Nicaragua, and Bangladesh) does that.

Figure 4 shows a strong positive correlation between perceived system performance (as scored by a LSAT) and improvements in product availability (as measured by a LIAT). The data support the following observations.

- There is a strong relationship between the availability of three contraceptive methods (condoms, pills, and injectables) and the overall system performance (i.e., LSAT) score.
- As logistics performance improves, the availability of a mix of contraceptive methods also improves.
- With a strengthened logistics system, pills, condoms, and injectables are more available in health facilities.

Figure 4. Correlation between Product Availability and LSAT Score



This study also finds that there are strong correlations between availability of the same three contraceptive methods and CPR and between perceived improvements in logistics operations and CPR. See figures 5 and 6. These data suggest the following.

- There are strong relationship between the availability of three contraceptive methods (condoms, pills, and injectables) and the CPR for the public sector.
- As product availability of a mix of contraceptive methods improves, the CPR for the public sector increases.
- When there is a choice of temporary contraceptive methods (pills, condoms, and injectables) available in health facilities, more women use contraception.
- There is a strong relationship between the overall LSAT score and the CPR for the public sector.
- As the overall LSAT score increases, the CPR for the public sector increases.
- When logistics systems are strengthened, more women use contraception.

Figure 5. Correlation between Contraceptive Prevalence Rate and Product Availability

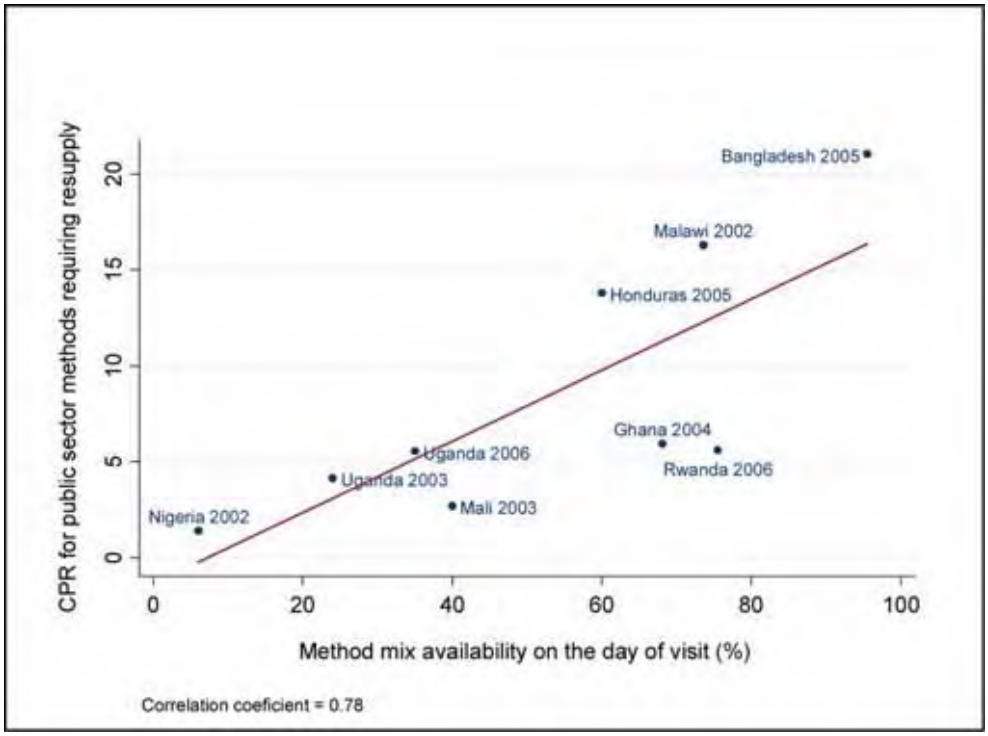
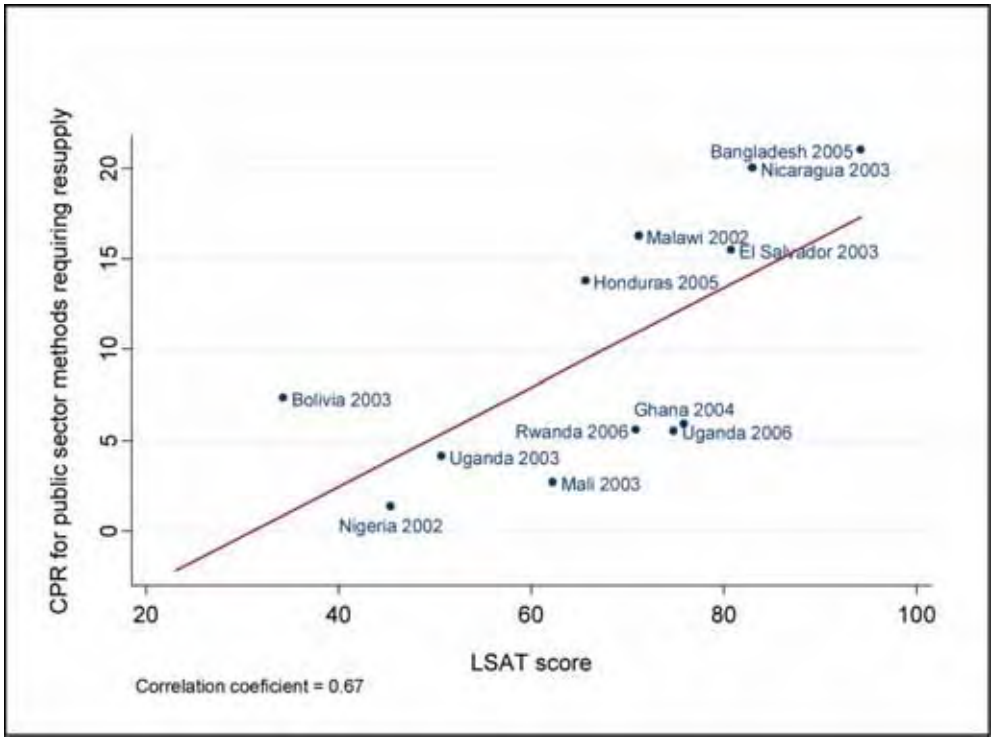


Figure 6. Correlation between LSAT Score and Contraceptive Prevalence Rate



While these correlations do not establish a causal relationship between DELIVER's inputs and improved product availability, they do demonstrate strong associations between logistics systems improvements undertaken by DELIVER, increased product availability, and improved CPR.

As noted, this study is ongoing, and it will continue under the USAID | DELIVER PROJECT. See appendix 5 for a summary of results to date, including a brief explanation of the study methodology.

COMPARING FINANCIAL INPUTS WITH PROJECT OUTPUTS FOR CONTRACEPTIVE MANAGEMENT

For a sample of the 17 countries with the largest programs, the project attempted to tabulate financial inputs and project outputs. For outputs, we focused on the project elements for logistics systems improvement and contraceptive security. The sample includes Rwanda, Tanzania, Uganda, Zimbabwe, West Africa Regional Program, Ghana, Mali, Nigeria, El Salvadort, Honduras, Nicaragua, and Paraguay. These projects have the largest technical assistance budgets, ranging from $9.4 million in Uganda to $732,000 in Paraguay. See appendix 7 for a table summarizing the data reviewed. For at least four reasons, this exercise has very limited analytical options.

- In any country arena, USAID inputs through DELIVER are only one among several funding streams; it is rarely possible to associate specific outcomes uniquely with one set of inputs.
- For some indicators, product availability for example, both baseline and endline measures are not always available; therefore, seemingly positive results cannot always be validated as trends.
- The composition of country programs vary greatly, making it difficult to make useful cross-country comparisons.
- Within countries it is not possible to attribute specific sums to specific activities within multipart programs.

What we can do for this sample, however, is to note the types of activities that seem to be in greatest demand.

- Nine of the programs had major LMIS design and implementation activities. Of these, five have had integration of logistics systems as the major focus. Since 1986, first FPLM and then DELIVER have been working to improve the LMIS. Demand for work in this area seems to be evolving toward greater sophistication as countries decide to integrate diverse logistics systems. No doubt, this is stimulated in most cases by HSR programs.

Twelve of the countries in the sample had definable contraceptive security programs. In most cases, DELIVER allocated resources for such general activities as supporting contraceptive security committees and developing national plans. Five country programs had *phaseout of donor assistance* as a focus. This brings along work on related activities, such as forecasting, donor coordination, procurement, and funding diversification. Even countries that do not use the term *phaseout* request assistance in these areas, as they tend to emerge as the most concrete issues to work on when contraceptive security is taken seriously.

REVIEW OF PROJECT OUTPUTS FOR HIV/AIDS PRODUCTS

DELIVER designed and implemented logistics systems for HIV tests and ARV drugs in seven of the nine countries in which DELIVER had a country office. The project had the resources and mandate to strengthen HIV/AIDS supply chains. Previously, no standardized systems had been designed for these commodities in any of the countries; the establishment of functional supply chains greatly facilitated each country's ability to rapidly scale-up availability of HIV testing services and access to ART.

Examples include—

- The Government of Uganda had no patients on ARTs in the public sector in 2003. By October 2006, the country enrolled and maintained 52,000 ART patients using the MOH ARV drug supply chain, which was designed and supported by DELIVER with the MOH and NMS partners
- Between 2002–2004, the Government of Kenya distributed more than 4 million rapid HIV test kits through the public sector supply chain for HIV tests to facilitate rapid scale-up of VCT and PMTCT services around the country. The supply chain was designed, implemented, and operated for the MOH with DELIVER assistance and support.
- In a number of countries—including Ghana, Kenya, Nigeria, Tanzania, and Uganda—the existence and successful operation of these supply chains enabled the countries to leverage multiple sources of funding for commodity procurement, including PEPFAR, the Global Fund, and World Bank grants.

See appendix 8 for the range of supply chain interventions for HIV/AIDS products in the nine countries where DELIVER assisted.

Unlike contraceptives, good options are not available for making quantitative measures of HIV/AIDS product availability as an indicator of system performance. The primary reason is because when DELIVER was first awarded in 2000, HIV testing and ART service provision were not feasible options for most national programs. Thus, many of the LIATs conducted at the start of the project gathered baseline data that did not include either of these commodity categories, which means that improvements over time cannot be measured.

We can, however, provide information on the values for the products purchased by DELIVER. Prior to the establishment of PEPFAR's Supply Chain Management System (SCMS) project, DELIVER was asked to undertake procurement of HIV tests, laboratory supplies, and ARV drugs in six countries for an overall total of $22.2 million from 2004 to 2006. Most of the procurement was to support ART provision by national programs. Table 6 displays expenditures by country.

Table 6. Total Value ($U.S.) of HIV Tests, Laboratory Supplies, and ARV Drugs Procured by DELIVER PEPFAR Funds, 2004–2006

	Total Value Procured	
	ARV Drugs ($)	HIV Tests and Laboratory Supplies ($)
Mozambique	1,606,647.12	
Tanzania	7,817,425.64	
Zambia	9,252,768.22	723,893.01
Zimbabwe	1,143,166.87	137,009.40
Angola		87,442.94
Kenya		1,434,376.32
	$19,820,007.85	**$2,382,721.67**

ADOPTION OF ADVANCES IN LOGISTICS

As with contraceptive security and human capacity development, adoption of advances in logistics is a potentially inclusive topic. Under a broad definition, novel approaches in technical assistance, such as SPARHCS or process mapping, might qualify because they stand for better methods that ultimately contribute to improved logistics service. However, other sections of the report already document the roles played by these approaches and comparable tools. In this section, we emphasize innovations that are intended to be applied by system participants within the context of routine work place operations. The examples describe new technologies that DELIVER helped counterparts to introduce.

SUPPORTING FORECASTING AND PROCUREMENT

Over the past two decades, DELIVER has developed techniques and software tools that can be used by central-level logistics planners and technical assistance providers to improve the forecasting of health commodities and to monitor the procurement pipeline of these items. The PipeLine and ProQ software packages developed by FPLM and DELIVER are the result of many years of experience by technical advisors, central-level planners, and supply chain technicians.

As far back as the early-1990's, JSI realized the need for an off-the-shelf software product to assist in forecasting demand and monitoring procurement of contraceptives. FPLM developed PipeLine to help program managers monitor whether they were receiving contraceptives in the right quantity and to assist in making good procurement decisions. DELIVER inherited a software program from FPLM that was set up for contraceptives only. Following a number of upgrades, PipeLine is now adapted to process data for all categories of public health products, including essential drugs, vaccines, and expendable medical supplies. It is available in English, Spanish, French, and Arabic.

PipeLine was used in more than 25 different countries with generally positive results. To give just two examples, in Uganda it was used to continually monitor 126 different products; while in Zimbabwe, it was used successfully to identify which ARVs were understocked and overstocked.

PipeLine is probably best used to identify potential understocks and overstocks and scheduling future shipments to ensure appropriate stock levels. It also has some ability to estimate annual costs of shipments (i.e., commodity cost and freight charges). On the other hand, DELIVER identified improvements that can be made to PipeLine in the future if resources permit. PipeLine has only limited forecasting capacity and would benefit from additional functionality in that area. Some users have reported that it can be difficult to set-up and maintain, therefore, some enhancements to the installation and data entry interfaces may be warranted.

In response to the growing demand for more reliable forecasts for HIV test kits in today's environment of rapid expansion of HIV testing, DELIVER in 2003 introduced a new software program called ProQ. The software was designed to help health program managers determine the quantities of HIV tests they needed across all HIV testing programs, namely for voluntary counseling and testing, preventing mother-to-child transmission, blood safety, and sentinel surveillance. This function was particularly important because if health programs are to meet their goals of treating and preventing increasing numbers of AIDS patients, a much larger number of people must determine their HIV status, and the number of HIV tests to be managed greatly increases. ProQ evaluates expected demand, service capacity, budget availability, and

pipeline considerations particular to each component of these HIV testing programs, and it provides managers with the overall quantities of HIV test kits to order.

ProQ has proved especially useful as an advocacy tool for facilitating policy decisions. The software uses data on supply chain capacity, demographics, morbidity, service capacity, and testing goals to forecast the quantity of HIV tests needed; compare demand with service capacity; adjust amounts needed to balance the supply pipeline; and estimate quantities to purchase to match budget allocation.

ProQ requires the use of specially designed questionnaires to assist with data collection for each specific purpose of HIV testing. These questionnaires guide users through the data collection and/or assumption building process (in the absence of data), and in doing so clearly identify gaps or contradictions in policies surrounding HIV testing that may lead to poor supply outcomes. In several countries, including Kenya, Uganda, and Zambia, using ProQ enabled program managers to enhance the efficiency of the HIV test supply chain by harmonizing testing algorithms for VCT and PMTCT, improving product selection decisions within each program, and identifying gaps in funding across programs.

ProQ requires users to have an in-depth knowledge of the national HIV testing guidelines and how HIV testing services are conducted on the ground, understand the different HIV testing technologies, be familiar with supply chain constraints, and have access to procurement and budgeting information. The lack of information in one or more of these areas can make it difficult to use ProQ. Future enhancements to ProQ might facilitate its usage in circumstances where data are incomplete.

DELIVER advisors have used ProQ in Tanzania, Uganda, Kenya, Ghana, and Zambia. While, in some cases, the advisors have teamed with local counterparts to estimate and enter data, it must be acknowledged that at this point the program is not institutionalized to a great degree. Additional work is required to make it perform robustly in the typically data-poor country environments. Nonetheless, because ProQ is available through the Web, feedback indicates that ProQ has been used and found to be extremely helpful by users in a variety of settings, without any input from DELIVER. An example is its use by *Medecins Sans Frontieres* in Rwanda for quantifying HIV test needs for their program.

SUPPORTING WAREHOUSING AND INVENTORY MANAGEMENT SYSTEMS

Warehouse management systems (WMS) software are technologies that integrate software, bar coding equipment and, sometimes, radio frequency communications to provide computerized process management and inventory control within the walls of a storage and distribution facility. A WMS normally supports the tasks routinely performed within a warehouse: receiving, put-away, replenishment, picking/packing, shipping, cycle counting, and inventory control. When implemented correctly, a WMS can bring specific and measurable advances in efficiency, such as reducing lead times, increasing storage capacity, and improving warehouse labor productivity.

In resource-poor settings, the complexity of a WMS can vary greatly. In many cases, WMSs are used for little more than maintaining a log of transactions and reporting on stock balances. In some cases, the WMS also provides rudimentary put-away and picking functions. In a few cases, the WMS supports the complete range of tasks normally associated with warehousing. In even fewer cases, the WMS supports bar coding.

DELIVER's experiences in implementing a WMS covered this entire range of possibilities. Three examples illustrate the applicability and challenges of a WMS in specific settings.

- In October 2000, DELIVER assisted the MOH of Cambodia to design a transaction monitoring and inventory management system for use in district storerooms. The Reproductive and Child Health Alliance (RACHA) of Cambodia implemented the system (called ODDID) for the ministry between 2001 and 2004. During this time, ODDID was modified to meet the changing needs of its users.

An assessment of the implementation of ODDID conducted by DELIVER in October 2005 suggested that these efforts had been very successful. RACHA's strategy of starting with a core of basic functions and then adding new functions not only ensured that the system met the changing needs of users but also won approval from skeptical MOH managers. Another key ingredient in the success of ODDID was the establishment of a user's hotline. District storekeepers were encouraged to contact RACHA whenever they encountered a problem. This helped them feel more secure and valued. User training was also integrated into the ongoing RACHA training program supported by the MOH.

- In September 2003, DELIVER assisted in an implementation of the Intellitrack WMS at the headquarters of Côte d'Ivoire–based Retro-CI HIV/AIDS research project. This WMS was configured to track storage and distribution of stocks managed by the virology, biology, and pharmacy departments at project headquarters. Intellitrack reported on stock and supported most of the tasks normally associated with warehousing. It also contained bar coding and radio frequency components, although neither were implemented in this case.

  Intellitrack was designed so that distribution tracking began with stock-on-hand data from a central storage facility. In Côte d'Ivoire, delays in the gathering stock-on-hand data halted the use of the WMS in one department. This limitation of the software could not be easily remedied and thus severely hindered the usefulness of the WMS. The lack of a local source of technical support made it impossible to adapt the software to support Retro-CI's unique warehousing operations.

- In 2003, DELIVER staff, working through JSI Logistics Services helped implement the WMS manufactured by Broadline at the MOH's central warehouse in East Timor, as part of a World Bank–funded project. In its original form, the WMS was centered on the concept of the purchase order. Thus, any warehouse receipt had to be associated with a corresponding purchase order. In addition, the warehouse locator system required that all incoming and outgoing stock be recorded by volume.

  The implementation process quickly revealed that the design on which the Broadline WMS was based did not apply to the East Timor situation. A significant percentage of incoming stock was either donated or returned from sites and thus not associated with any purchase order (a requirement of the software). In addition, human resource constraints at the warehouse prohibited staff from recording receipts/issues by their respective volumetric measurements (another requirement of the software). Significant customization was required to uncouple the concept of a purchase order from warehouse receipts and to eliminate the requirement that all receipts/issues be entered in volumetric measurements. Additional customization was required to amend numerous reports and to incorporate coding systems unique to East Timor.

  In short, Broadline's WMS could not function as advertised in the East Timor context. The customization to produce a workable version of the WMS required the on-site presence of a Broadline software engineer for nearly six months. Successful implementation was also aggravated by the lack of a local partner for Broadline that could provide ongoing technical support. Attempts were made to educate technicians from the leading network installer in East Timor to support the WMS, but it had only limited success. Software problems encountered after system commissioning often led to lengthy system downtimes and a tendency for warehousing staff to revert back to the paper-based system.

SUPPORTING SUPPLY CHAIN MANAGEMENT

DELIVER spent considerable time developing software to improve distribution planning and monitor/report on logistics transactions throughout the supply chain, which could be used either by central logistics planners or decentralized technicians. As far back as FPLM I, JSI developed the contraceptive commodities management information system (CCMIS). In its original form, CCMIS allowed central-level planners to monitor the stock status of contraceptives at different levels of the system. Over the years, CCMIS evolved into what is now known as Supply Chain Manager (SCM). SCM

and another package, also developed by DELIVER, called Distribution Resource Planning (DRP), were combined to provide a powerful set of tools for managing the supply chain:

- *SCM,* a software tool written in Microsoft Access, provides logistics management information to managers of distribution systems. By using SCM to gather and process a program's logistics data, managers are better able to ensure an effective and secure supply of commodities to clients. Its main module provides information about supply status and distribution of stocks at each service delivery point or storage facility, quantities of products dispensed to users, and trends in consumption.

  SCM has been implemented in many countries with mostly positive results. Although originally written to be deployed at the central level, in 2004 the software was customized and implemented in Malawi in 11 of 26 districts. The software markedly improved the accuracy of reorders sent to the Central Medical Store. It also improved the collection of historical logistics data that is now easily aggregated and processed at the central level for forecasting and other decision making. It was scheduled to be rolled-out in the remaining 15 districts in late 2006.

  SCM does have some limitations in its current form. It is best used with systems that use *fixed order interval/variable order quantity* inventory control strategies and that have relatively high reporting rates. It also is predicated on tracking data where there is one source for the item, for example, service delivery points being supplied from a single warehouse. These and other limitations can or already have been overcome through country-specific adaptations.

- *DRP* is designed to maximize transport routing efficiency and vehicle capacity, thereby helping to eliminate stockouts and prevent shortages. First used with great success in Kenya in the 1990's, DRP uses stock level and consumption data to estimate when and how much stock is needed at lower-level facilities. Based on this information, DRP enables distribution managers to choose between available vehicles to make deliveries. DRP can automatically propose a vehicle routing system for the most effective distribution.

  A generic version of DRP in Microsoft Access is available through DELIVER as a module of the SCM software package. With some technical assistance, DRP can be adapted for country-specific use. Though successful in Kenya, it is noted that DRP was applied there in the context of a well-funded and staffed FPLM/DELIVER country program.

WORKING WITH ENTERPRISE RESOURCE PLANNING SYSTEMS

An enterprise resource planning (ERP) system is a fully integrated collection of information systems that span most basic business functions required by an organization. In the context of an LMIS, these systems normally include accounting, sales/procurement, inventory management, and distribution planning. The implementation and integration of an ERP can represent the single largest information system project ever undertaken by an organization. Depending on the sophistication, such systems can cost anywhere from several hundreds of thousands of dollars to several million dollars and require an army of managers, users, analysts, programmers, and other consultants to implement. Because of the cost and complexity of implementing an ERP, they are seldom used in resource-poor settings.

DELIVER's experience with ERPs was limited but still instructive, including two experiences:

- In 2003 and 2004, DELIVER attempted to integrate bar coding into the existing NAVISION software used by the Ugandan National Medical Stores. NAVISION, an ERP, contains modules for sales, accounting, personnel, and inventory control. Efforts to connect existing bar code scanners with the version of NAVISION owned by the National Medical Stores proved unsuccessful. Though both NAVISION and the manufacturers of the scanners claimed that the products could interact, a certain amount of engineering is required to bring this about. The technical expertise to provide routine

ongoing support to an installation was either not available in Uganda or, if it was, did not present itself. Very recently, however, the National Medical Stores upgraded NAVISION to a newer version purported to more easily support most off-the-shelf scanners.

- In Mozambique, DELIVER supported the development of the *Sistema Integrado De Gestao De Medicamentos* (SIGM). This represented an effort to implement an ERP for a specific client according to its particular business and environment. SIGM is an ERP that is designed to integrate planning, procurement, warehousing, and distribution functions for all medications and related consumable items between the central and provincial levels of the supply chain (17 sites in all). It is designed to help improve timely access to logistics data for improved decision making. The system will be able to be used for monitoring, management decision, and evaluation. It is also web-based, thus allowing daily data downloads/uploads from provincial sites.

  The development of the SIGM was beset with difficulties since its inception, including changing staff at the MOH, a changing political environment in Mozambique, difficulties in getting consensus on requirements, and variable responsiveness on the part of both the client and the contractor. As a result, the project has been delayed 12 to 18 months. Such a large, long-term project runs the risk of staff turnover within the client implementing agency and subcontractor levels; this poses a danger for successful implementation and sustainability because a new generation of leadership within the government may not be as supportive.

WORKING WITH TWO OTHER "CUTTING EDGE" SOLUTIONS

DELIVER also experimented with more sophisticated hardware/software to solve logistics problems. Some of these cutting-edge tools resulted in tangible improvements in the logistics systems of resource-poor countries, while others have met with what could be called mixed results.

- In Yemen and, and more recently, Mozambique, DELIVER used powerful Automated Computer Aided Design (AutoCAD) software to develop designs for new warehouses. In both cases, AutoCAD significantly increased the time required to produce layout/designs for both the site and store areas of proposed warehouses. It also allowed stakeholders to easily experiment with different scenarios until a mutually acceptable design could be found.

  AutoCAD software can work well in resource-poor settings if it is free of problems. The fact that it is not dependent on interaction with other software and can run on any personal computer supporting Windows makes it very useful for warehouse design.

- In South Africa, first JSI Logistics Services, and subsequently DELIVER, experimented with a unique way of tracking patients on ARTs. In place of the traditional patient cards often used at hospitals in resource-poor settings, magnetized smartcards were issued to ART patients. They are similar in size to the ATM cards used worldwide. The smartcards required a fingerprint to activate them, thus preventing misuse. They were updated by service providers whenever the patient received a service or drug prescription and then returned to the patient. Whenever the card was updated, information on services and prescriptions was also stored on a reader that was later uploaded to a central-level computer where the data were used to facilitate decision making.

  The smartcards could be used anywhere that smartcard readers were available; because the readers were portable, they could be used both at health facilities and during home visits. The data were also encrypted, ensuring patient confidentiality and data security.

  Pilot testing of the smartcards began in mid-2005 at a few sites. By all accounts, the system functioned as designed and produced the information intended. Expansion will be funded through the SCMS project.

MAKE OR BUY?

DELIVER achieved the broadest coverage with the new logistics technologies project developed, specifically the PipeLine and Supply Chain Manager software. These programs represent a form of *appropriate technology*, that is, they were relatively simple applications designed to improve specific segments of the overall logistics process. They have been extensively implemented in suboptimal situations and are known to be relatively robust in variable levels of productivity and high staffing turnover rates. It has proven repeatedly that system maintenance can be delegated to in-country software firms. Nevertheless, these programs do not support some important functions: they have had significant development costs, and they require considerable ongoing technical assistance inputs for adaptation, installation, and training.

As awareness of the importance of logistics increased among countries and donors and, as MOHs took on increasing responsibility for managing commodity procurements, there was a natural tendency to look to commercial off-the-shelf software (COTS), such as the WMSs and ERPs described earlier. The COTS had the potential to support such sophisticated applications as bar coding or accounting that DELIVER's in-house software did not support. Because they are bought ready-made, they can be applied immediately, significantly shortening implementation times. In some cases, but not all, they require no on-going maintenance. In DELIVER's experience, however, they have some important potential disadvantages, including relatively high acquisition costs, high costs for adaptation, absence of in-country support capacity, and failure to perform as advertised.

ESTIMATION OF USAID'S CONTRACEPTIVE NEEDS

This section describes the work carried out by DELIVER in support of USAID's Central Contraceptive Procurement (CCP) system, with an emphasis on estimating USAID's contraceptive needs. The closely related topic of NEWVERN, the Central Contraceptive Management Information System (CCMIS), is covered in the following section.

The Contraceptive Procurement Table (CPT) is the key tool for estimating contraceptive requirements, and it connects global procurement activities with work at the country level. Between FY 2001 and FY 2006, 1,548 CPTs were received, reviewed for quality, analyzed, and entered into NEWVERN. These CPTs represented 37 countries, 66 recipients, and 53 products. Table 7 displays the number of CPTs by fiscal year, country, recipient, and product.

Table 7. CPTs by Year

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Number of countries	23	28	26	22	21	20
Number of recipients	39	47	45	32	27	23
Number of products	31	33	38	28	25	33

While CPT data were maintained in NEWVERN, DELIVER also maintained an archive of all CPTs received. Copies of CPTs were stored on-site for the current year and the past two years. All CPTs, three years and older, were stored at an off-site location.

DELIVER annually produced the *USAID Contraceptive Procurement Guide and Product Catalog* as a guide to missions, programs, CAs, and CSL and DELIVER staff on CPT preparation and USAID ordering procedures. In FY 2002, DELIVER successfully implemented the CPT skills assessment training course as another opportunity to improve the quality and reliability of CPTs. Over the course of DELIVER, seven training sessions were held for 99 participants.

As noted earlier, PipeLine is a software tool that helps program managers gather critical forecasting information, ensure that products arrive on time, maintain consistent stock levels at the program or national level, and prevent stockouts. To improve the quality and reliability of CPTs, DELIVER enhanced PipeLine to generate procurement tables using USAID's CPT planning requirements and format. This was released as version 2.0 in 2000.

At the end of DELIVER, the USAID | DELIVER PROJECT collaborated with the Supply Chain Management System (SCMS) project to implement critical enhancements to PipeLine to increase its functionality for a full range of health commodities and to facilitate the transfer of data between PipeLine and the SCMS management information system.

To measure the reliability of CPTs, DELIVER conducted statistical analyses of forecasting accuracy. Most recently, the *Accurately Forecasting Contraceptive Needs: Levels, Trends and Determinants* assessed the accuracy of annual contraceptive forecasts in CPTs prepared between 1994 and 2002

compared to actual demand contained in CPTs prepared between 1996 and 2004. The comparison consisted of 1,050 CPTs covering 50 programs in 19 countries.

The study reviewed the factors that influence forecast accuracy and defined forecast accuracy as "the absolute percentage difference between projected and actual quantities of a contraceptive distributed in a specific year for a given program." The study revealed the following:

- Forecast accuracy improved between 1995 and 2004.
- Expected forecast error was about 25 percent (considered good in commercial circles).
- Forecasts were more likely to overestimate rather than underestimate actual consumption.
- Improvement in forecast accuracy were associated with improvements in the LMIS and with the use of PipeLine software.

Finally, as noted in DELIVER's report *NEWVERN Performance Monitoring: Results 2000-2004*, countries submitting CPTs had longer order lead times (three months or more) than those countries not submitting CPTs. This contributed to more effective central procurement planning. Countries that did not submit CPTs were more likely to order shipments with a shorter lead time (less than three months), placing added stress on the CCP system to respond to those shipment requests. The study also showed that the CPT review period has decreased since 2002, indicating improved efficiency for central-level operations and improved responsiveness to the field.

OPERATION OF USAID'S CCMIS

DELIVER maintained and managed NEWVERN, the automated order processing and financial tracking system, also known as CCMIS. NEWVERN assisted DELIVER in supporting CSL to purchase and ship family planning and reproductive health commodities to USAID-supported countries throughout the world. NEWVERN was the primary repository of information relating to CSL's contraceptive production, warehousing, and shipping activities. It also contained information on CPTs; production contracts; warehouse stocks by lot, field orders, shipments in process; and funds received and expended.

NEWVERN was available via the Internet to USAID staff, recipient programs, and other partners involved in the procurement and shipping process. In FY 2005, DELIVER introduced a redesigned NEWVERN website with many new user-friendly features and greater security options. Improvements included the ability for users to view shipment information, account statements, and publications, as well as updating pertinent shipping information for customers and recipients.

During the course of the DELIVER contract, the system underwent five major version updates with 12 minor upgrades, including 47 functionality additions/modifications, 23 report additions/modifications, 14 interface modifications, and 4 website updates.

The major upgrades included—

- adding the ability to track funds by account type
- handling multiple case sizes for a product
- adding the ability to transfer data electronically to the Reproductive Health Interchange
- allowing multiple shippers and both metric and English units of measure, and
- adding the PEPFAR account type.

Over the six years, there were about five instances when CSL users experienced interruptions with the availability of NEWVERN through the T-1 line connection. In each instance, DELIVER worked closely with USAID to quickly identify the source and resolve the problem. The NEWVERN website provided an alternative for access to key NEWVERN information to CSL on those rare occasions.

In addition to the maintenance of NEWVERN, DELIVER operated the system by ensuring that—

- orders were accurately entered
- contract information was accurately maintained
- funding information was appropriately entered, monitored, and tracked by type
- recipient and customer data were maintained and kept current
- production and warehouse memos were issued in a timely manner
- shipping instructions were issued in a timely manner
- shipper activity was monitored
- receiving reports were issued and collected

- manufacturer and shipper invoices were reviewed and processed
- regularly scheduled reports were executed and distributed
- warehouse stock levels were monitored and reconciled
- on-time shipments were monitored.

DELIVER also maintained documentation that included a procedures manual for all operations, a NEWVERN reference guide (a user's manual), and a programmer's manual (technical documentation). These were updated regularly and were current as of September 2006.

There were certain key tasks for which DELIVER quantified NEWVERNS' performance.

- *Orders verified and entered into NEWVERN by DELIVER staff.* An Authorization for Contraceptive Shipment (ACS) was an implementation instruction to DELIVER from CSL; it was the official documentation required to edit, enter, delete, or otherwise change NEWVERN shipments and/or customer or recipient information. Each ACS form had a unique tracking number and specific instructions were attached to it. Upon receiving an ACS from CSL, DELIVER staff members reviewed and completed an ACS checklist to ensure completeness of information and as a quality check for the correct implementation of the ACS instructions. DELIVER processed more than 860 ACS requests with near 100 percent accuracy. DELIVER was also responsible for scheduling deliveries and issuing shipping instructions.
- *Production Memos were production orders sent to contraceptive manufacturers.* These orders were usually for a fixed monthly delivery amount established in the manufacturer's contract with USAID and were due to manufacturers approximately 90 days prior to the end of a given production month. Of the 509 Production Memos issued by DELIVER, 148 or 29 percent were issued late (less than 90 days). DELIVER also issued 447 amendments to these Production Memos, for a total of 956 memos during the six years of DELIVER.

  While the number of late Production Memos appears high at first glance, 132 (89 percent) of the 148 late Production Memos occurred as a result of unavoidable factors, such as the timing of a new contract, contract modifications, waiting to obtain waivers and approvals, manufacturer production delays or schedules, late orders, funding delays, and product transfer to a new freight forwarder. Sixteen (11 percent of the late Production Memos, 3 percent of all Production Memos) were issued late due to DELIVER staff error. In a few of these cases the Production Memos were misplaced by DELIVER staff—subsequently, a new tracking process was implemented and, subsequently, no Production Memos were misplaced. Table 8 displays the number of Production Memos and amendments issued by fiscal year.

Table 8. Number of Production Memos and Amendments Issued by Fiscal Year

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	Total
Number of on time	72	69	42	53	60	65	361
Number of late	13	1	34	32	40	28	148
Total number	85	70	76	85	100	93	509
% of late	15%	1%	45%	38%	40%	30%	29%
Number of amendments	61	45	101	86	87	67	447

- Warehouse Memos are detailed instructions issued to the shipper to send product from the warehouse to the field. Warehouse shipments were ordered individually, one shipment per memo. Because a Warehouse Memo specified the number of cartons to pick by manufacturing lot, no Warehouse Memo could be issued until the product to be shipped was in the warehouse. Warehouse Memos were generally issued several times a month and over the course of DELIVER, JSI issued 2,758 memos and 64 amendments, averaging 470 memos per year or 39 memos per month.

All of the aforementioned CCP activities contributed to the overall on time shipments rate, a critical element to ensure contraceptive security. In FY 2006, DELIVER presented the results of a study, *Assessing Optimum Stock Level and Other Factors Influencing On-Time Shipments*, which indicated the percentage of on-time shipments showed an increasing trend over the life of DELIVER. Additionally, DELIVER implemented a process to review on-time shipments more frequently—and the causes for late shipments—to provide another tool for CSL and DELIVER to closely monitor the performance of the CCP system and to address any concerns before they became major problems.

In addition to the day-to-day operations of the CCP system and other support to CCP, DELIVER received and fulfilled 242 special requests for data and/or analysis from USAID and various CAs. The project also provide related services to field programs through its advisors. As examples, the project published the monthly CPT Status Report related to short-term contraceptive supply; queried advisors about implant use to help USAID determine their post-Norplant strategy; surveyed advisors to find a likely acceptor program for Megestron; and disseminated information to the field about product issues. Occasionally, the project assisted CSL in facilitating the transfer of products between countries to be cost effective or to avoid stockouts, overages, or potential product destruction. Examples included shipping replacement Duofem to Zambia from DR Congo and transferring vaginal foaming tablets from Mali to Senegal.

DELIVER staff members also played a key role in supporting the overall contract management by CSL. The project enjoyed favorable relationships with FHI (the quality assurance service provider for CCP), Matrix International Logistics (CCP's freight forwarder), and manufacturers, taking an active role in management meetings and providing reports and other information for decision making. Surveys of CSL staff showed a high level of satisfaction with our overall performance and responsiveness.

LEADERSHIP: DELIVER WAS MORE THAN THE SUM OF THE PARTS

International public health has always been characterized by evolution in challenges, technologies, and priorities. Contemplating such recent developments as HSR, the advent of global funds or the onslaught of HIV/AIDS—to name just three—it sometimes seems as if the pace of evolution is accelerating. In these conditions, a project the size of DELIVER must be prepared to do more than distribute this product or solve that problem. It was also our significant responsibility to provide, for clients and other stakeholders, leadership that prepares us to respond effectively to existing and emerging challenges. The quantity, quality, and diversity of achievements described in the first seven sections of this report makes clear that DELIVER lived up to this responsibility. The following examples substantiate this claim to leadership. In response to a request from USAID, we revised this text.

- *Ways are being found to make progress in contraceptive security.* Many organizations and individuals are responsible for the progress made to date and DELIVER is prominent among them. Tools such as SPARHCS and the *Contraceptive Security Index* have been widely disseminated. Countries and even whole regions are changing their policies and practices in response to strategic inputs by DELIVER. Some initiatives, such as improved procurement practices and diversification of funding, are already showing measurable financial results. Others, such as policy formation and total market approaches, will take more time to develop before they can achieve comparable outcomes. In either case, however, DELIVER provided practical solutions that will provide increasing benefits if we can help countries stay focused on implementing them.

- *Improved logistics enhances HSR.* In 2000, FPLM III presented the results of a study on the effects of HSR initiatives, such as integration and decentralization, on contraceptive logistics systems. A major finding was that HSR planners did not understand the role of logistics in public health management, nor did they understand how carelessly designed reforms could cause deteriorations in logistics services. The most common response was, "We've got to be at the table next time." DELIVER did, in fact, make it to the table in a number of countries, including Ghana, Uganda, Ethiopia, Malawi, Indonesia, and Bolivia. In these cases, with the support of MOHs and other stakeholders, DELIVER helped to build consensus on the importance of logistics and to coordinate system design and implementation activities so that logistics services were a beneficiary and not a victim of HSR.

- *HIV/AIDS logistics is complicated, but progress is being made.* USAID had the foresight to expand DELIVER's mandate beyond contraceptives. The Jeffery Sachs call to action that launched the ARV movement took place at the beginning of the project, and this was followed shortly by significant global funding initiatives, including GFATM and PEPFAR. Previous USAID HIV/AIDS-focused projects had done some work with logistics, but in retrospect it was minimal. The decision to treat HIV/AIDS brought urgent new problems—surges in volume; management of short-lived high-value commodities; and the need for many new products—as the simultaneous availability of ARV, OI drugs, and laboratory supplies became a program requirement. With its pre-existing expertise in forecasting, procurement, information management, and distribution, DELIVER was able to gear up quickly to support ministries as they learned to handle big, short-lead-time financing, and commodity inputs. While not all clients' problems were solved, the ability to cope was greatly improved.

- *Introducing advanced technologies is difficult, but efforts must continue.* Public-sector logistics systems became more sophisticated, and population increases and new health programs placed ever heavier burdens on them. While this was happening, financial constraints were limiting the options for providing effective service. The overall logic of this situation called for improved logistics system efficiency—the use of *appropriate techknowledgy*.

Programs, PipeLine and ProQ, still seemed to work best in most countries, though they do not solve all problems. Throughout the life of the project, DELIVER experimented with adapting private-sector methods and products. The results were mixed. Commercial-off-the-shelf software and cutting-edge innovations such as bar coding did not work as well as hoped. It is possible, however, as we learn more about the set-up and support requirements of these products, some will be identified that can improve efficiency and be replicated economically. Certainly efforts should continue. One technology that worked well was the use of electronic smart cards to track ART dispensing to HIV/AIDS patients.

REFERENCES

DELIVER and Task Order 1 of the USAID | Health Policy Initiative. 2006. *Contraceptive Security Index 2006: A Tool for Priority Setting and Planning.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

DELIVER. 2005. *USAID Contraceptive Procurement Guide and Product Catalog 2006.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

DELIVER. 2006. *Guidelines for Managing the HIV/AIDS Supply Chain.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

DELIVER. 2006. *Lessons Learned in Managing Laboratory Supplies.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Diallo, Abdourahmane, Claudia Allers, Yasmin Chandani, Wendy Nicodemus, Colleen McLaughlin, Lea Teclemariam, and Ronald Brown. 2006. *Guide for Quantifying Laboratory Supplies.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Diallo, Abdourahmane, Lea Teclemariam, Barbara Felling, Erika Ronnow, Carolyn Hart, Wendy Nicodemus, and Lisa Hare. 2006. *Assessment Tool for Laboratory Services (ATLAS) 2006*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Felling, Barbara, Wendy Nicodemus, Ronald Brown, Abdourahmane Diallo, Meba Kagone, Paula Nersesian, and Lea Teclemariam. 2006. *Guidelines for Managing the Laboratory Supply Chain.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

John Snow Inc./DELIVER, 2004. *The Logistics Handbook: A Practical Guide for Supply Chain Managers in Family Planning and Health Programs.* Arlington, Va.: John Snow Inc./DELIVER, for the U.S. Agency for International Development (USAID).

John Snow, Inc./DELIVER and Futures Group/POLICY Project. 2003. *Contraceptive Security Index 2003: A Tool for Priority Setting and Planning*. Arlington, Va.: John Snow, Inc./DELIVER.

Karim, Ali. Forthcoming. *Accurately Forecasting Contraceptive Needs: Levels, Trends and Determinant.* USAID | DELIVER PROJECT, Task Order 1.

Ross, John, and Randy Bulato. 2001. *Contraceptive Projections and Donor Gap*. Arlington, Va.: Family Planning Logistics Management/ John Snow, Inc, and The Futures Group International.

Sarley, David, Raja Rao, Carolyn Hart, Leslie Patykewich, Paul Dowling, Wendy Abramson, Chris Wright, Nadia Olson, and Marie Tien. October 2006. *Contraceptive Security: Practical Experience in Improving Global, Regional, National, and Local Product Availability*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

U.S. Agency for International Development (USAID). December 2002. *USAID Democratic Republic of the Congo Integrated Strategic Plan FY 2004–FY 2008* (concept paper). Washington, D.C.: USAID.

U.S. Agency for International Development (USAID). January 2005. *Fragile States Strategy*. PD-ACA-999. Washington, D.C.: USAID.

APPENDIX 1

COUNTRIES WHERE DELIVER WORKED AND COUNTRY FACT SHEETS

Angola
Armenia
Azerbaijan
Bangladesh
Benin
Bolivia
Brazil
Burkina Faso
Cameroon
Chile
Colombia
Costa Rica
Côte d'Ivoire
Democratic Republic of the Congo
Dominican Republic
Ecuador
Egypt
El Salvador
Ethiopia
Ghana
Guatemala
Guyana
Haiti
Honduras
India
Indonesia
Jordan
Kazakhstan
Kenya
Krygyzstan
Liberia
Madagascar
Malawi
Mali
Mozambique
Nepal
Nicaragua
Niger
Nigeria
Pakistan
Paraguay
Peru
Philippines
Romania
Russia
Rwanda
Senegal
Sierra Leone
South Africa
Tanzania
Togo
Uganda
Ukraine
Uzbekistan
Yemen
Zambia
Zimbabwe

Countries where DELIVER worked in 2006

Azerbaijan
Bangladesh
Benin
Bolivia
Democratic Republic of the Congo
Dominican Republic
El Salvador
Ethiopia
Ghana
Guatemala
Guyana
Honduras
Jordan
Kazakhstan
Kenya
Krygyzstan
Liberia
Madagascar
Malawi
Mali
Mozambique
Nepal
Nicaragua
Nigeria
Pakistan
Paraguay
Peru
Philippines
Rwanda
Sierra Leone
South Africa
Tanzania
Uganda
Yemen
Zambia
Zimbabwe
West Africa

USAID | BANGLADESH
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: **BANGLADESH**			Total Funding: **$10,747,286**			
DELIVER Field Office	No. of local staff: 27		Presence established on: 2000 (DELIVER)			
Technical Focus Areas	Family Planning	X	TB		Donor Coordination	X
	Integrated Systems	X	Contraceptive Security	X	Market Segmentation	X
	Information Systems	X	EPI		Financing	
	HIV/AIDS		Essential Drugs	X		
Principal Client Organizations	Ministry of Health and Family Welfare (MOHFW), Directorate General of Family Planning (DGFP) Central Medical Stores, Directorate General of Health Services PHN, USAID/Bangladesh World Bank, stakeholders					
DELIVER's Objectives	The key objective of DELIVER in Bangladesh is to provide technical assistance to the MOHFW's health logistics activities towards making contraceptives and essential health commodities available at service delivery sites. • Collaborate with MOHFW to formulate policies for achieving contraceptive security (CS) • Support timely procurement of contraceptives and RH commodities under HNPSP • Improve supply chain management of family planning and health commodities • Collaborate with public and private sector for strengthening commitment in CS • Support functioning of coordination mechanism with GOB, DPs, NIPHP partners and private sector for achieving CS					
Major Interventions/ Primary Results	• Updated market segmentation analysis (MSA) report based on BDHS 2003-04 results • Prepared policy brief incorporating changes as suggested in MSA • Worked with MOHFW/Drug Administration Unit to ease regulatory barriers for private sector participation in CS • Assisted DGFP in pre-qualification of bidders for procurement of contraceptives • Maintained a procurement database by source of funds and contacts • Continued to provide TA support to MOHFW, DGHS, and DGFP for accomplishing procurement of Health and FP packages planned under HNPSP • Maintained procurement tracking of DGFP and DGHS (CMSD) packages • Conducted procurement training for 30 DGFP and DGHS procurement personnel • Provided TA to DGFP for developing a coordinated procurement plan for contraceptives and other commodities • Revised procurement manual/tools per PPR 2003 and WB guidelines 2004 • Provided TA to do pre-shipment inspection of condoms • Assisted DGFP in implementing procedures on disposal of used needles and syringes • Assisted in production of MSR kits using the packaging unit at CWH • Monitored use of commercial vehicles in transportation of FPMCH commodities resulting in 50% coverage by commercial transport • Provided need-based TA support for hardware/software maintenance of WIMS and LMIS • Conducted a pilot testing of web-based LMIS reporting in warehouses • Devised and implemented an effective computer backup system in selected warehouses • Assisted DGFP to ensure availability of commodities at GOB and NGO sites through field monitoring visits • Tracked pipeline and procurement status and work with MOHFW/DGFP/DPs to avert stock out • Assisted DGFP in operationalizing a Logistics Monitoring Cell for carrying out supervision and monitoring of logistics activities					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

	• Conducted LMT for 100 pharmacists posted as Storekeepers • Assisted DGFP to produce month Pipeline and LMIS reports, and prepared a consolidated GOB and SMC Pipeline Report • Published three issues of CS newsletter • Published periodic DELIVER reports (monthly, quarterly, yearly) • Conducted M&E exercise for national FP logistics systems and disseminated results • Updated DELIVER page on the Central DELIVER website • Facilitated participation of 1 GOB official for overseas training • Provided need-based OJT to GOB and NGO logistics personnel during monitoring visits • Provided technical assistance to DGFP for conducting national physical inventory • Provided support to operationalize 10 newly GOB constructed upazila stores • Conducted assessment to introduce bar coding technology in the central warehouse • Assisted DGFP in testing of contraceptives available in the supply chain • Assisted DGFP to hold regular meetings of CS IEC forum to implement CS BCC strategies • Undertook CS advocacy through journalists and other electronic media • Provided TA to SMC to design a central warehouse • Initiated TA to SMC to design and implement an effective LMIS • Provided TOT to 50 NSDP and NGO headquarters officials on logistics management • Supported Department of Population Sciences, Dhaka University to incorporate CS into its curriculum • Continued on-going collaboration with NIPHP partners to review and promote CS activities • Organized quarterly meeting with NSDP to review supply of contraceptives to NSDP NGO sites • Organized quarterly donor coordination meeting to review stock and pipeline status of contraceptives and selected RH commodities • Organized regular meetings with MOH officials to review procurement packages • Assisted MOH to organize quarterly meetings of Logistics Coordination Forum • Organized NIPHP working group meeting to review progress of DELIVER and SMC workplan activities

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | BOLIVIA
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: BOLIVIA			**Total Funding:** $ 1,802,000			
DELIVER Field Office	No. of local staff: 6		Presence established: 2001			
Technical Focus Areas	Contraceptive Security	x	Essential Medicines	x	Training of personnel within the public health sector	x
	Integrated Systems for Medicines and Supplies	x	University-level training of logistics professionals	x	Advocacy with national and local authorities	x
	Implementation of Municipal Institutional Pharmacies (FIM)	x				
Principal Client Organizations	Ministry of Health and Sports (MSD), National Directorate for Medicines and Technology (DINAMED), Directorate for Health Services Development (DDSS), Universal Mother and Child Health Insurance Program (SUMI), Center for Supply Management of Health Commodities (CEASS), Departmental Health Services (SEDES); Local Health Services (DILOS); Municipal Governments; public and private universities through the Nursing, Pharmacy, Biochemistry, and Pharmaceutical Chemistry programs; coordination with international cooperating agencies, including UNFPA, UNICEF, WHO/PAHO, JICA, DFID, and CIDA; coordination with NGOs, including PROSALUD, PROCOSI, CIES, CSRA, and CARE.						
DELIVER's Objectives	• Improve the availability of medicines and contraceptives for the benefit of consumers. • Promote and facilitate public policies that support the improving the availability of medicines and commodities. • Create effective public health logistics systems. • Support mobilization of financial resources for the procurement of contraceptives. • Train health personnel to increase the quality of health services rendered.					
Major Interventions	• Development and implementation of the standardized Contraceptive Logistics Management System for the public and private sectors, which incorporates NGOs and the Ministry of Health and Sports at the national level, and Municipal Governments at the local level. • Training of health personnel responsible for managing contraceptive commodities, as well as personnel within the Municipal Institutional Pharmacies (FIM) of the MSD, of the SEDES, and of the Municipal Governments. • Development of skills and abilities in logistics management for regional trainers in the nine departments of Bolivia, including the personnel from the following groups: Sexual and Reproductive Health Program; the SUMI; pharmacies and laboratories; CEASS; municipal officials; experts from universities and technical health schools; and regional coordinators from the different cooperating agencies and NGOs. • Advocacy with national authorities to incorporate the Logistics Management System as part of the national health policy and guidelines. • Promote the sustainability of the Logistics Management System for Medicines and Supplies through incorporating logistics into the curriculum for programs on Nursing, Pharmacy, Biochemistry, and Pharmaceutical Chemistry in the public and private universities, as well as in the Technical Health Schools for the program for Nursing Assistants. • Technical assistance to the Municipal Governments and the public health sector in implementation of the Municipal Institutional Pharmacies (FIM). • Coordination and technical assistance with the Ministry of Health and Sports and the Municipal Governments for the control and on-going support of the LMIS for FIM.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

	• Coordination with NGOs for the implementation of the Logistics Management subsystem for PROSALUD, PROCOSI, CIES, CSRA, and CARE. • Inter-institutional coordination with other international agencies, including UNFPA, UNICEF, WHO/PAHO, JICA, DFID, and CIDA. • Development and implementation of a computerized system designed for support of the LMIS, an integral component of the National Supply System SNUS. • Development of training and self-teaching manuals on logistics. • Promotion for the formation of the inter-institutional committee for achieving contraceptive security. • Consolidation of the contraceptive needs forecasts at the national level, using the PipeLine software tool, for beneficiary agencies of USAID and for the Ministry of Health and Sports. • Introduction of logistics indicators to the Information Analysis Committees (CAI) in some regions of the country, with the goal of promoting analysis that would allow continuous evaluation and implementation of corrective measures. • Analysis of market segmentation for contraceptives.
Primary Results	• Policy achievement of introducing the Logistics Management System for Medicines and Supplies (SALMI) as part of the regulations of the National Supply System (SNUS) that was finalized by Supreme Decree Nº 26873 and Ministerial Resolution Nº 0735 of the National Health System of December 2002. • Sustainability of the Logistics Management System, after introducing it as part of the curriculum for the programs of Nursing, Pharmacy, Biochemistry, and Pharmaceutical Chemistry in public and private universities, as well as in the Technical Health Schools for the program for Nursing Assistants (42 instructors trained at the national level). • 3,997 personnel trained in logistics directly by DELIVER, with more than 378 people trained in their place of work at the time of implementing and/or reorganizing the FIM. • 342 Municipal Institutional Pharmacies implemented with the technical support and training from DELIVER/JSI Bolivia. • Development of 11 documents to support the logistics management system, including training manuals, guides, case studies, and others. • Donation of the computerized SALMI-LMIS system to the Ministry of Health and Sport, the Departmental Health Services, and to the Municipal Governments. • Sustainability of the logistics management system through sharing the training methodology with the Ministry of Health and Sports and with NGOs, who will give continuity to the implementation of the SNUS. • Establishment of the inter-institutional committee for achieving contraceptive security. • Expansion of the SUMI to cover women from 5 to 60 years of age.

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID FROM THE AMERICAN PEOPLE | DEMOCRATIC REPUBLIC OF CONGO

COUNTRY FACT SHEET

Country: **Democratic Republic of Congo**			Total Funding: **$290,000**			
DELIVER Field Office	No. of local staff: 0		Presence established on: No Field Office			
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	
	Integrated Systems		Contraceptive Security		Market Segmentation	
	Financing		EPI			
	HIV/AIDS		Essential Drugs			
Principal Client Organizations	SANRU, CARE, and USAID					
DELIVER's Objectives	• Strengthen SANRU's reproductive health (RH) logistics system. • Design a reproductive health logistics system with CARE and train CARE staff in implementation. • Increase the forecasting/logistics capacity of the USAID Mission in DRC.					
Major Interventions	• Train supervisors from all 22 zones where SANRU is providing family planning services in basic logistics management. • Conduct a rapid assessment of CARE's existing logistics system. • Conduct a design workshop with CARE to design an RH logistics system, including a logistics management information system and an inventory control system. • Facilitate a training of trainers to increase the competency and capacity of personnel in health logistics management. • Serve as an on-going resource for CARE in RH logistics. • Assess CARE's new system and make necessary changes to strengthen system. • Conduct an impact assessment of CARE's system (LSAT and LIAT). • Facilitate workshop on forecasting for USAID Mission staff and their partners. • Debrief USAID Mission, CARE International and Ministry of Health on Sud Maniema's logistics system.					
Primary Results	• Logistics system in place in Sud Maniema. • Stockouts avoided in Sud Maniema. • USAID Mission and their partners trained in different methods for forecasting.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER No Product? No Program. Logistics for Health

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | EL SALVADOR
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: EL SALVADOR			**Total Funding:** $1,020,000			
DELIVER Country Office	No. of local staff: 3		Presence established in: February 2006 (2 consultants, and 1 admin. staff for 8 months)			
Areas of technical emphasis	Family Planning	x	TB		Donor Coordination	x
	Integrated Systems		Contraceptive Security	x	Market Segmentation	x
	Financing	x	EPI			
	HIV/AIDS		Essential Drugs			
Main Organizations	Ministry of Health, Contraceptive Security (CS) Committee, ADS (IPPF affíliate), UNFPA, USAID					
DELIVER Objectives	• To improve the contraceptive logistics system, by improving product availability indicators. • Foster CS activities through the CS committee, and at the national level. • Work with the MOH to allocate funds for contraceptive procurement, on an annual basis • Coordinate the signing of an MOU between UNFPA and the GOES. • Establish indicators to ensure sustainability of CS activities and the institutionalization of logistics system. • Transfer skills in forecasting and contraceptive needs estimation to MOH staff.					
Main Areas of Intervention	• Contributed to the design of the USAID phase-out plan for the MOH. • Worked closely with the UNFPA regional office to develop the MOU between UNFPA and the Government of El Salvador (GOES). • Participated in the negotiations between UNFPA and GOES, on behalf of USAID. • Facilitated the meetings between UNFPA and GOES, until the MOU was signed. • Advocacy work with the Finance Unit and the Planning Unit of the MOH to allocate funds for contraceptive procurement on an annual basis. • Implemented the LIAT tool to evaluate the logistics system, and calculate core logistics indicators. • Provided on-the-job training to MOH regional and service delivery point staff. • Implemented a supervisión and monitoring system for the Regions (SILAIS) and SDPs, to ensure proper functioning of the logistics system, and timely data reporting. • Transferred skills to MOH and ADS staff in forecasting and contraceptive needs estimation. • Provided input to the CS strategic plan. • Procured computers, and other equipment for the FP program, to improve the processing of key logistics data.					
Primary Results	• Phase-out plan between USAID and MOH in place. • Logistics system improved, by increasing product availability at SDPs. • MOU between UNFPA and GOES signed. • MOH procuring nearly 80% of their contraceptive needs with government funds. • MOH preparing its own contraceptive procurement tables (CPTs), with no external assístance. • Logistics indicators established and measured.cCS committee formed, and discussing the inclusion of a line item in the national budget for contraceptive procurement.					

MARCH 2007

This publication was produced for review by the United States Agency for Internaitonal Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | ETHIOPIA
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: ETHIOPIA			**Total Funding:** $5,684,000			
DELIVER Field Office	No. of local staff: 20		Presence established on: September 1, 2003			
Technical Focus Areas	Family Planning	x	TB	x	Donor Coordination	x
	Integrated Systems	x	Contraceptive Security	x	Market Segmentation	
	Financing	x	EPI			
	HIV/AIDS		Essential Drugs	x		
Principal Client Organizations	Ministry of Health/Family Health Department (MOH/FHD); Pharmaceutical Administration and Supply Service (PASS); Other Federal Level Program Departments; Regional Health Bureaus; Coordination with UNFPA, UNICEF, JSI/ESHE, Pathfinder International, DKT, and others.					
DELIVER's Objectives	• Improve the public sector's Commodity Logistics System (CLS) with an initial focus on contraceptives. • Strengthen public sector logistics capacity. • Enhance contraceptive and commodity security.					
Major Interventions	• Scale-up of the Ethiopian Contraceptive Logistics System (ECLS) in Amhara, Oromia, SNNP, and Tigray Regions in 16 new Zones with more than 3,000 trainees (following pilot phase in these Regions and Addis Ababa). • Implement the ECLS in six outer regions and cities: Somali, Afar, Dire Dawa, Harar, Beneshangul Gumuz, and Gambella. • Continue to produce quarterly Contraceptive Stock Status Report for MOH and key partners. • Implement a training program for MOH supervisors at various levels, including a monitoring and supervision system for the contraceptive logistics system. • Partner with MOH and UNICEF in development of a Master Plan for the Health Commodity Supply System. • Provide support to Federal level (PASS) for distribution, inventory management, and warehouse planning. • Provide resources and organizational skills to a major "dejunking" effort at the Federal MOH warehouses. • Provide support to the Tigray, Amhara, Oromia, and SNNP Regions for distribution, warehousing and basic logistics training. • Provide annual national contraceptive forecast (March 2006) and assist with preparations for a National Contraceptive Security Workshop (April 2006).					
Primary Results	• Improvement in CS Indices. • Warehouse Improvement and inventory management information. • Trained over 6,000 regional and woreda-level health workers on ECLS (as of June 2006). • Approval and integration of Master Plan for the Health Commodity Supply System.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | GHANA
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: GHANA			**Total Funding:** $3,841,000			
DELIVER Field Office	No. of local staff: 3		Presence established on: 2002			
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	x
	Integrated Systems	x	Contraceptive Security	x	Market Segmentation	x
	Financing	x	EPI			
	HIV/AIDS	x	Essential Drugs	x		
Principal Client Organizations	Ministry of Health/ Procurement and Supplies Division (MOH/P&S); Ghana Health Service/ Stores, Supplies and Drug Management Division(GHS/ SSDM);Public Health Division (GHS/PHD), Reproductive and Child Health Unit (GHS/ RCHU), National AIDS/ STI Control Program (NACP); Central Medical Stores (CMS), Public Health Reference Laboratory (PHRL), Ghana Social Marketing Foundation; coordination with UNFPA, UNICEF, DfID, JICA, Royal Netherlands Embassy (RNE), WHO and USAID/Ghana/HPN SO7 partners such as Academy for Educational Development (AED), Population Council, Quality Health Partners-EngenderHealth (QHP), Family Health International (FHI), ICC/CS members, and others					
DELIVER's Objectives	• Strengthen contraceptive security. • Strengthen the National HIV/AIDS Program.					
Major Interventions	• Improve reliability of health commodity distribution by supporting the implementation of the integrated supply chain (essential medicines, contraceptives, non-drug consumables) based on the scheduled delivery system. • Build capacity to estimate and monitor commodity requirements. • Improve capacity for financing health commodities including HIV/AIDS commodity. • Improve capacity to procure contraceptives at the international market. • Assess and improve logistics management capacity at national level, ART and testing sites for ARVs, HIV test kits and lab commodities. • Improve capacity to monitor and evaluate logistics performance.					
Primary Results	• Integrated supply chain implemented in 5 regions with scheduled delivery functional in 3 of the 5 regions: contraceptives, essential drugs and non-drug consumables. • SOPs for managing the integrated supply chain developed and produced for all the facilities in the public sector. • Combined Requisition, Issue and Receipt voucher with the pre-printed list of the commodities in full supply has been provided and are being used to manage the integrated supply chain. • 1055 staff managing the health commodities trough the integrated supply chain (including 33 regional and central trainers) have been trained in logistics management (SOPs). • The 2006 LIAT showed that during the day of visit, on average, 21% and 26% of health facilities were out of stock for respectively contraceptives and essential medicines. 17% of testing sites were out of stock. • 34% and 38% of the facilities experienced stockout during the last 6 months for respectively contraceptives and essential medicines. • 33% of the testing sites experienced stockout of test kits during the last three months.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

	• Local capacity built and available to do forecasting, quantification, and procurement of contraceptives, essential drugs and HIV/ AIDS commodities with minimal assistance. • Contraceptive security strategy developed, approved and implemented. • ICC/CS in place, led by the Director of Public Health, Ghana Health Service and meeting regularly. • Enough resources mobilized through ICC/CS advocacy for contraceptives procurement: from 2003 to 2006, there was no funding gap for contraceptives for all the programs in Ghana. • Strong government commitment to finance contraceptive: MOH provided $1.5 million in 2003, $1.8 million in 2005 and $1.0 million in 2006 for contraceptives procurement. • Formulated policies to strengthen contraceptive security such as a financial sustainability plan for contraceptive procurement. • ARVs and test kits LMIS designed, implemented, and functioning well. • Staff from all the ART sites and the testing sites have been trained in LMIS: in total, 95 staff from the 21 currently functional ART sites and 171 labs. Technicians have trained in LMIS. • HIV/ AIDS commodity security strategy plan has been developed and approved.

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | GUYANA
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: **GUYANA**			Total Funding: **$448,000**			
DELIVER Field Office	No. of local staff: 0		Presence established on: No Field Office			
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	x
	Integrated Systems	x	Contraceptive Security	x	Market Segmentation	
	Financing		EPI			
	HIV/AIDS	x	Essential Drugs	x		
Principal Client Organizations	USAID/Guyana; Centers for Disease Control; Ministry of Health/Materials Management Unit; Ministry of Health/Maternal and Child Health Office; Supply Chain Management Support Project; Guyana HIV/AIDS Reduction Project; Family Health International; Management Sciences for Health; Guyana Responsible Parenthood Association; Family Planning Association of Guyana					
DELIVER's Objectives	• Improve the public sector's commodity logistics system. • Strengthen public sector logistics capacity, especially in the MMU/MOH. • Coordinate with SCMS to improve commodity logistics system and commodity forecasting. • Enhance contraceptive security.					
Major Interventions	• Assisted with identification of strategies for MOH that could be implemented to improve commodity security without significant increases in funding or human resources. • Specified systems and guidelines for commodity management at facility, regional and national levels. • Developed order processing information system for use within MMU. • Initiated organizational development program at MMU. • Assisted USAID, CDC and GHARP and SCMS projects in planning, organizing and opening new Annex warehouse for HIV/AIDS commodities. • Developed standard operating procedures for the new Annex warehouse. • Worked with SCMS to develop work plan for improving commodity management over next five years, and planned orderly transition of activities to SCMS. • Conducted assessment of MOH contraceptive supply system and provided a national contraceptive forecast and contraceptive security assessment report with recommendations.					
Primary Results	• Development of procedures for MOH commodity management (2002). • Development of automated order processing and information system for stock management at MMU (2004). • Cooperation with FHI, MSH, SCMS project to establish new annex warehouse (2005-2006). • Cooperation with SCMS to develop work plan to improve commodity management system over next five years. • Prepared contraceptive security assessment report and National Contraceptive Forecast for 2006-2008 for USAID and MCH office, MOH.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | HONDURAS
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: Honduras						**Total Funding:** $1,065,000
DELIVER Field Office	No. of local staff: 2			Presence established: February 2005		
Technical Focus Areas	Family Planning	x		TB		Donor Coordination
	Integrated Systems			Contraceptive Security	x	Market Segmentation
	Financing			EPI		
	HIV/AIDS			Essential Drugs		
Principal Client Organizations	Health Secretariat/Department of Comprehensive Family Health, Honduran Association for Family Planning (ASHONPLAFA); coordination with UNFPA, UNICEF, PAHO and others.					
DELIVER's Objectives	• Strengthen the supply chain (financing, warehousing/storage, procurement, and distribution) of the Honduran Health Secretariat. • Assist the Government of Honduras and ASHONPLAFA with the process of procuring contraceptives through the preparation of Contraceptive Procurement Tables (CPTs). • Increase contraceptive and commodity security through the development and implementation of a National Contraceptive Security (CS) Strategy that includes the Inter-institutional CS Committee and allocation of funds in the national budget for purchasing contraceptives.					
Major Interventions	• Organize and assist with managing the Inter-Institutional CS committee. • Develop and promote the National CS Strategy. • Assist the Health Secretariat with the process of guaranteeing funding in the national budget for the purchase of contraceptives. • Develop and standardize the use of an automated inventory control program in the central and regional warehouses and in health centers (*Unidades de Salud*). • Assist the Health Secretariat in adapting and applying the "Methodological Strategy for Family Planning" at the national level. • Assist the Health Secretariat and ASHONPLAFA in conducting routine physical inventories required for preparation of the CPTs.					
Primary Results	• Conducted physical inventory of contraceptives every 6 months starting in June 2004, in order to prepare the CPTs. • Prepared semi-annual CPTs beginning in 2001, which serve to inform the procurement process for USAID and the Health Secretariat. • Training of personnel at the central level and from Health Region No. 3 in the use of the Logistics System Assessment Tool (LSAT) for contraceptives. • Strengthening of the inter-institutional Contraceptive Security Committee, which was able to meet on a monthly basis except during the change in government. • Finalization of the Founding Document for the Inter-Institutional Contraceptive Security Committee, required for its legal recognition by Ministerial Resolution. • Development of the National CS Strategy, along with its legal recognition by Ministerial Resolution and its adoption by all the member institutions and organizations comprising the CS Committee. • Adaptation of the National Strategy for Programming, Monitoring, and Evaluation of Family Planning Activities, which is now more functional and easy to apply. • Training of personnel from all levels of the Honduran Health Secretariat on the application of the Methodological Strategy for Family Planning.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

	• Development of the automated inventory control program currently used in the 20 regional warehouses and the central warehouse.

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | INDIA
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: India			**Total Funding:** $1,523,000			
DELIVER Field Office	No. of local staff: 3 (plus 2 short-term consultants)		Presence established on: 1997			
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	
	Integrated Systems	x	Contraceptive Security	x	Market Segmentation	
	Financing		EPI			
	HIV/AIDS		Essential Drugs	x		
Principal Client Organizations	Ministry of Health and Family Welfare (MHFW); Uttaranchal (state) Government, Dehradun					
DELIVER's Objectives	• Assist the MOHFW/Uttaranchal to streamline and strengthen the logistics system and specifically to develop the procurement policy and procedure manual. • Set-up logistics management information system (LMIS) in initially selected pilot districts and train staff.					
Major Interventions	• Design and set-up logistics information system o Develop a comprehensive, automated, statewide LMIS o Train staff in LMIS operations o Develop a uniform inventory control system o Develop a statewide logistics *Supply Procedures Manual* • Training and performance improvement o Develop a statewide training strategy o Establish a Logistics Management Training Resource Center in identified training agency • Strengthen Logistics Management Cell's (LMC) capacity to manage and monitor logistics management improvement activities • Organize logistics observational tours for policy and implementation level officials • Operationalize warehouses o Equip warehouses with storage and LMIS equipment o Ensure staffing; provide training and orientation o Develop storage guidelines and storekeeper's manual o Introduce automated inventory control system and storekeeping practices					
Primary Results	• Logistics Management Cell established and formalized within the MOH with staff trained in logistics supervision and monitoring in UP. • LMIS unit set-up and formalized with trained staff in Uttaranchal. • Several key logistics materials defining standard procedures and practices produced including the *Supply Procedure Manual*, *Trainers Manual,* and *Storekeepers' Manual.* • Forty-five field-based trainers from MOHFW trained in logistics management. • Four new regional warehouses operationalized with inventory control systems, guidelines and staff in place. • LMIS developed, implemented or field-tested in 10 districts (7 in UP and 3 in Uttaranchal).					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | JORDAN
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: JORDAN			**Total Funding:** $404,000			
DELIVER Field Office	No. of local staff:	O	Presence established on: no local field office			
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	
	Integrated Systems		Contraceptive Security	X	Market Segmentation	X
	Financing		EPI			
	HIV/AIDS		Essential Drugs			
Principal Client Organizations	Government of Jordan Reproductive Health program/ Ministry of Health MCH Directorate/ MOPH, POLICY Project					
DELIVER's Objectives	• Improve performance and build Jordanian capacity in contraceptive procurement, quantification, and LMIS management					
Major Interventions	• Support Contractive Security through - Updating of logistics standard operating procedures and curricula - Training to build local capacity in quantification, procurement, and maintenance of the JCLS - Technical support to national staff with quantification and procurement - Enhancement of contraceptive logistics software tools - Targeted assessments (market segmentation, logistics) • Develop a phase out plan for USAID contraceptive donations • Support Government of Jordan efforts to plan contraceptive procurement by assisting the contraceptive procurement committee to - Draft standard operating procedures for procurement of contraceptive commodities - Develop specifications for 2006 condom procurement					
Primary Results	• Government of Jordan public sector now manages contraceptive quantification with local capacity and has begun to fund procurement of all Depo-Provera and condom requirements for their program.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | MADAGASCAR
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: MADAGASCAR			**Total Funding:** $281,708			
DELIVER Field Office	No. of local staff: NA		Presence established on: NA			
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	
	Integrated Systems		Contraceptive Security	x	Market Segmentation	
	Financing		EPI			
	HIV/AIDS		Essential Drugs			
Principal Client Organizations	Ministry of Health/Family Planning and PSI					
DELIVER's Objectives	• Strengthening of reproductive health commodity security in Madagascar					
Major Interventions	• Evaluate the reproductive health commodity security • Elaborate an action plan for commodity security • Develop the national strategic plan to strengthen the contraceptive distribution channel • Develop a logistics plan leading to the integration of family planning commodities into essential drugs distribution channel • Review of the national strategic plan • Build national capacity in forecasting and procurement planning • Stock status survey					
Primary Results	• National strategic plan available • Logistics committee team members trained in forecasting and procurement planning • Functional logistics committee team in place • Mobilization of financial resources through donors and the Malagasy government • Integrated supply chain in place and functional • Constant monitoring of stock level • Review of minimum and maximum levels					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | MALAWI
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: MALAWI			**Total Funding:** $4,028,385			
DELIVER Field Office	No. of local staff: 6		Presence established on: 2000			
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	x
	Integrated Systems	x	Contraceptive Security	x	Market Segmentation	
	Financing		EPI			
	HIV/AIDS		Essential Drugs	x		
Principal Client Organizations	Ministry of Health and Population					
DELIVER's Objectives	• Behavior change enabled • Access to services increased • Health sector capacity strengthened • MOH service delivery systems strengthened • NGO, CBO, and FBO service delivery systems strengthened					
Major Interventions	• Strengthen awareness of Community Drug Committee responsibilities. • Provide training and TA to health facilities to facilitate accurate stock records, timely stock status reporting, and proper stock storage at health centers. • Conduct supportive visits to districts to facilitate proper usage of SCM Software in data entry, data management, compilation of stock status reports and processing of requisitions for drugs and medical supplies. • Conduct commodity availability survey (LIAT) and logistics system assessment (LSAT). • Conduct essential drug and contraceptive procurement forecast. • Undertake commodity security strategic planning. • Hold quarterly logistics meetings with stakeholders and other key partners. • Hold Annual Logistics Coordinating meeting. • Support MOH staff attendance at JSI/DELIVER Supply Chain Management training course. • Conduct tailor made DELIVER Supply Chain Management Logistics course. • Conduct refresher courses for pharmacy technicians and health workers. • Facilitate linkages between Warehouse Management System software (SIGMED) and Supply Chain Manager. • Support NGOs in accessing contraceptives, condoms and STI products. • Commission the National Stock Status Database.					
Primary Results	• Provision of computers and software to 17 district pharmacies; 3 computers already committed for central hospitals. • Fully functional computerized processing of MOH logistics data using Supply Chain Manager software from 400+ service delivery points (SDPs) by 26 districts for purposes of electronic ordering of contraceptives, STI products, essential health package drugs, and other products from RMS. • HTSS with an achievable plan to introduce National Stock Status Database (NSSD) having capability of computerized monitoring of consumption, order fill rates, and stock imbalances. • HTSS and CMS engaged in collaborative decision making to perform accurate quantification and forecasting of future needs.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

	• CMS capability to receive orders in timely fashion to facilitate rapid packing and dispatch of filled orders to service delivery points. • Enhanced accountability of logistics supply system through computerized product tracking capability and transparency at the district level. • Empowerment of drug committees through provision of IEC materials to facilitate their proper functioning. • Creation of the Logistics Unit at the Ministry of Health, in the Health Technical Support Services department to facilitate smooth functioning of the MHCLMS to support the implementation of the EHP, following the success of the RHLMIS at RHU • Improved the availability of contraceptives and other essential drugs at the SDPs. • 8 MOH key level staff attended the DELIVER Supply Chain Logistics course. • Facilitated Supply Chain Logistics course in Malawi for RMS staff, District Pharmacy Technicians & other supervisory level staff from various programs including some NGO'S where a total of 19 were trained. • Conducted LMIS TOT where 10 officers were accredited with the training of trainers for the MHCLMS and LMIS training for SDP staff where a total of 362 health workers were trained. • Conducted Refresher LMIS training for district and SDP staff and a total of 77 ministry of health and CHAM staff were trained. • Conducted Supply Chain Manager Software trainings to facilitate utilization of the software at the district level—a total of 60 pharmacy technicians trained so far. • Completed the rollout of the RHLMIS and later integrated to create MHCLMS. • Developed the 2006—2010 National CS Strategic Plan. • Improved short- and medium-term contraceptives forecast and identify the financial resources to meet those requirements. • Improved the MOH's ability to collect, compile, and analyze dispensed to users data for contraceptives and other vital health products. • Streamlined supply management and reporting procedures at the district and health facility level. • Improved access and distribution of contraceptives to the NGO, particularly non-health oriented organizations. • Raised visibility of logistics within the MOH through creation of the Logistics Unit and placement of staff who were directly supported by the project in technical terms. • Provided Quality Assurance, Monitoring and Management through conducting commodity availability surveys. • Conducted a process mapping exercise to eliminate non-value adding activities at the various levels in the supply chain. This resulted into one level being taken out and the eventual implementation of the direct delivery system.

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | MALI
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: MALI			Total Funding: **$3,066,697**			
DELIVER Field Office	No. of local staff: 2		Presence established on: August 1, 2002			
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	x
	Integrated Systems	x	Contraceptive Security	x	Market Segmentation	x
	Financing	x	EPI			
	HIV/AIDS		Essential Drugs	x		
Principal Client Organizations	Ministry of Health/ (MOH/DPM; Direction de la Pharmacie et du Médicament); Centrale d'Achat des Génériques (CAG), Pharmacie Populaire du Mali (PPM), Keneya CIWARA Project; AMPPF, SAVE the Children, regional health bureaus; coordination with UNFPA, and others					
DELIVER's Objectives	• Improve the health commodity logistics system performance. • Improve human capacity in logistics. • Strengthen reproductive health commodity security in Mali.					
Major Interventions	• Improving the health commodity logistics system performance by— - redesigning the integrated logistics system (max-min levels and review period), - establishing mechanisms to collect and report reliable dispensed-to-user data at the central level, - assisting in the automation of the collection and analysis of data to facilitate its use in the decision making process, and - estimating country requirement for reproductive health commodities based on data collected and reported from SDPs. • Improving human capacity in logistics through— - skill building among staff members from the recipient organizations to manage their stock, as well as to interpret and put to use the data collected through their logistics systems for forecasting and decision making; - supervision and OJT, and - pre-service training in health schools. • Strengthening reproductive health commodity security in Mali by— - assisting the MOH in implementing the Contraceptive Security Strategic Plan, - coordinating donors interventions, - assisting the MOH in conducting studies covering fields such as pricing policy, market segmentation, and others, as proposed by the Mali MOH; and following up on the milestones of DELIVER's assistance within the Mali CSEP.					
Primary Results	• Logistics system Improvement: - Development of new LMIS Forms to enhance reliable data collection and reporting. The newly designed RIV will allow capturing dispensed-to user data at SDP level. - National Physical Inventory. Conducted yearly. In 2005, the following sites were visited: 100% of DRCs, 100% of DVC, 75% of CSComs. In total, 85% of the national consumption volume has been capture through this activity. - CPTs: The National Forecasting Committee is now self-sustainable, conducting CPTs with minimal external technical assistance.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

- CYP jumped 18% between 2004 and 2005 which is a great performance because of the MOH large scale FP campaign and pipeline streamlining.

- Logistics performance improvement: Training and OJT conducted through the system as follows:
    - Central: 100% program managers are trained in LM
    - Régional: 100% of Regional Pharmacists and their assistants are trained
    - DRC: 100% of District Warehouse managers are trained in LM
    - DVC: 85% of District Warehouse keepers are trained in LM
    - CSCOM: 12% of CSCom warehouse keepers are trained in LM
    - Relais N/A—CBD Workers

- Contraceptive Security:
- Resource Mobilization: Increased contribution of UNFPA in CS activity funding over the course of the last four years.
- Commodity Procurement: USAID still committed to secure commodities. KfW to take over Social marketing commodities starting in December 2006.
- CS Advocacy effort with congressmen, journalists, and community leaders. They are new partners and CS champions in their respective areas.
- Synergy among CAs who actually funded some of DELIVER planned activities, like training collaboration and commodity availability in the field.
- CS Steering Committee is functional.

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | MOZAMBIQUE
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: MOZAMBIQUE			**Total Funding:** $4,857,000.00			
DELIVER Field Office	No. of local staff: 8		Presence established on: July 2004			
Technical Focus Areas	Family Planning		TB		Donor Coordination	
	Integrated Systems	x	Contraceptive Security	x	Market Segmentation	
	Financing		EPI			
	HIV/AIDS	x	Essential Drugs	x		
Principal Client Organizations	Ministry of Health (CMAM) Central de Medicamentos e Artigos Medicos					
DELIVER's Objectives	The goal of DELIVER activities was to build the capacity within CMAM and the MOH to strengthen the forecasting, procurement, storage, and distribution of essential drugs, contraceptives and HIV/AIDS commodities in Mozambique.					
Major Interventions	• Improve access to quality logistics management information through SIGM (Sistema Integrado de Gestão de Medicamentos). • Procure Antiretroviral medicines. • Conduct requirements analysis for the construction of a central warehouse to serve the northern part of the country in Nacala.					
Primary Results	• Managed from conception the development and implementation of a complex integrated drug management software system customized for Mozambique's public health sector (the Sistema Integrado de Gestão de Medicamentos, or SIGM), including: Definition of specifications and scope of work based on client needs; competitive bidding and awarding of a contract; management of subcontractors; review, analysis, and verification of progress on the scope of work; training of users; capacity building for CMAM technical staff and leadership; and post-implementation monitoring and support. • By the end of DELIVER, SIGM was successfully implemented at the three central warehouses managed by Medimoc, Medimoc headquarters, and CMAM headquarters, and had been used by CMAM and the central warehouses for conducting the second and third quarterly requisition cycles, as well as monthly distribution of ARVs. • DELIVER procured 10 different antiretroviral drugs from six suppliers, valued at $1,606,647, for donation to CMAM on behalf of USAID. • Coordinated with CMAM, other Mozambican government entities, international donors, multilaterals, and other CAs and organizations on improved health services delivery, product quality, and commodity security. Related DELIVER activities included preparing Contraceptive Procurement Tables (CPTs) and arranging to test condoms warehoused by Medimoc. • Provided technical support to CMAM´s Information Technology department, including hardware, software, troubleshooting, and training. • DELIVER provided two warehousing experts and a local architect to conduct a requirements analysis for the construction of a warehouse for storing medicines and consumable medical supplies in the port city of Nacala. The final report of this technical assistance presents the volumetric analysis, storage and materials handling specifications, architectural warehouse specifications, a proposed layout and a cost estimate for a new warehouse.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | NEPAL
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: **NEPAL**			Total Funding: **$1,240,000 (approximate)**			
DELIVER Field Office	No. of local staff: 9-11		Presence established on: 2000 (DELIVER)			
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	x
	Integrated Systems	x	Contraceptive Security	x	Market Segmentation	
	Information Systems	x	EPI	x	Financing	
	HIV/AIDS	x	Essential Drugs	x		
Principal Client Organizations	Ministry of Health and Population (MOHP)/Department of Health Services, Logistics Management Division, Family Health Division, Child Health Division, NCASC, NHTC, USAID, Nepal Family Health Program (NFHP), KfW, DFID, World Bank, UNFPA, UNICEF, JICA, etc.					
DELIVER's Objectives	The objective of DELIVER in Nepal was to provide technical assistance in the MOHP's health logistics activities towards making contraceptives and essential health commodities available at service delivery sites. • Strengthen contraceptive and other essential health commodity security efforts • Strengthen the logistics management information system (LMIS) • Streamline distribution. • Improve and strengthen human resource in health logistics. • Strengthen and implement pull system of essential drugs in districts. Store management (e. g., dejunking, auctioning of unusable commodities, and reorganization of stores). • Logistics system design for Nepal's HIV/AIDS and STD program. • Capacity building at the district and sub-district levels.					
Major Interventions	• Ilaka-level logistics intervention (Developing commodity management guidance for the community level (sub-district level) • Monitoring and evaluation of district health office effectiveness based on logistics data • Overseeing construction and operationalization of district stores built with funding from other donors (e.g., KfW, DFID) • Improving both design and functioning of the Ministry's logistics management information system (LMIS) and inventory system for regional medical stores • Warehouse modernization and renovation • Capacity building of the health personnel at the center, region, districts and at service delivery sites • System assessment for HIV/AIDS commodities • System design workshop for logistics for HIV/AIDS and STD program • Three-year forecast for HIV tests, ARVs, STI, and OI drugs					
Primary Results	• Increased availability of contraceptives and other key essential commodities in health facilities (increased year round availability of 7 key health commodities[1] at service delivery sites - 27 percent in 2001/02 to 71 percent in 2005/2006) • Strengthened LMIS reporting (maintained at 90% per quarter); improved and strengthened inventory management system at regional medical stores • Strengthened warehousing at national, regional, zonal, district, and sub-district level • Improved HRH capacity (total of 2,363 government personnel were trained in different types of health logistics training from 2003 with DELIVER support) • Improved adoption of advances in logistics (system design and implementation for HIV/AIDS logistics)					

[1] condoms, injectables, pills, oral rehydration salts, vitamin a, cotrimoxizole, and iron tablets

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | NICARAGUA
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: NICARAGUA			**Total Funding:** $1,031,000			
DELIVER Field Office	No. of local staff: 2		Presence established: January 2003			
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	x
	Integrated Systems	x	Contraceptive Security	x	Market Segmentation	x
	Financing	x	EPI	x		
	HIV/AIDS		Essential Medicines	x		
Principal Client Organizations	Ministry of Health, MINSA (Department of Standardization of Medical Commodities, Department of Quality Assurance). PROFAMILIA, Nicaraguan Social Security Institute (INSS), Medical Insurance Companies (EMPs), Nicaraguan Chamber of Health, and CANSALUD. Coordination with: UNFPA, PAHO, MSH-PRONICASS, QAP, PASMO, Federación NicaSalud, and Georgetown University.					
DELIVER's Objectives	• Improve the quality of information about contraceptive commodities. • Periodic monitoring of logistics indicators. • Integration of the logistics system for medical and contraceptive commodities. • Contraceptive security (CS). • Increase coverage and improve quality of contraceptive methods offered through PROFAMILIA. • Increase in family planning services available through the Medical Insurance Companies affiliated with the INSS. • Creation of reproductive health partnerships with other partners within USAID/Nicaragua.					
Major Interventions	• Development of a contraceptive logistics information system in 100% of the health centers (*Unidades de Salud*) of MINSA. • Implementation of the Medical Commodity Logistics Management Information System (SIGLIM) in 5 regions of the country in collaboration with MSH-PRONICASS. • Completion of qualitative and quantitative evaluations of logistics indicators. • Development of a contraceptive security plan for Nicaragua. • Establishment of a post-obstetric contraceptive strategy in 22 maternal and child health hospitals in the country. • Development of an efficient contraceptive logistics system for the 17 PROFAMILIA health clinics. • Assessment of the contraceptive logistics system in the 17 PROFAMILIA health clinics. • Assessment of the contraceptive logistics system and family planning service delivery in the Medical Insurance Companies contracted by the INSS. • Training on warehousing and inventory control for 28 Medical Insurance Companies. • Development of a communications strategy for the promotion of FP services in the Medical Insurance Companies. • Implementation of forecasting of contraceptive needs using PipeLine software in the 17 PROFAMILIA health clinics. • Semiannual updates of contraceptive forecasts for MINSA and PROFAMILIA. • Coordination with UNFPA on the process of procuring contraceptives to be donated by MINSA. • Monitoring and supportive supervision visits to MINSA health facilities, PROFAMILIA health clinics, and the Medical Insurance Companies affiliated with the INSS. • Coordination with QAP, UNFPA, UNICEF, OPS, NicaSalud, IRH, Banking of Health, and other					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

	USAID partners for the purpose of strengthening FP services. • Support the process of forecasting commodity needs for PASMO and NicaSalud. • Develop a local FP monitoring strategy for 9 regions in the country.
Primary Results	• The skills of MINSA personnel in guaranteeing sufficient supplies of contraceptives have improved by 100%, and supplies are determined according to consumer demand at the different levels of service. • Development has begun on an integrated information system for all medical commodities offered by MINSA. • PROFAMILIA is able to produce reliable forecasts that allow the organization to provide a wide variety of contraceptives. • An understanding of the situation of family planning services in the EMPs of the INSS and the development of an improvement plan for the delivery of these services. • Development of activities at the institutional and interagency levels geared toward guaranteeing contraceptive security in the country. • Procurement of contraceptives donated by USAID to MINSA and PROFAMILIA has been timely and efficient, and the required quantities are based on historical consumption.

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | NIGERIA
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: Nigeria			**Total Funding:** $5,603,0000			
DELIVER Field Office	No. of local staff:	6	Presence established on: October 31, 2005			
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	X
	Integrated Systems		Contraceptive Security	X	Market Segmentation	
	Financing		EPI			
	HIV/AIDS	x	Essential Drugs			
Principal Client Organizations	Government of Nigeria Federal Ministry of Health (FMOH)					
DELIVER's Objectives	From 2002 to 2006, DELIVER worked to improve the availability of contraceptives and selected HIV/AIDS program commodities by: • Improving logistics system performance. • Improving human capacity in logistics management. • Improving resource mobilization to ensure long-term reproductive health commodity security.					
Major Interventions	• Support Contractive Security through— - Support for Strategic Pathway for Reproductive Health Commodity Security assessments and workshops (joint with FMOH, UNFPA, and POLICY Project) - Develop logistics standard operating procedures for the national Contraceptive Logistics Management System (CLMS) - CLMS curricula for SDP, State/LGA, and federal levels - TOT for master trainers - Training of over 2,400 service providers and supervisors - Coordination with other programs (UNFPA, Packard Foundation USAID VISION Project, and COMPASS) to ensure national coverage of CLMS training - Storage and transportation studies - Integration feasibility assessment reviewing five vertical programs - "Informed buying" assessment - Comprehensive baseline and midterm logistics information assessments - Monitoring and evaluation plans, support for monitoring and supervision - Forecasting and procurement planning technical assistance and training. • Support HIV/AIDS commodity security through— - Antiretroviral therapy (ART) Stages of Readiness Assessment in 65 sites (14 public/51 private) rapid assessment - Logistics management system design and SOPs for ARVs and HIV test kits - Training curricula for logistics management of ARVs and HIV test kits - Logistics management training for over 200 national and facility personnel covering all ART centers in the federal system - Forecasting, pipeline monitoring, and procurement planning TA and training - National level quantifications and stock status surveys - Monitoring and evaluation plans, support for monitoring and supervision - Successfully advocated for the establishment of a Logistics Unit in the National AIDS and STI Control Program - Provided leadership in developing the logistics harmonization policy of the National HIV/AIDS Program					

March 2007
This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

Primary Results	• RHCS policy developed and adopted, joint implementation plans developed and implemented • CLMS implemented, training curricula developed and training cadres trained • Over 2,400 SDP staff from 12 states received training with DELIVER support with national roll out supported by coordinated stakeholder effort • CLMS re-evaluated, streamlined system piloted in three states • Monitoring and supervision planned and implemented • Measurable improvement in contraceptive storage and inventory management at all levels over LOP • Measurable improvement in contraceptive availability in the public sector attributed to the distribution of seed stock • Logistics systems designed for ARV drugs and HIV test kits • All Government of Nigeria ART sites trained on LMIS.

DELIVER
John Snow, Inc.
1616 North Ft. Myer Drive, 11th Floor
Arlington, VA 22209 USA
Tel: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | PARAGUAY
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: PARAGUAY							**Total Funding:** $732,455					
DELIVER Field Office	No. of local staff: 2						Presence established: October 2005					
Technical Focus Areas	Family Planning	x		TB			Donor Coordination	x				
	Integrated Systems			Contraceptive Security	x		Market Segmentation	x				
	Financing	x		EPI								
	HIV/AIDS			Essential Medicines								
Principal Client Organizations	Ministry of Health (MSPBS), Paraguayan Social Security Institute (IPS), coordination with the Contraceptive Security (CS) Committee, and UNFPA.											
DELIVER's Objectives	• Improve the contraceptive logistics system. • Improve contraceptive security. • Establish indicators to measure program impact.											
Major Interventions	• Qualitative and quantitative evaluations to measure changes in logistics system performance. • Revision and validation of the LMIS, printing, and dissemination. • Training of trainers on logistics, counseling, and contraceptive technologies. • Implementation of regional logistics training courses. • Capacity building/skills transfer in contraceptive forecasting for the MSPBS. • Develop the National Strategic Plan for Contraceptive Security. • Develop the plan for phase-out of contraceptive donations. • Facilitation of the approval process to procure contraceptives through UNFPA, by signing a Memorandum of Understanding (MOU). • Monitoring contraceptive shipment delivery schedules at the central level. • Donation of computer equipment to the country's 19 regions. • Donation of air conditioning units to 16 regional warehouses and to the central warehouse. • Donation of room dividing walls to six regional warehouses. • Negotiation for the relocation of the central warehouse.											
Primary Results	• Law enacted for protection of funding for procurement of contraceptives and birthing kits. • Approval of the National Contraceptive Security Plan. • Appointment of central level Logistics Director. • MOU signed between UNFPA and the MSPBS for the procurement of contraceptives. • Baseline logistics indicators established. • 230 people trained in logistics. • 19 regional managers empowered and conducting logistics training courses. • Regional warehouses with adequate space and temperature conditions. • 19 regions received computer equipment for monitoring of the logistics system.											

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | RWANDA
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: Rwanda			**Total Funding:** $1,766,193		
DELIVER Field Office	No. of local staff: 3		Presence established on: February 2002		
Technical Focus Areas	Family Planning	x	TB		Donor Coordination
	Integrated Systems		Contraceptive Security	x	Market Segmentation
	Financing		EPI		
	HIV/AIDS		Essential Drugs		
Principal Client Organizations	Ministry of Health and Population				
DELIVER's Objectives	• Ensure sustainability of contraceptive logistics system (CLS). • Strengthen public sector logistics capacity. • Frame and enhance contraceptive security.				
Major Interventions	• Design of the contraceptive logistics system • Develop and review of the national strategic plan to strengthen the contraceptive distribution channel • Create the logistics committee • Implement the design workshop recommendations • Develop the standard operating procedures and job aids • Train MOH and MOD health personnel • Draft the supervision reference tool • Monitor the distribution channel • Ensure constant availability of contraceptives at all levels • Forecast contraceptive need requirements • Mobilize resources to purchase contraceptives • Stock status survey • Sensitize local stakeholders on contraceptive security • Develop the 2006–2010 strategic plan				
Primary Results	• Increase in CPR from 4% to 10.3% • Functional logistics system in place • Stockouts reduced to less than 10% • 546 health personnel trained • Storage conditions improved (almost all facilities meet more than 75% of storage conditions) • System does not produce expiries • National strategic plan available • Logistics committee team in place and functioning improving • Mobilization of financial resources through donors • Constant monitoring of stock level • Review of minimum and maximum levels				

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | SOUTH AFRICA
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: SOUTH AFRICA			**Total Funding:** $3,666,000			
DELIVER Field Office	No. of local staff: 12		Presence established on:			
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	
	Integrated Systems		Contraceptive Security		Market Segmentation	
	Financing		EPI			
	HIV/AIDS	x	Essential Drugs			
Principal Client Organizations	South African National Department of Health					
DELIVER's Objectives	• Strengthen condom logistics. • Support for a balanced ABC prevention campaign. • Develop an ARV logistics system.					
Major Interventions	• DELIVER has focused its condom logistics interventions in four strategic areas: developing systems, implementing an LMIS, ensuring quality, and providing training to build capacity for managing condom supplies. • DELIVER worked collaboratively with the Khomanani campaign to launch a new public sector condom and to expand IEC efforts at the community level. Initial work on the new public sector condom was linked to the quality improvement activities already described. In addition, TASC/DELIVER worked with the AIDS Communication Team in the NDOH that manages the Khomanani campaign to develop a trade marked brand and develop a marketing strategy that was closely linked to key Khomanani strategies and messaging. (TASC is an earlier project.) • DELIVER was charged by the Chief Director of HIV/AIDS and TB to research local (South African) information technology solutions in the private sector that could be used to assist in the roll out of ARV drugs from a logistics perspective—knowing that drug security presents a major challenge.					
Primary Results	**Improved Logistics System** • Condom stockouts have plummeted to only 1 percent nationwide at the 186 male condom primary distribution sites throughout the country and 203 female condom sites that receive public sector condoms. • NGOs and private sector companies are now part of the national logistics system, which is managed through an automated LMIS that is updated from paper-based monthly reports submitted from primary distribution sites. • Public confidence in government-provided condoms has improved with the introduction and marketing of the high quality *choice* male condom. • 364 million *choice* condoms were procured and distributed in 2005, nearly double the number consumed in 2000. • Access to female condoms in particular has expanded from 29 research sites to over 200 public and NGO sites. • Quality assurance is now a standard component of the condom procurement and distribution system.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

Improved Human Capacity in Logistics

- Trained more than 2,800 individuals in logistics functions, including national and provincial program managers, warehouse and supply staff, and providers, as well as staff from NGOs and private companies that distribute public sector condoms.
- Assisted the NDOH human resources department to establish and recruit and train staff for four NDOH posts within the STI and HIV/AIDS Prevention Unit, to capacitate the unit to handle the contract management, quality assurance, warehousing, distribution and tracking for over 1 million condoms per day.
- Produced an LMIS training manual and related materials for distribution to the provinces to assist in integrated, district level cascading training efforts.
- Produced an LMIS operator manual to assist in the transfer of technical skills to newly recruited NDOH staff.
- Produced a comprehensive technical specifications manual for the LMIS for use by IT programmers in developing further enhancements to the LMIS over time.

Designed and Field Testing of STAT Secure Technology Advancing Treatment

Developed under TASC and field tested under DELIVER, the STAT system is a pioneering approach to managing ARV drugs while eliminating theft or diversion of these expensive commodities in the supply chain, particularly at the service delivery site. It involves the adaptation of innovative smart card and biometric technology that is available in banking and other private sector businesses and applying it to a public health setting.

STAT offers the following features:

- Positive and reliable identification of patients is enabled through fingerprint scan.
- Confidentiality is assured\ through fingerprint scan.
- Patient's smart card contains vital information so that a patient may receive treatment at any facility with smart card equipment.
- Provider's card stores information on the day's patient encounters.
- Patient encounter data can be uploaded at the end of the day to a central database, eliminating the need for a continuous on-line link.
- Card readers are powered by rechargeable batteries and can be used in home visiting programs.

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | TANZANIA
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: TANZANIA			**Total Funding:** $15,658,280			
DELIVER Field Office	No. of local staff: 7		Presence established on: September 2002			
Technical Focus Areas	Family Planning	x	TB	x	Donor Coordination	x
	Integrated Systems	x	Contraceptive Security	x	Market Segmentation	
	Financing		EPI			
	HIV/AIDS	x	Essential Drugs	x		
Principal Client Organizations	Ministry of Health and Social Welfare- Pharmaceutical Supply Unit, Ministry of Health and Social Welfare Reproductive and Child Health Section; National AIDS Control Program; Ministry of Health-Department of Hospital Services; USAID & CDC (PEPFAR), AED/T-MARC, Medical Stores Department, and Japan International Cooperating Agency					
DELIVER's Objectives	**Goal** • Ensure availability of essential health commodities at all levels of the public sector health care delivery system through an integrated supply chain. **Objectives** • Improve essential health commodity management at all levels of the public sector health care delivery system by designing and implementing a fully operational logistics system and logistics MIS that can manage increased categories and volumes of commodities. • Build individual and organizational capacity and capabilities for logistics system management and use of logistics MIS data at all levels of the Tanzanian public health sector.					
Major Interventions	Conducted a stock status assessment in February 2003. Developed, pilot-tested, and expanded an Integrated logistic system: • Facilitated the Training of Trainers for ILS roll-out and rolled-out ILS to Dodoma, Iringa, Mbeye, Ruvuma and Rukwa regions; worked with Ministry officials to facilitate Ministry roll-out of ILS in Coast and Dar es Salaam regions. • Provided hardware/software for MSD and recruit data entry personnel. • Developed, revised and printed ILS manuals, forms, and supplies. STI/PMTCT/ART Logistics System Development and Implementation: • Quantified STI/PMTCT products and provided logistics support to selected STI/PMTCT and ART sites, PMTCT Secretariat, TACAIDS/GFATM, C&TU, and CDC as solicited. Logistics Technical Assistance to Family Planning Services: • Prepared CPTs; assisted with maintenance of RCHS contraceptive distribution database; and provide logistics and financial support for LMIS refresher training for District MCH and DACC. Commodity Security (CS): • Prepared long-term contraceptive and condom forecast; developed CS framework; conducted CS stakeholder meeting; assisted RCHS with organization of monthly contraceptive security meetings; and enhanced PSU data analysis capacity (hardware, software, training. etc.). ARV Procurement: • Procured just over $7.8 million worth of ARV drugs for Tanzania					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

	• Completed quantifications and procurement plans and issued two task orders to Crown Agents to complete the procurement; and updated/refined the quantification spreadsheets as necessary. Logistics Management Capacity Building • Developed management tools and process map of clearing procedures for the MOH and MSD. • Sponsored Chief Pharmacists offshore logistics training in Nairobi. Routine Systems Monitoring • Assisted with coordinating donor inputs and program managers with routine system performance reports; provided ongoing logistics support to facilities. Monitoring and Evaluation • Conducted a Stock Status Survey (Feb 2003) and LIAT of the pilot ILS (Sept 2005); Conducted a qualitative logistics assessment prior to the ILS pilot. Other • Acted as the funding mechanism for USAID's President's Malaria Initiative and additional child health work with Rene Salgado.
Primary Results	• Seven of the 21 regions in Tanzania now covered by the ILS, accounting for a total of 33.51 percent of the population. • Twenty trainers and approximately 2,300 staff involved in logistics activities at health centers, dispensaries, and hospitals trained in the ILS. • Pharmaceutical Supplies Unit (PSU) strengthened and clearly designated as owner and implementer of the ILS. • ILS *subsystem* designed for STI drugs, laboratory supplies, and HIV test kits and introduced in indent and kit system regions. • LMIS and reordering system designed for ARVs and incorporated into ART training module. • Condoms included in ILS—managed through MCH coordinators in kit and indent regions—included in annual CPTs, and stock status tracked during monthly contraceptive security meetings. • Contraceptive security improved through coordination of the annual CPT exercise, MTEF submissions, and annual stakeholders' consultative meetings as well as monthly contraceptive security meetings.

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | UGANDA
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: UGANDA			**Total Funding:** $9,402,434			
DELIVER Field Office	No. of local staff: 23		Presence established on: 2001			
Technical Focus Areas	Family Planning	x	TB	x	Donor Coordination	x
	Integrated Systems	x	Contraceptive Security	x	Market Segmentation	
	Financing	x	EPI	x		
	HIV/AIDS	x	Essential Drugs	x		
Principal Client Organizations	Ministry of Health, National Medical Stores, Joint Medical Stores, Joint Clinical Research Council, and health sector NGOs					
DELIVER's Objectives	• Establish effective logistics systems for expanded distribution of HIV/AIDS commodities. • Establish effective logistics system for distribution of HIV tests, lab reagents and consumables. • Establish effective logistics system for distribution of TB drugs. • Establish effective logistics system for vaccines and related EPI commodities. • Improve logistics system for essential drugs and contraceptives. • Improve warehouse management and distribution in NMS. • Improve use of information technology to support management of logistics information. • Improve capacity in MOH to monitor and manage health logistics system. • Assist MOH to increase drug financing and drug availability.					
Major Interventions	• Policy inputs in logistics to change essential drug system to a "pull" demand system and to create working logistics systems for ARVs, HIV test kits, TB drugs, and laboratory supplies. • Assisted MOH in quantification and in successful financial support proposals for ARVs, HIV test kits, vaccines, contraceptives, TB drugs, and laboratory reagents and consumables. • Designed, tested and introduced to the MOH system the logistics forms for ARVs, test kits, essential drugs, TB drugs, vaccines, contraceptives, condoms, and lab supplies and set up computer programs to support these systems. • Trained all ARV providers and produced logistics management procedure manual for ARVs, Nevirapine and HIV tests. • Established lab supply credit line through NMS and trained lab staff in labs on new lab logistics supply system. • Trained 3,500 health workers in all MOH and NGO facilities in logistics system for essential drugs and contraceptives. • Trained TB program staff in 44 districts on new logistics system for TB drugs, established central logistics management information system processing logistics data from 1,917 SDPs. • Assisted national level warehouses to improve efficiency and distribution systems.					
Primary Results	• Successful change to "pull" demand system for essential drugs and contraceptives allowed greater local control of product choices and increased product access. • Value of drug supply through MOH system increased by 4.5 times. • National Medical Stores made the transition from a "pass-through" warehouse to a unit packing individual orders for over 1,900 MOH facilities every two months. • Logistics considerations now part of MOH program planning process, based on logistics data. • MOH free ARV drugs now reaching over 30,000 patients monthly at 220 sites. • HIV tests went from 30,000 in 2001 to over 1 million in 2006 at more than 460 sites.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

	• National system providing laboratory supplies and reagents to all MOH and NGO labs. • TB drug logistics system totally re-designed to use logistics data to track and distribute TB drugs. • UNEPI vaccine systems improved and national warehouse made more efficient. • Contraceptives integrated into essential drugs logistics system and distributed every 2 months.

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | UKRAINE
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: **UKRAINE**			Total Funding: **$310,000**			
DELIVER Field Office	No. of local staff: 0		Presence established on: No Field Office			
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	x
	Integrated Systems		Contraceptive Security	x	Market Segmentation	
	Financing		EPI			
	HIV/AIDS	x	Essential Drugs			
Principal Client Organizations	USAID/Ukraine, Belarus, and Moldova; Ministry of Health/National AIDS Center; Ministry of Health/Maternal and Child Health Office; Ukraine Reproductive Health Network (URHN); UkrmedPostach; International HIV/AIDS Alliance; UNICEF; WHO; World Bank (AIDS Epidemic Control Project); GTZ (Knowledge Hub for Care and Treatment); Medecins Sans Frontieres (MSF); POLICY Project					
DELIVER's Objectives	**Reproductive Health/Contraceptive Security**: To conduct an assessment of contraceptive availability and related RH and FP issues, and provide recommendations for future USAID reproductive health activities aimed at improving contraceptive security in Ukraine. **HIV/AIDS**: To better inform USAID/Ukraine about the current logistics systems, procurement and information systems, and financing mechanisms of the Government and partners for HIV/AIDS drugs and other commodities - as part of USAID/Ukraine's HIV/AIDS 2003-2008 strategy.					
Major Interventions	**RH/Contraceptive Security (2004):** Assessment completed to determine: •Availability of contraceptives through the public and private sectors •Relative availability in urban and rural areas •Recommendations for reducing barriers to access •Current movement of contraceptives from initial procurement to end users (clients) in the public sector •The potential for adding contraceptives to the distribution systems of other essential drugs and commodities •Options for public/private approaches to contraceptive supply, government procurement, targeting, and donations from various donors •An estimation of the future need for contraceptives •Potential questions for inclusion in a rider survey for an upcoming DHS survey. **HIV/AIDS (2005):** Assessment and follow-up trip completed to determine: •Capacity of the logistics system to support rapid expansion of the HIV/AIDS Control program, including inventory control, logistics management information systems, and distribution (transport and storage) •Capacity of the logistics system to support provision of PMTCT commodities supplied through various funding sources, including international tendering and/or local purchase •Capacity of the MOH to procure ARV drugs within an expanded program •ARV drug pricing and tax issues •International HIV/AIDS Alliance (IHAA) roles and responsibilities as the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM)'s Principal Recipient •Key transition strategies for scaling up the ART role of the MOH and scaling down the ART role of the IHAA •Policy and human resources issues in support of the HIV/AIDS Control program •Preparation of an action plan to support and expand the HIV/AIDS Control program.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

Primary Results	• Provided specific recommendations to USAID, the MOH, and IHAA regarding the national HIV/AIDS program in the areas of policy, procurement, and supply chain management.

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | WEST AFRICA
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: West Africa/WAI			**Total Funding:** $2,822,000			
DELIVER Field Office	No. of local staff: N/A		Presence established on: January 2003			
Technical Focus Areas	Family Planning	x		x	Donor Coordination	x
		x	Contraceptive Security	x		x
	Financing	x		x		
	HIV/AIDS	x	Essential Drugs	x		
Principal Client Organizations	• Ministries of Health in Cameroon, Burkina Faso, Togo, and Sierra Leone • Regional Institutions: WAHO, IRSP, CESAG • Global Fund countries in West and Central Africa					
DELIVER's Objectives	• To provide technical assistance to Burkina Faso, Cameroon, and Togo to estimate their contraceptive needs and to develop their strategic plans for contraceptives. • To provide technical assistance in contraceptive security to other countries at the request of USAID/West Africa. • To provide technical assistance to the West African Health Organization (WAHO) to sensitize ECOWAS health ministers in reproductive health commodity security and develop a sub-regional reproductive health commodity security strategic plan.					
Major Interventions	• Estimate commodities requirements for USAID and other donors. • Develop commodity security strategic plans for individual countries. • Assist WAHO to develop an RH commodity security strategy. • Train in country and regional institutions staff in commodity security and logistics. • Advocate for contraceptive security with high level decision and policy makers both at the regional and country levels. • Carry out logistics assessments. • Carry out commodity security assessments.					
Primary Results	• Country strategic plans developed in Burkina, Cameroon,Togo, and Sierra Leone. • Sub-regional strategic plan developed for ECOWAS under WAHO leadership. • Contraceptive products available in countries as a result of an estimation of requirements in Cameroon, Togo, Sierra Leone, and Burkina Fasp.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | YEMEN
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: YEMEN			**Total Funding:** $350,000				
DELIVER Field Office	No. of local staff:	0	Presence established on: No field office Focus Governorates: Al Jawf, Amjran, Marib, Sa'ada, Shabwa				
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	x	
	Integrated Systems		Contraceptive Security	x	Market Segmentation		
	Financing		EPI				
	HIV/AIDS		Essential Drugs				
Principal Client Organizations	Ministry of Public Health & Population (MOPHP); Ministry of Health/ Reproductive Health Directorate (MOH/DRH); Reproductive Health commodity security committee; coordination with UNFPA, GTZ, PHR+ Catalyst, and others						
DELIVER's Objectives	• Improve planning and management capabilities at governorate level and below. • Ensure that essential commodities are available in health care facilities at pilot sites. • Strengthen the skills of MOPHP personnel in managing the supply of essential commodities.						
Major Interventions	• Improve the performance of the RH Directorate at central level by— - Introducing procedures and software to routinely update forecasts and monitor procurement and pipeline status. - Examining central level storage facility and proposing improved layout and storage protocols. - Modifying and printing new storage and distribution guidelines. - Producing an Arabic-enabled version of the DELIVER pipeline monitoring and procurement planning (PipeLine) software. • Improve the performance of the Governorate and lower levels through— - In-depth assessment of MOPHP commodity management system. - Partnering with key counterparts to ensure that assessment tools and intervention strategies are aligned across all Governorates. - Reporting on strengths and challenges identified in current system. - Proposing strategies for addressing deficiencies. • Support contraceptive security: - Updating PipeLine database to inform near-term procurement effort. - Supporting donor coordination. • Investigate Contraceptive quality concerns: - Researching conceptive quality reports and suggest strategies for addressing concerns						
Primary Results	• Clarified vision of current logistical system that is aligned with partner activities nationwide, including key strengths and challenges. • Proposed warehouse design for improved commodity storage at central level. • Arabic-enabled software tool that enables improved procurement management by local program managers. • Short-term procurement needs calculated to prevent supply imbalances.						

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID | ZAMBIA
FROM THE AMERICAN PEOPLE

COUNTRY FACT SHEET

Country: ZAMBIA			**Total Funding:** $15,729,988			
DELIVER Field Office	No. of local staff: 13		Presence established on: September 2005			
Technical Focus Areas	Family Planning		TB		Donor Coordination	x
	Integrated Systems	x	Contraceptive Security		Market Segmentation	
	Financing		EPI		Procurement	x
	HIV/AIDS	x	Essential Drugs			
Principal Client Organizations	Ministry of Health, Medical Supplies Limited, Center for Infectious Disease Research in Zambia, Church Health Association of Zambia, Catholic Relief Services/ AIDS Relief, and USAID					
DELIVER's Objectives	• Required ARVs and HIV tests quantified and procured in a manner consistent with resources and policies for scaling up. • Forecasting and procurement planning mechanisms for ARVs and HIV tests in place at the central level. • Inventory control procedures, a logistics management information system (LMIS) and storage and distribution policies and procedures established for all levels for ARVs and for HIV tests. • Logistics policies and procedures for managing ARVs and HIV tests documented and disseminated. • Appropriate personnel in the MOH trained in the logistics policies and procedures for ARVs and HIV Tests in order to implement the new supply chains. • Appropriate short and long term mechanisms in place to monitor the supply chains for ARVs and HIV tests and adjustments made, as needed.					
Major Interventions	• Carried out continuous technical assistance in the area of quantification and forecasting. • Gathered data for, managed, and taught key client organizations how to use the PipeLine database in order to have continuous input for the analysis of the National ARV and HIV Test supply situations. • Managed the procurement and receipt of USAID-funded ARVs and HIV tests. • Sought and obtained buy-in for the development of a clearly outlined, documented, and GRZ-approved logistics system for ARVs and for HIV tests. • Held stakeholders' meetings for information and collaboration purposes. • Carried out system design workshops for ARVs and then for HIV tests. • Developed detailed standard operating procedures for the two systems. • Designed detailed curricula and materials to implement the two systems. • Trained trainers. • Carried out both national and pilot training programs.					
Primary Results	• Strengthened logistics systems for the management of ARVs and HIV tests were implemented. • A logistics management unit (LMU) was established at the Medical Stores Limited warehouse. • An automated national inventory control system and logistics management information system were established within the LMU. • Key procurement organizations were coordinated to provide input to national procurement planning.					

MARCH 2007

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

USAID FROM THE AMERICAN PEOPLE | ZIMBABWE

COUNTRY FACT SHEET

Country: ZIMBABWE			**Total Funding: US $7,437,000**			
DELIVER Field Office	No. of local staff: 7		Presence established on: September 2002			
Technical Focus Areas	Family Planning	x	TB		Donor Coordination	x
	Integrated Systems		Contraceptive Security	x	Market Segmentation	
	Financing		EPI			
	HIV/AIDS	x	Essential Drugs			
Principal Client Organizations	Zimbabwe National Family Planning Council (ZNFPC), Ministry of Health and Child Welfare (MOHCW), United States Agency for International Development, Centers for Disease Control					
DELIVER's Objectives	• Improve availability of HIV/AIDS condoms in public sector health facilities. • Procure and distribute USG funded ARV drugs for selected Phase I sites. • Provide TA and strengthen public sector capacity in supply chain management of HIV/AIDS commodities in the national program. • Strengthen Phase I sites clinical readiness to implement ART. • Support and monitor Phase 1 sites during start-up of ART. • Strengthen sites' ability to manage ARV medicines.					
Major Interventions	Improve the availability of condoms: • Produced public sector procurement tables (CPTs). • Coordinated USAID male condom shipments. • Coordinated DTTU system implementation. • Designed and implemented DTTU system automated LMIS. • Reviewed social marketing CPTs. Improve the availability of ART and ARVs: • Procured ARV drugs and facilitate customs clearance, storage; distribution and ARV registration. • Conducted ART site assessments. • Designed and implemented an interim ARV distribution system. • Conducted LIAT for HIV/AIDS commodities. • Conducted ART program review. • Developed a concept paper for the provincial ART expansion model and tool to assess provincial suitability to pilot the model • Conducted clinical ART quality assessments. • Facilitated HIV/AIDS training for local clinicians.					
Primary Results	• DTTU system distributed to 99% of all health facilities every trimester and has achieved stock out rates of less than 5%. • Delivered nine different ARV formulations to support the ART program in Zimbabwe at a cumulative value of USD $1,130,523; ARV drugs are provided in full supply for 500+ patients at the Phase I sites • The national program has an interim ordering and distribution subsystem for HIV&AIDS					

March 2007
This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER No Product? No Program. Logistics for Health

	commodities and is forming a special unit to mange these commodities. • The Phase I ART sites have standard operating procedures and are correctly following national guidelines. • All five sites monitored and are now decentralizing stable patients to lower level facilities; 170 providers have been trained in OI/ART management. • Phase I sites are able to manage ARVs using project designed forms and procedures. • Computer equipment, reference material and other resources have been provided to selected sites to improve quality of care.

DELIVER
John Snow, Inc.
1616 North Ft. Myer Drive, 11th Floor
Arlington, VA 22209 USA
Tel: 703-528-7474
Fax: 703-528-7480
www.deliver.jsi.com

APPENDIX 2
FINAL PUBLICATIONS LIST

I. COUNTRY-RELATED DOCUMENTS

Bangladesh

Assessment of USAID/Bangladesh Component of DELIVER Project: A Success to Build On
Bornbusch, Alan, J. Timothy Johnson, and Sharmila Raj. 2006. *Assessment of USAID/Bangladesh Component of DELIVER Project: A Success to Build On*. (Prepared for the USAID Mission, Bangladesh, Office of Population, Health and Nutrition.) Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Bangladesh Behavior Change Communication Communications Strategy for Contraceptive Security
Wright, Christopher. 2003. *Bangladesh Behavior Change Communication Communications Strategy for Contraceptive Security.* John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Bangladesh Bidder's Guide
Woodle, Dian, Todd Dickens, and Jennifer Fox. 2003. *Bangladesh Bidder's Guide.* Prepared by PATH. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Bangladesh Contraceptive Market Segmentation Analysis
Chowla, Deepika, David Sarley, Susan Scribner, Ruth Berg, and Asma Balal. 2003. *Bangladesh Contraceptive Market Segmentation Analysis.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Bangladesh: Final Country Report
DELIVER. 2007. *Bangladesh: Final Country Report*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

A Consequence of Success: The Issue of Contraceptive Security in Bangladesh
Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh. 2004. *A Consequence of Success: The Issue of Contraceptive Security in Bangladesh.* Dhaka: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Contraceptive Requirements, Bangladesh: 2006–2010
Hudgins, Anthony A. 2005. *Contraceptive Requirements, Bangladesh: 2006–2010.* Dhaka: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Facilitator Guide for NGO Contraceptive Security and Logistics (Including Complete Participant Guide for Group Training)
DELIVER. 2006. *Facilitator Guide for NGO Contraceptive Security and Logistics (Including Complete Participant Guide for Group Training).* Dhaka: DELIVER, for the U.S. Agency for International Development.

Logistics Line (DELIVER Newsletter), Issue 1
John Snow, Inc./DELIVER. 2005. *Logistics Line (DELIVER Newsletter), Issue 1.* Dhaka: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Logistics Line (DELIVER Newsletter), Issue 2
DELIVER. 2006. *Logistics Line (DELIVER Newsletter), Issue 2.* Dhaka: DELIVER, for the U.S. Agency for International Development.

Manual on FWA Register
Hossain, Muhd. Anwar. 2005. *Manual on FWA Register.* Dhaka, Bangladesh: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Procurement Primer for Health and Family Planning Program in Bangladesh
Woodle, Dian, Todd Dickens, and Jennifer Fox. 2003. *Procurement Primer for Health and Family Planning Program in Bangladesh.* (Prepared by PATH for John Snow, Inc./DELIVER.) Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Projected Contraceptive Commodity Requirements 2000–2015
Islam, M. Ataharul, and Nitai Chakraborty. 2001. *Projected Contraceptive Commodity Requirements 2000–2015.* Dhaka: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Public and Private Sector Collaboration in Providing Contraceptive Security
Kabir, Md. Jahangir. 2004. *Public and Private Sector Collaboration in Providing Contraceptive Security.* Dhaka: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

On Track: Developing a Strategy for Contraceptive Security in Bangladesh (also in Spanish)
John Snow, Inc./DELIVER. 2002. *On Track: Developing a Strategy for Contraceptive Security in Bangladesh.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

On Track: New Procurement Manuals Guide Long-Term Contraceptive Procurement in Bangladesh
John Snow, Inc./DELIVER. 2003. *On Track: New Procurement Manuals Guide Long-Term Contraceptive Procurement in Bangladesh.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Report on Study on Availability of Contraceptives at Service Delivery Point
Centre for Development Services (CDS). 2005. *Report on Study on Availability of Contraceptives at Service Delivery Point (SDP) Level.*(Prepared for John Snow, Inc./DELIVER.) Dhaka: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Benin

On Track: Building Support for Contraceptive Security in Benin
John Snow, Inc./DELIVER. 2002. *On Track: Building Support for Contraceptive Security in Benin.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Bolivia

Bolivia: Análisis de Segmentación del Mercado
DELIVER. 2005. *Bolivia: Análisis de Segmentación del Mercado*. La Paz, Bolivia: John Snow, Inc./DELIVER, para la Agencia de los Estados Unidos para el Desarrollo.

Bolivia: Final Country Report: Executive Summary
DELIVER. 2007. *Bolivia: Final Country Report: Executive Summary*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Bolivia: Informe Final del País
DELIVER. 2007. *Bolivia: Informe Final del País*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Contraceptive Security in Bolivia: Assessing Strengths and Weaknesses (also in Spanish)
Taylor, Patricia, Nora Quesada, Patricia Saenz, Karina Garcia, Cynthia Salamanca, Patricia Mostajo, and Varuni Dayaratna. 2003. *Contraceptive Security in Bolivia: Assessing Strengths and Weaknesses.* Arlington, Va.: John Snow, Inc./DELIVER, and Washington, DC: Futures Group/POLICY II, for the U.S. Agency for International Development.

On Track: Preservice Logistics Training in Bolivia
John Snow, Inc./DELIVER. 2004. *On Track: Preservice Logistics Training in Bolivia.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Políticas, Prácticas y Opciones sobre la Adquisición de Insumos Anticonceptivos: Bolivia
Quesada, Nora, Wendy Abramson, Verónica Siman Betancourt, Varuni Dayaratna, Jay Gribble, David Sarley, Carlos Lamadrid, Nadia Olson, y Juan Agudelo. 2006. *Políticas, Prácticas y Opciones sobre la Adquisición de Insumos Anticonceptivos: Bolivia.* Arlington, Va.: DELIVER, y Washington, D.C.: USAID | Iniciativa de Políticas en Salud OT1 para la Agencia de los Estados Unidos para el Desarrollo Internacional.

State of the Practice Brief: Bolivia: Meeting the Millennium Challenge: Women and Their Families Can Survive and Thrive Through Expanded Access to Family Planning
DELIVER. 2006. *State of the Practice Brief: Bolivia: Meeting the Millennium Challenge: Women and Their Families Can Survive and Thrive Through Expanded Access to Family Planning.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Brazil

Contraceptive Procurement Policies, Practices, and Lessons Learned: Brazil
Studart, Cecilia, Blanka Homolova, Miguel Fontes, Rodrigo Laro, and Nadia Olson. 2006. *Contraceptive Procurement Policies, Practices, and Lessons Learned: Brazil.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Burkina Faso

Burkina Faso: Evaluation of the Logistics System for Antiretroviral Drugs
Roche, Gregory, Abdourahmane Diallo, Paul Dowling, and Suzanne Church. 2004. *Burkina Faso: Evaluation of the Logistics System for Antiretroviral Drugs*. John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Colombia

Políticas, Prácticas y Lecciones Aprendidas en la Adquisición de Métodos Anticonceptivos: Colombia
Agudelo, Juan, Nora Quesada. 2006. *Políticas, prácticas y lecciones aprendidas en la adquisición de métodos anticonceptivos: Colombia*. Bogotá, Colombia: DELIVER, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

Democratic Republic of the Congo

Evaluation du Système de Gestion Logistique des Contraceptifs au Sud Maniema en République Démocratique du Congo

Ouédraogo, Youssouf, Motomoke Eomba, Jennifer Antilla, 2006. *Evaluation du Système de Gestion Logistique des Contraceptifs au Sud Maniema en République Démocratique du Congo.* Arlington, Va.: DELIVER, pour l'Agence des États-Unis pour le Développement International.

Domincan Republic

República Dominicana: Diagnóstico Sobre La Disponibilidad Asegurada De Insumos Anticonceptivos (DAIA)

Agudelo, Juan, Erin Hasselberg, Ramón Orlando Jiménez, Eleodoro Pérez Sierra, Viriato Acosta. Marzo 2005. *República Dominicana: Diagnóstico Sobre La Disponibilidad Asegurada De Insumos Anticonceptivos (DAIA).* Arlington, Va: DELIVER, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

Políticas, Prácticas, y Opciones para la Adquisición de Insumos Anticonceptivos: República Dominicana

Agudelo, Juan, Varuni Dayaratna, Cristian Morales, Nora Quesada, David Sarley, Wendy Abramson, Jay Gribble, Carlos Lamadrid, Nadia Olson, y Verónica Siman Betancourt. 2006. *Políticas, Prácticas, y Opciones para la Adquisición de Insumos Anticonceptivos: República Dominicana.* Arlington, Va.: DELIVER, y Washington, D.C.: USAID | Iniciativa de Políticas en Salud Orden de Trabajo 1, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

State of the Practice Brief: Dominican Republic: Guaranteeing Universal Access to Family Planning

DELIVER. 2006. *State of the Practice Brief: Dominican Republic: Guaranteeing Universal Access to Family Planning.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Ecuador

Ecuador: Diagnóstico Sobre La Disponibilidad Asegurada De Insumos Anticonceptivos (DAIA)

Uribe, Bernardo, Nora Quesada, Sharon Soper, Juan Agudelo, Lino Martinez. Julio 2005. *Ecuador: Diagnóstico Sobre La Disponibilidad Asegurada De Insumos Anticonceptivos (DAIA).* Arlington, Va: John Snow, Inc./DELIVER, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

Políticas, Prácticas y Opciones para la Adquisición de Insumos Anticonceptivos: Ecuador

Quesada, Nora, Verónica Siman Betancourt, Wendy Abramson, Varuni Dayaratna, Jay Gribble, David Sarley, Carlos Lamadrid, Nadia Olson y Juan Agudelo. 2006. *Políticas, Prácticas y Opciones para la Adquisición de Insumos Anticonceptivos: Ecuador.* Arlington, Va.: DELIVER y Washington, DC: USAID | Iniciativa de Políticas en Salud, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

State of the Practice Brief: Ecuador: Constructing a Secure Safety Net for Mothers and Children through Guaranteed Access to Basic Health Care

DELIVER. 2006. *State of the Practice Brief: Ecuador: Constructing a Secure Safety Net for Mothers and Children through Guaranteed Access to Basic Health Care.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

El Salvador

On Track: Achieving Contraceptive Security in El Salvador (also in Spanish)
John Snow, Inc./DELIVER. 2004. *On Track: Achieving Contraceptive Security in El Salvador.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Políticas, Prácticas y Opciones para la Adquisición de Insumos Anticonceptivos: El Salvador
Siman Betancourt, Verónica, Nora Quesada, Wendy Abramson, David Sarley, Varuni Dayaratna, Jay Gribble, Carlos Lamadrid y Nadia Olson. 2006. *Políticas, Prácticas y Opciones para la Adquisición de Insumos Anticonceptivos: El Salvador*. Arlington, Va.: DELIVER y Washington, DC: USAID | Iniciativa de Políticas en Salud, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

State of the Practice Brief: El Salvador: Securing Essential Contraceptive Supplies for All Who Need Them
DELIVER. 2006. *State of the Practice Brief: El Salvador: Securing Essential Contraceptive Supplies for All Who Need Them.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Ethiopia

Contraceptive Inventory and Logistics System Survey: July 2001
Alt, David, Bernardo Uribe, and Lea Teclemariam. 2001. *Contraceptive Inventory and Logistics System Survey: July 2001*. Addis Ababa: Federal Democratic Republic of Ethiopia Ministry of Health.

Contraceptive Inventory and Logistics System Survey
Family Health Department, Ministry of Health, Federal Democratic Government of Ethiopia: 2006. *Contraceptive Inventory and Logistics System Survey: January 2006*. Addis Ababa: Federal Democratic Republic of Ethiopia Ministry of Health.

Ethiopia: Final Country Report
DELIVER. 2007. *Ethiopia: Final Country Report*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Ghana

Assessment of the Ghana Laboratory Logistics System and Services
Addo, Nii Akwei, Rowland Adukpo, Veronica Bekoe, Samuel Boateng, Ronald Brown, Egbert Bruce, Aoua Diarra, Parfait Edah, Wendy Nicodemus, and Festus Sroda. 2006. *Assessment of the Ghana Laboratory Logistics System and Services*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

DELIVER Ghana Transportation Study
Crown Agents Consultancy. 2002. *DELIVER Ghana Transportation Study, Report*. Arlington, Va.: Crown Agents Procurement and Consultancy Services.

Ghana: Decentralization and the Health Logistics Systems
Bossert, Thomas, Diana Bowser, Johnnie Amenyah, and Rebecca Copeland. 2004. *Ghana: Decentralization and the Health Logistics Systems*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Ghana: Final Country Report
DELIVER. 2007. *Ghana: Final Country Report*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Ghana HIV/AIDS Commodity Security: A National Strategy 2006-2010
Ministry of Health (MOH), Ghana. 2006. *Ghana HIV/AIDS Commodity Security: A National Strategy 2006-2010.* Ghana: MOH.

Ghana: Pharmaceutical Pricing Study, Policy Analysis and Recommendations
Sarley, David, Hany Abdallah, Raja Rao, Peter Gyimah, Joycelyn Azeez, and Bertha Garshong. 2003. *Ghana: Pharmaceutical Pricing Study, Policy Analysis and Recommendations*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Ghana: Preparing for the Management of Antiretroviral Drugs—Findings and Recommendations for the ARV Assessment Team
Felling, Barbara, Johnnie Amenyah, Amos Sam-Abbenyi, Kwasi Torpey, Phyllis Ocran, Adwoa Agyei, Maj. Regina Akai-Nettey (Ret.), and Felix Yellu. 2003. *Ghana: Preparing for the Management of Antiretroviral Drugs—Findings and Recommendations for the ARV Assessment Team.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Ghana: Process Mapping. First Step to Reengineering the Health Supply Chain of the Public Sector System
Brumburgh, Scott, and Sangeeta Raja. 2001. *Ghana: Process Mapping. First Step to Reengineering the Health Supply Chain of the Public Sector System*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Ghana: Quantitative and Qualitative Logistics System Assessment (LIAT and LSAT) Report 2006
McLaughlin, Colleen, Erika Ronnow, Erin Shea, Parfait Edah, and Egbert Bruce. 2006. *Ghana: Quantitative and Qualitative Logistics System Assessment (LIAT and LSAT) Report 2006*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Meeting the Commodity Challenge: The Ghana National Contraceptive Security Strategy
Ministry of Health (MOH), Ghana. 2004. *Meeting the Commodity Challenge: The Ghana National Contraceptive Security Strategy 2004–2010*. Ghana: MOH.

On Track: Developing a Strategy for Contraceptive Security in Ghana
John Snow, Inc./DELIVER. 2002. *On Track: Developing a Strategy for Contraceptive Security in Ghana*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

On Track: How to Cut 100 Steps from Your Contraceptive Supply Chain
DELIVER. 2003. *How to Cut 100 Steps from Your Contraceptive Supply Chain*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Technical Report of the January 2006 ARV Quantification Review and HIV Test Kits Quantification
Addo, Nii A., S. Boateng, P. Ocran, J. Azeez, V. Bekoe, N. Frempong, E. Bruce, P. Dowling, P. Edah, and E. Takang. 2006. *Technical Report of the January 2006 ARV Quantification Review and HIV Test Kits Quantification*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Guatemala

Diagnóstico de la Disponibilidad Asegurada de Insumos Anticonceptivos en Guatemala: Fortalezas y Retos de los Servicios de Planificación Familiar en Guatemala
Abramson, Wendy, Anabella Sánchez, y Nadia Olson. 2006. *Diagnóstico de la Disponibilidad Asegurada de Insumos Anticonceptivos en Guatemala: Fortalezas y Retos de los Servicios de Planificación Familiar en Guatemala*. Guatemala: DELIVER, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

Guatemala: Decentralization and Integration in the Health Logistics System (also in Spanish)
Bossert, Thomas, Diana Bowser, Johnnie Amenyah, and Becky Copeland. 2003. *Guatemala: Decentralization and Integration in the Health Logistics System*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Políticas, Prácticas, y Opciones para la Adquisición de Insumos Anticonceptivos: Guatemala
Sánchez, Anabella, Verónica Siman Betancourt, Nora Quesada, Wendy Abramson, Nadia Olson, Jay Gribble, David Sarley y Carlos Lamadrid. 2006. *Políticas, Prácticas, y Opciones para la Adquisición de Insumos Anticonceptivos: Guatemala.* Arlington, Va.: DELIVER y Washington, DC: USAID | Iniciativa de Políticas en Salud, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

State of the Practice Brief: Guatemala: Ensuring a Voice and a Choice for Women
DELIVER. 2006. *State of the Practice Brief: Guatemala: Ensuring a Voice and a Choice for Women.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Honduras

Contraceptive Security in Honduras: Assessing Strengths and Weaknesses (also in Spanish)
Quesada, Nora, Patricia Mostajo, Cynthia Salamanca, Cindi Cisek, Leslie Patykewich, and Ali Karim. 2004. *Honduras: Contraceptive Security Assessment, April 26–May 7, 2004.* Arlington, Va.: John Snow, Inc./DELIVER, and Washington, DC: Futures Group/POLICY II, for the U.S. Agency for International Development.

Estrategia Metodológica de los Servicios de Planificación Familiar (Methodological Strategy for Family Planning Services)
Ministry of Health (MOH), Honduras. 2006. *Estrategia Metodológica de los Servicios de Planificación Familiar (Methodological Strategy for Family Planning Services)*. Tegucigalpa, Honduras: MOH.

Estrategia Nacional para la Disponibilidad Asegurada de Insumos Anticonceptivos (National Contraceptive Security Strategy)
Ministry of Health (MOH), Honduras. 2005. *Estrategia Nacional para la Disponibilidad Asegurada de Insumos Anticonceptivos (National Contraceptive Security Strategy)*. Tegucigalpa, Honduras: MOH.

Evaluación Cuantitativa de Indicadores Logísticos Honduras, 2006
Chimnani, Jaya, Kim Peacock, José Ochoa, Jane Feinberg, and Sandra Sánchez. 2006. *Evaluación Cuantitativa de Indicadores Logísticos Honduras, 2006*. Honduras: DELIVER, for the U.S. Agency for International Development.

Honduras: Final Country Report
DELIVER. 2007. *Honduras: Final Country Report*. Arlington, Va.: DELIVER, for the United States Agency for International Development.

Políticas, Prácticas y Opciones para la Adquisición de Insumos Anticonceptivos: Honduras
Gribble, Jay, Nora Quesada, Varuni Dayaratna, Wendy Abramson, David Sarley, Carlos Lamadrid, Nadia Olson, y Verónica Siman Betancourt. 2006. *Políticas, Prácticas y Opciones para la Adquisición de Insumos Anticonceptivos: Honduras.* Arlington, Va.: DELIVER, y Washington, DC: USAID | Iniciativa de Políticas en Salud, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

State of the Practice Brief: Honduras: Moving Contraceptive Security Forward with Political Commitment and Financial Capital
DELIVER. 2006. *State of the Practice Brief: Honduras: Moving Contraceptive Security Forward with Political Commitment and Financial Capital.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

India

A Brochure on the Logistics Resource Center at IIM
Lama, Shyam. 2004. *A Brochure on the Logistics Resource Center at IIM*. Uttar Pradesh, India: Indian Institute of Management, Lucknow.

Field monitoring checklist
Ministry of Health and Family Welfare, Lucknow. 2003. *Field monitoring checklist.* Uttar Pradesh, India: Government of Uttar Pradesh.

India: Final Country Report
DELIVER. 2007. *India: Final Country Report*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Logistics Strategic Plan, 2005-07
Ministry of Health and Family Welfare, Lucknow. 2003. *Logistics Strategic Plan, 2005-07*. Uttar Pradesh, India: Government of Uttar Pradesh.

Procurement Policy and Procedure Manual
Ministry of Health and Family Welfare, Lucknow. 2003. *Procurement Policy and Procedure Manual.* Uttar Pradesh, India: Government of Uttar Pradesh.

Trainers Manual
Ministry of Health and Family Welfare, Lucknow. 2003. *Trainers Manual.* Uttar Pradesh, India: Government of Uttar Pradesh.

Jordan

On Track: Jordan Takes Control of Its Logistics System: Update
John Snow, Inc./DELIVER. 2003. *On Track: Jordan Takes Control of Its Logistics System: Update.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Kenya

Condoms for HIV/AIDS Prevention Logistics System Assessment Report
Ronnow, Erika, and Youssouf Ouedraogo. 2005. *Condoms for HIV/AIDS Prevention Logistics System Assessment Report*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Focus on Results: Kenya
DELIVER. 2007. *Focus on Results: Kenya.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Improving Health Logistic systems in Eastern South Region of Kenya Ministry of Health 2005–2006
Bahati, Augustine. 2006. *Improving Health Logistic Systems in Eastern South Region of Kenya Ministry of Health: Grouped Systems Roll out Report 2005–2006*. Nairobi, Kenya: DELIVER, for the U.S. Agency for International Development.

Integrated Logistics System Procedures Manual
John Snow, Inc./DELIVER. 2005. *Integrated Logistics System Procedures Manual*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Kenya: Assessment of the Health Commodity Supply Chains and the Role of KEMSA
Aronovich, Dana, and Steve Kinzett. 2001. *Kenya: Assessment of the Health Commodity Supply Chains and the Role of KEMSA*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Kenya: Final Country Report
DELIVER. 2007. *Kenya: Final Country Report*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Kenya: HIV Test Kits Logistics System Procedures Manual
John Snow, Inc./DELIVER. 2005. *Kenya: HIV Test Kits Logistics System Procedures Manual*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Kenya Laboratory Supplies—Logistics System Assessment Report
Ronnow, Erika, and Youssouf Ouedraogo. 2005. *Kenya Laboratory Supplies—Logistics System Assessment Report*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Kenya: Stock Status and Logistics System Assessment Report 2006
Bunde, Elizabeth, Erika Ronnow, and Gerald Kimondo. 2006. *Kenya: Stock Status and Logistics System Assessment Report 2006*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Kenya Tuberculosis Supplies—Logistics System Assessment Report
Ronnow, Erika, and Youssouf Ouedraogo. 2005. *Kenya Tuberculosis Supplies—Logistics System Assessment Report*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Logistics Management Information System (LMIS) Data Management Procedures
Ministry of Health (MOH), Kenya. 2005. *Logistics Management Information System (LMIS) Data Management Procedures*. Nairobi, Kenya: MOH.

Logistics Management of Laboratory Supplies Standard Operating Procedures Manual
DELIVER. 2006. *Logistics Management of Laboratory Supplies Standard Operating Procedures Manual*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Logistics Management of Laboratory Supplies Trainers Manual
DELIVER. 2006. *Logistics Management of Laboratory Supplies Trainers Manual*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

On Track: In Kenya, Logistics Project Helps to Extend the Coverage of STI Drugs: Update
John Snow, Inc./DELIVER. 2003. *On Track: In Kenya, Logistics Project Helps to Extend the Coverage of STI Drugs: Update.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Latin America and the Caribbean

Decentralizing and Integrating Contraceptive Logistics Systems in Latin America and the Caribbean: Considerations for Informed Decision Making throughout the Health Reform Process (also in Spanish)
Sánchez, Anabella, Wendy Abramson, Nadia Olson, and Nora Quesada. 2006. *Decentralizing and Integrating Contraceptive Logistics Systems in Latin America and the Caribbean: Considerations for Informed Decision Making throughout the Health Reform Process*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Decentralizing and Integrating Contraceptive Logistics Systems in Latin America and the Caribbean, With Lessons Learned from Asia and Africa
Beith, Alix, Nora Quesada, Wendy Abramson, Anabella Sánchez, and Nadia Olson. 2006. *Decentralizing and Integrating Contraceptive Logistics Systems in Latin America and the Caribbean, with Lessons Learned from Asia and Africa.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Descentralización e integración de los sistemas logísticos de anticonceptivos en Latinoamérica y el Caribe: consideraciones para la toma de decisiones informadas a través del proceso de reforma de la salud
Sánchez, Anabella, Wendy Abramson, Nadia Olson, and Nora Quesada. 2006. *Descentralización e integración de los sistemas logísticos de anticonceptivos en Latinoamérica y el Caribe: consideraciones para la toma de decisiones informadas a través del proceso de reforma de la salud.* Arlington, Va.: DELIVER, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

Opciones para la Adquisición de Anticonceptivos: Lecciones Aprendidas en Latinoamérica y el Caribe
Sarley, David, Varuni Dayaratna, Wendy Abramson, Jay Gribble, Nora Quesada, Nadia Olson, y Verónica Siman Betancourt. 2006. *Opciones para la Adquisición de Anticonceptivos: Lecciones Aprendidas en Latinoamérica y el Caribe.* Arlington, Va.: DELIVER, y Washington, DC: USAID | Iniciativa de Políticas en Salud, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

Options for Contraceptive Procurement: Lessons Learned from Latin America and the Caribbean (also in Spanish)
Sarley, David, Varuni Dayaratna, Wendy Abramson, Jay Gribble, Nora Quesada, Nadia Olson, and Verónica Siman Betancourt. 2006. *Options for Contraceptive Procurement: Lessons Learned from Latin America and the Caribbean.* Arlington, Va.: DELIVER, and Washington, DC: USAID | Health Policy Initiative, for the U.S. Agency for International Development.

Regional Contraceptive Security Report: Latin America and the Caribbean
Reproductive Health Commodity Security Strategy for the West Africa Subregion (also in Spanish)
DELIVER. 2006. *Reproductive Health Commodity Security Strategy for the West Africa Subregion.* Arlington, Va.: DELIVER, for the United States Agency for International Development.

Malawi

Focus on Results: Malawi

DELIVER. 2007. *Focus on Results: Malawi.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Malawi: Final Country Report

DELIVER. 2007. *Malawi: Final Country Report*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Malawi: Health Commodities Logistics Management System Procedures Manual

DELIVER. 2003. *Malawi: Health Commodities Logistics Management System Procedures Manual*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Malawi: Health Commodities Logistics Management System Standard Operating Procedures

DELIVER. 2006. *Malawi: Health Commodities Logistics Management System Standard Operating Procedures.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Malawi Logistics System Assessment and Stock Status Report: Comparison of 2004 and 2006 Assessment Results

Chimnani, Jaya, Veronica Chirwa, and Erika Ronnow. 2006. *Malawi Logistics System Assessment and Stock Status Report: Comparison of 2004 and 2006 Assessment Results*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Malawi Supply Chain Manager Annex: Malawi Health Commodities Logistics Management System Standard Operating Procedures Manual

Zingeni, Jon. 2006. *Malawi Supply Chain Manager Annex: Malawi Health Commodities Logistics Management System Standard Operating Procedures Manual*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Mali

Focus on Results: Mali

DELIVER. 2007. *Focus on Results: Mali.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Mali: Contraceptive Market Segmentation and Pricing Analysis

Dowling, Paul, and David Sarley. 2004. *Mali: Contraceptive Market Segmentation and Pricing Analysis*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Mali: Evaluation des Indicateurs et du Système de Gestion Logistique des Contraceptifs et des Médicaments de Traitements des IST du Mali

Ouedraogo, Youssouf, Briton Bieze, Ibnou Diallo, and Dana Aronovich. 2006. *Mali: Evaluation des Indicateurs et du Système de Gestion Logistique des Contraceptifs et des Médicaments de Traitements des IST du Mali*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Mali: Evaluation of the Logistics Management System for Contraceptives and Drugs to Treat Sexually Transmitted Diseases: Executive Summary

Ouedraogo, Youssouf, Briton Bieze, Ibnou Diallo, and Dana Aronovich. 2006. *Mali: Evaluation of the Logistics Management System for Contraceptives and Drugs to Treat Sexually Transmitted Diseases: Executive Summary*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Mali: Final Country Report
DELIVER. 2007. *Mali: Final Country Report*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Mozambique

Condom Quality Testing Results, Mozambique, July 2006
Noguera, Marilyn. 2006. *Condom Quality Testing Results, Mozambique, July 2006.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.
Mozambique: Final Country Report
DELIVER. 2007. *Mozambique: Final Country Report***.** Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Requirements Analysis and Cost Estimation for the Construction of a Warehouse in Nacala, Mozambique for the Ministry of Health
Ayob, Mahomed, Tim O´Hearn, and Jim Eberle. 2006. *Requirements Analysis and Cost Estimation for the Construction of a Warehouse in Nacala, Mozambique for the Ministry of Health*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Nepal

Nepal: Contraceptive Security: Issues, Findings, and Recommendations
Rao, Raja, and Tanvi Pandit. 2004. *Nepal: Contraceptive Security: Issues, Findings, and Recommendations*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Nepal: Final Country Report
DELIVER. 2007. *Nepal: Final Country Report***.** Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Nepal: Reproductive Health Commodity Pricing Survey: Understanding Equity, Access and Affordability of Essential Reproductive Health Commodities
Rao, Raja, and Dhruba Thapa. 2006. *Nepal: Reproductive Health Commodity Pricing Survey: Understanding Equity, Access and Affordability of Essential Reproductive Health Commodities*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Nepal: Support for HIV/AIDS Commodity Security
Allain, Linda, Ruslan Malyuta, and Eric Takang. 2006. *Nepal: Support for HIV/AIDS Commodity Security*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

On Track: How Do You Build a Storage Facility?
John Snow, Inc./DELIVER. 2003. *On Track: How Do You Build a Storage Facility?* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

On Track: Nepal Braves Integration, and Comes Out Ahead: Update
John Snow, Inc./DELIVER. 2003. *On Track: Nepal Braves Integration, and Comes Out Ahead: Update*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Nicaragua

Contraceptive Security in Nicaragua: Assessing Strengths and Weaknesses (also in Spanish)
Taylor, Patricia A., Carolina Arauz, Gracia Subiria, Cindi Cisek, José Antonio Medrano, Diony Fuentes, David Sarley, Leslie Patykewich, and Ali Karim. 2004. *Contraceptive Security in Nicaragua: Assessing Strengths and Weaknesses.* Arlington, Va.: John Snow, Inc./DELIVER, and Washington, DC: Futures Group Inc./POLICY II, for the U.S. Agency for International Development.

Evaluacion Sobre el Impacto de la Capacitacion y Diagnostico del Systema Logistico
Basurto, Carmen, and Bernardo Uribe. 2001. *Evaluacion Sobre el Impacto de la Capacitacion y Diagnostico del Systema Logistico*. Nicaragua: John Snow, Inc./DELIVER and the Ministry of Health.

Evaluaciones anuales de indicadores logísticos MINSA 2004
Beteta, Wilber, Carolina Arauz, and Carmen Basurto. 2004. *Evaluaciones anuales de indicadores logísticos MINSA 2004*. Nicaragua: John Snow, Inc./DELIVER and the Ministry of Health.

Nicaragua: Análisis de Segmentación del Mercado
Abramson, Wendy, Sharon Soper, Leslie Patykewich, Ali Karim, and David Sarley. 2005. *Nicaragua: Análisis de Segmentación del Mercado*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Nicaragua: Final Country Report: Executive Summary
DELIVER. 2007. *Nicaragua: Final Country Report: Executive Summary***.** Arlington, Va.: DELIVER, for the U.S. Agency for International Development

Nicaragua: Informe Final del País
DELIVER. 2007. *Nicaragua: Informe Final del País*. Arlington, Va.: DELIVER, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

On Track: Sustaining Family Planning Successes in Nicaragua
John Snow, Inc./DELIVER. 2005. *On Track: Nepal Braves Integration, and Comes Out Ahead: Update*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Políticas, Prácticas, y Opciones para la Adquisición de Insumos Anticonceptivos: Nicaragua
Agudelo, Juan, Cristian Morales, Nora Quesada, David Sarley, Wendy Abramson, Jay Gribble, Carlos Lamadrid, Nadia Olson, Varuni Dayaratna, and Verónica Siman Betancourt. 2006. *Contraceptive Procurement Policies, Practices, and Options: Nicaragua.* Arlington, Va.: DELIVER y Washington, DC: USAID | Iniciativa de Políticas en Salud, para la Agencia de los Estados Unidos para el Desarrollo Internacional

State of the Practice Brief: Nicaragua: Increasing Families' Access to Improved and Expanded Family Planning Services through Political Commitment
DELIVER. 2006. *State of the Practice Brief: Nicaragua: Increasing Families' Access to Improved and Expanded Family Planning Services through Political Commitment.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Nigeria

A Baseline Assessment of the Contraceptive Logistics System in Nigeria
Teclemariam, Lea, Tim Williams, and Rebecca Copeland. 2002. *A Baseline Assessment of the Contraceptive Logistics System in Nigeria.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Focus on Results: Nigeria
DELIVER. 2007. *Focus on Results: Nigeria.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Nigeria: Assessment of the Transportation System and Distribution Costs for Family Planning Commodities
O'Hearn, Tim, and Mike Healy. 2003. *Nigeria: Assessment of the Transportation System and Distribution Costs for Family Planning Commodities*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Nigeria: Final Country Report
DELIVER. 2007. *Nigeria: Final Country Report.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Nigeria: Midterm Evaluation of the Contraceptive Logistics System
Bieze, Briton, Lea Teclemariam, and Timothy O'Hearn. 2005. *Nigeria: Midterm Evaluation of the Contraceptive Logistics System*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Nigeria: Rapid Assessment of HIV/AIDS Care in the Public and Private Sectors
Durgavich, John, Tim O'Hearn, Lea Teclemariam, David Galaty, Gilbert Kombe, Ali Onoja, Godwin Asuquo, and Cesar Nuñez. 2004. *Nigeria: Rapid Assessment of HIV/AIDS Care in the Public and Private Sectors*. Arlington, Va.: John Snow, Inc./DELIVER, The Partners for Health ReformPlus Project, and POLICY Project.

On Track: Assessments Lay the Groundwork for Improved Logistics Systems in Nigeria
John Snow, Inc./DELIVER. 2003. *On Track: Assessments Lay the Groundwork for Improved Logistics Systems in Nigeria.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Paraguay

Contraceptive Security in Paraguay: Assessing Strengths and Weaknesses (also in Spanish)
Quesada, Nora, Cynthia Salamanca, Juan Agudelo, Patricia Mostajo, Varuni Dayaratna, Leslie Patykewich, and Ali Karim. 2004. *Contraceptive Security in Paraguay: Assessing Strengths and Weaknesses.* Arlington, Va.: John Snow, Inc./DELIVER, and Washington, DC: Futures Group/POLICY II, for the U.S. Agency for International Development

Evaluación Cuantitativa de Indicadores Logísticos
Uribe, Bernardo, Carolina Vera, Juan Agudelo, Sandra Sanchez, Ministry of Health, and Carmen Basurto. 2006. E*valuación Cuantitativa de Indicadores Logísticos* (Quantitative Assessment of Logistic Indicators). Asunción, Paraguay: DELIVER, for the U.S. Agency for International Development.

Paraguay: Final Country Report: Executive Summary
DELIVER. 2007. *Paraguay: Final Country Report: Executive Summary.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Paraguay: Informe Final del País
DELIVER. 2007. *Paraguay: Informe Final del País*. Arlington, Va.: DELIVER, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

Políticas, Prácticas, y Opciones para la Adquisición de Insumos Anticonceptivos: Paraguay
Quesada, Nora, Varuni Dayaratna, Wendy Abramson, Jay Gribble, Verónica Siman Betancourt, David Sarley, Carlos Lamadrid, Nadia Olson, y Juan Agudelo. 2006. *Políticas, Prácticas, y Opciones para la Adquisición de Insumos Anticonceptivos: Paraguay.* Arlington, Va.: DELIVER y Washington, DC: USAID | Health Policy Initiative, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

State of the Practice Brief: Paraguay: Guaranteeing Widespread Access to a Broad Choice of Contraceptives
DELIVER. 2006. *State of the Practice Brief: Paraguay: Guaranteeing Widespread Access to a Broad Choice of Contraceptives.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Peru

Contraceptive Security in Peru: Assessing Strengths and Weaknesses (also in Spanish)
Taylor, Patricia A., Gracia Subiria, Cindi Cisek, Carmen Basurto Corvera, and Patricia Mostajo. 2004. *Contraceptive Security in Peru: Assessing Strengths and Weaknesses.* Arlington, Va.: John Snow, Inc./DELIVER, and Washington, DC: Futures Group/POLICY II, for the U.S. Agency for International Development.

Políticas, Prácticas, y Opciones para la Adquisición de Insumos Anticonceptivos: Perú.
Dayaratna, Varuni, Nora Quesada, Jay Gribble, Wendy Abramson, David Sarley, Carlos Lamadrid, Nadia Olson, y Verónica Siman Betancourt. 2006. *Políticas, Prácticas, y Opciones para la Adquisición de Insumos Anticonceptivos:Perú.* Arlington, Va.: DELIVER y Washington, DC: USAID | Iniciativa de Políticas en Salud, para la Agencia de los Estados Unidos para el Desarrollo Internacional.

State of the Practice Brief: Peru: Meeting the Contraceptive Needs of Families through Strong Central-Level Capacity and Active Public Participation
DELIVER. 2006. *State of the Practice Brief: Peru: Meeting the Contraceptive Needs of Families through Strong Central-Level Capacity and Active Public Participation.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Philippines

Philippines: Final Country Report
DELIVER. 2007. *Philippines: Final Country Report.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Romania

Romania: Scaling Up Integrated Family Planning Services: A Case Study
Gasco, Merce, Christopher Wright, Magdalena Pătruleasa, and Diane Hedgecock. 2006. *Romania: Scaling Up Integrated Family Planning Services: A Case Study*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Russia

Russia: Integrating Family Planning into the Health System
Cappa, Laurie, Natalia Vartapetova, Tatyana Makarova, and Polina Flahive. 2007. *Russia: Integrating Family Planning into the Health System. A Case Study of the Maternal and Child Health Initiative.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Rwanda

Evaluation du Système de Gestion Logistique des Contraceptifs du Rwanda
Ouédraogo, Youssouf, Armand Utshudi, Norbert-Aimé Péhé, Jovith Ndahinyuka, Gregory Roche. 2006. *Evaluation du Système de Gestion Logistique des Contraceptifs du Rwanda.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Focus on Results: Rwanda
DELIVER. 2007. *Focus on Results: Rwanda.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

On Track: Assessing a New Logistics System: Lessons from Rwanda
John Snow, Inc./DELIVER. 2004. *On Track: Assessing a New Logistics System: Lessons from Rwanda.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Rwanda: Assessing the Logistics Management System for Contraceptives: Executive Summary
Ouedraogo, Youssouf, Armand Utshudi, Norbert Pehe, Jovith Ndahinyuka, and Gregory Roche. 2006. *Rwanda: Assessing the Logistics Management System for Contraceptives: Executive Summary*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Rwanda Contraceptive Logistics System Assessment
John Snow, Inc./DELIVER. 2002. *Rwanda Contraceptive Logistics System Assessment*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Rwanda: Final Country Report
DELIVER. 2007. *Rwanda: Final Country Report.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Senegal

On Track: Innovative Training Materials Help Senegal's Family Planning Efforts
John Snow, Inc./DELIVER. 2004. *On Track: Innovative Training Materials Help Senegal's Family Planning Efforts.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

South Africa
South Africa: Final Country Report
DELIVER. 2007. *South Africa: Final Country Report.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Tanzania

The Integrated Logistics System (ILS) Launch Workshop Participant Workbook
Ministry of Health (MOH), Tanzania. 2004. *The Integrated Logistics System (ILS) Launch Workshop Participant Workbook*. Tanzania: MOH.

Tanzania: Final Country Report
DELIVER. 2007. *Tanzania: Final Country Report.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Tanzania: Integrated Logistics System Pilot-Test Evaluation: Using the Logistics Indicator Assessment Tool
Amenyah, Johnnie, Barry Chovitz, Erin Hasselberg, Ali Karim, Daniel Mmari, Ssanyu Nyinondi, and Timothy Rosche. 2005. *Tanzania: Integrated Logistics System Pilot-Test Evaluation: Using the Logistics Indicator Assessment Tool*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Tanzania: Integrated Logistics System Procedures Manual Roll-Out Version
Chovitz, Barry, Johnnie Amenyah, Barbara Felling, Gregory Roche, and Tim Rosche. 2006. *Tanzania: Integrated Logistics System Procedures Manual Roll-Out Version*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Tanzania: Integration of Contraceptive Products into the Medical Stores Department's Distribution System, June 1997–July 2000
Mmari, Daniel, Ben Mkasa, Kim Peacock, Dr. Catherine Sanga, and Steve Wilbur. 2001. *Tanzania: Integration of Contraceptive Products into the Medical Stores Department's Distribution System, June 1997–July 2000*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Tanzania: Logistics System Capacity and Site Readiness to Expand PMTCT and Initiate ART—Findings and Recommendations of the PMTCT and ART Assessment Team
Allers, Claudia, Marilyn Noguera, Barry Chovitz, Abdourahamane Diallo, Christopher Shaw, Tanvi Pandit, Sultan Mlandula, Gerald Massuki, Paul Senge, and Michael Burke. 2003. *Tanzania: Logistics System Capacity and Site Readiness to Expand PMTCT and Initiate ART—Findings and Recommendations of the PMTCT and ART Assessment Team*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Tanzania: Quantification of Drugs for STI Program and HIV Test Kit Requirements 2004–2005
Chovitz, Barry, and Johnnie Amenyah. 2004. *Tanzania: Quantification of Drugs for STI Program and HIV Test Kit Requirements 2004–2005*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Tanzania: Quantification of Drugs for STI Program and HIV Test Kit Requirements 2005–2006
Chovitz, Barry, Peter Mellon, and Tim Rosche. 2005. *Tanzania: Quantification of Drugs for STI Program and HIV Test Kit Requirements 2005–2006*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Tanzania: Quantification of Drugs for STI Program and HIV Test Kit Requirements 2006–2008
Amenyah, J., S. Nyinondi, and E. Hasselberg. 2006. *Tanzania: Quantification of Drugs for STI Program and HIV Test Kit Requirements 2006–2008*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Tanzania Situational Assessment of Logistics Systems for Public Health Commodities at Selected Districts and SDPs
Ministry of Health (MOH), Tanzania, Reproductive and Child Health Section. 2000. *Tanzania Situational Assessment of Logistics Systems for Public Health Commodities at Selected Districts and SDPs*. Tanzania: MOH.

Tanzania Stock Status Survey: Commodity Availability for Selected Health Products: Baseline Survey for Integrated Logistics System
The United Republic of Tanzania, Ministry of Health and Social Welfare. 2003. *Tanzania Stock Status Survey: Commodity Availability for Selected Health Products: Baseline Survey for Integrated Logistics System, 2003*. Dar es Salaam, Tanzania: Ministry of Health.

Uganda

Condom Distribution Guidelines
Ministry of Health (MOH), Uganda, STD/AIDS Control Program. 2006. *Condom Distribution Guidelines*. Uganda: MOH.

Focus on Results: Uganda
DELIVER. 2007. *Focus on Results: Uganda.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

National Laboratory Assessment Survey 2004
Ministry of Health, Uganda, Centers for Disease Control and Prevention (CDC), John Snow, Inc/DELIVER. 2004. *National Laboratory Assessment Survey 2004.* Atlanta, Ga.: CDC, and Arlington, Va.: John Snow, Inc./DELIVER, and Uganda: MOH.

On Track: Analyzing Transportation Costs
John Snow, Inc./DELIVER. 2003. *Uganda: Analyzing Transportation Costs*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

On Track: Evaluating Products and Services at the Same Time
John Snow, Inc./DELIVER. 2004. *On Track: Evaluating Products and Services at the Same Time*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Standard Operating Procedures for Laboratory Reagent Preparation
Ministry of Health (MOH), Uganda. 2005. *Standard Operating Procedures for Laboratory Reagent Preparation*. Uganda: MOH.

Uganda: Assessing the Costs of Distribution to Health Sub-Districts, A Case Study in Financial Analysis
Vian, Taryn. 2003. *Uganda: Assessing the Costs of Distribution to Health Sub-Districts, A Case Study in Financial Analysis*. Arlington, Va.: John Snow, Inc./DELIVER and Boston, Mass.: Boston University.

Uganda: Estimation of Commodity Requirements for 2002–2003, Drugs to Treat Malaria
Eberle, Jim,and Yasmin Chandani. 2002. *Uganda: Estimation of Commodity Requirements for 2002–2003, Drugs to Treat Malaria*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Uganda: Estimation of Commodity Requirements Needs for 2002–2003, Drugs to Treat Tuberculosis
Eberle, Jim, and Yasmin Chandani. 2002. *Uganda: Estimation of Commodity Requirements Needs for 2002–2003, Drugs to Treat Tuberculosis*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Uganda: Estimation of Commodity Requirements for 2002–2004, Drugs to Treat Sexually Transmitted Infection
Chandani, Yasmin. 2002. *Uganda: Estimation of Commodity Requirements for 2002–2004, Drugs to Treat Sexually Transmitted Infection*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Uganda: Estimation of Commodity Requirements for 2003, Drugs to Treat Opportunistic Infections
Chandani, Yasmin, Moses Muwonge, and Fred Sebisubi. 2003. *Uganda: Estimation of Commodity Requirements for 2003, Drugs to Treat Opportunistic Infections*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Uganda: Final Country Report
DELIVER. 2007. *Uganda: Final Country Report.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Uganda Health Facilities Survey 2002
Ministry of Health (Uganda), ORC Macro, and John Snow, Inc./DELIVER. 2002. *Uganda Health Facilities Survey 2002*. Arlington, Va.: John Snow, Inc./DELIVER, and Calverton, Md.: ORC Macro.

Uganda Health Facilities Survey 2006: Performance of HIV/AIDS and Family Planning Commodity Logistics Systems, Comparison of 2002 and 2006 National Survey Results
Copeland, Rebecca, Cecilia Sewagudde, and Briton Bieze. 2006. *Uganda Health Facilities Survey 2006: Performance of HIV/AIDS and Family Planning Commodity Logistics Systems, Comparison of 2002 and 2006 National Survey Results*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Uganda: Highlights from a Pilot Assessment of the Introduction of Auto-Disable Syringes for Use with Depo-Provera
Williams, Tim. 2001. *Uganda: Highlights from a Pilot Assessment of the Introduction of Auto-Disable Syringes for Use with Depo-Provera*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Uganda: Logistics and Procurement Decisions and Issues for Consideration for Initiating and Expanding Access to ARV Drugs
Ministry of Health (MOH), Uganda and Logistics Subcommittee of the ARV Task Force. 2003. *Uganda: Logistics and Procurement Decisions and Issues for Consideration for Initiating and Expanding Access to ARV Drugs*. Uganda: MOH.

Uganda: Procurement Case Studies Report
John Snow, Inc./DELIVER. 2003. *Uganda: Procurement Case Studies Report*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Uganda: Summary of Findings of the Uganda Health Facilities Survey 2002
Ministry of Health (Uganda), ORC Macro, and John Snow, Inc./DELIVER. 2003. *Uganda: Summary of Findings of the Uganda Health Facilities Survey 2002*. Arlington, Va.: John Snow, Inc./DELIVER, and Calverton, Md.: ORC Macro.

Ukraine

Ukraine: Contraceptive Availability Assessment

Hudgins, Tony, and Chris Wright. 2004. *Ukraine Contraceptive Availability Assessment.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

West Africa

On Track: Improving Contraceptive Security in West Africa

John Snow, Inc./DELIVER. 2004. *Improving Contraceptive Security in West Africa*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

West Africa: Final Regional Report

DELIVER. 2007. *West Africa: Final Regional Report.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

West Africa Reproductive Health Commodity Security Sub-Regional Strategy: A Concept Paper
(also in French)

John Snow, Inc./DELIVER. 2005. *West Africa Reproductive Health Commodity Security Sub-Regional Strategy: A Concept Paper*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

West Africa Reproductive Health Commodity Security: Country Assessment Report: Burkina Faso

Kagone, Meba, Eric Takang, Antoine Ndiaye, Olga Sankara, and Ernest Ouedraogo. 2005. *West Africa Reproductive Health Commodity Security: Country Assessment Report: Burkina Faso*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

West Africa Reproductive Health Commodity Security: Economic Community of West African States Trade and Economic Integration

Sarley, David. 2002. *West Africa Reproductive Health Commodity Security: Economic Community of West African States Trade and Economic Integration*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

West Africa Reproductive Health Commodity Security: Encouraging Greater Private Sector Participation

Dowling, Paul. 2006. *West Africa Reproductive Health Commodity Security: Encouraging Greater Private Sector Participation*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

West Africa Reproductive Health Commodity Security: Ghana RHCS Country Assessment

Amenyah, Johnnie, Raja Rao, Erin Shea, Mohammed Oubnichou, Alex Nazzar, and Gifty Addico. 2005. *West Africa Reproductive Health Commodity Security: Ghana RHCS Country Assessment*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

West Africa Reproductive Health Commodity Security: Local Manufacturing

Dowling, Paul. 2005. *West Africa Reproductive Health Commodity Security: Local Manufacturing*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

West Africa Reproductive Health Commodity Security: Logistics System Capacity in West Africa
Diarra, Aoua. 2005. *West Africa Reproductive Health Commodity Security: Logistics System Capacity in West Africa*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

West Africa Reproductive Health Commodity Security: Regional Financing Gap
John Snow, Inc./DELIVER. 2005. *West Africa Reproductive Health Commodity Security: Regional Financing Gap*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

West Africa Reproductive Health Commodity Security: Regional Reproductive Health Policy
Kagone, Meba. 2005. *West Africa Reproductive Health Commodity Security: Regional Reproductive Health Policy*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

West Africa Reproductive Health Commodity Security: Review of Pooled Procurement
Abdallah, Hany. 2005. *West Africa Reproductive Health Commodity Security: Review of Pooled Procurement*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

West Africa Reproductive Health Commodity Security: RH Commodity Pricing: Potential Benefits
Rao, Raja. 2005. *West Africa Reproductive Health Commodity Security: RH Commodity Pricing: Potential Benefits*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Yemen

Yemen: Goals of Deliver Assistance
DELIVER. 2006. *Yemen: Goals of Deliver Assistance*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Yemen Situation Analysis: Assessment of the Contraceptive Logistics System in 5 Governorates
DELIVER. 2006. *Yemen Situation Analysis: Assessment of the Contraceptive Logistics System in 5 Governorates*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Zambia

Zambia: DELIVER Brochure
DELIVER. 2006. *Zambia: DELIVER Brochure*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Zambia: Final Country Report
DELIVER. 2007. *Zambia: Final Country Report.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Zimbabwe

The HIV Care and Treatment Program in Zimbabwe: Current State and Recommendations for USAID Support
Field-Nguer, Mary Lyn, Mukashilima Chikuba, David Alt, and Tendesayi Kufa. 2005. *The HIV Care and Treatment Program in Zimbabwe: Current State and Recommendations for USAID Support*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Management of HIV & AIDS Commodities in Zimbabwe: A Capacity Assessment of NatPharm and Ministry of Health and Child Welfare
Takang, Eric, DraganaVeskov, Celestine Kumire, and Jabulani Nyenwa. 2006. *Management of HIV & AIDS Commodities in Zimbabwe: A Capacity Assessment of NatPharm and Ministry of Health and Child Welfare*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Zimbabwe Antiretroviral Therapy Program: Issues and Opportunities for Initiation and Expansion
Alt, David, Marilyn Noguera, Lisa Hirschorn, Chiedza Maponga, Patrick Osewe, and Amos Sam-Abbenyi. 2003. *Zimbabwe Antiretroviral Therapy Program: Issues and Opportunities for Initiation and Expansion*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Zimbabwe: Assessing the Cost of Transporting HIV/AIDS Commodities, a Case Study in Financial Analysis 2003
Vian, Taryn. 2003. *Zimbabwe: Assessing the Cost of Transporting HIV/AIDS Commodities, a Case Study in Financial Analysis* 2003. Arlington, Va.: John Snow, Inc./DELIVER and Boston, Ma.: Boston University.

Zimbabwe: Final Country Report
DELIVER. 2007. *Zimbabwe: Final Country Report.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Zimbabwe: HIV/AIDS Commodities Transport Assessment
Alt, David, and Marilyn Noguera. 2002. *Zimbabwe: HIV/AIDS Commodities Transport Assessment*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Zimbabwe HIV & AIDS Logistics System Assessment
Nyenwa, Jabulani, David Alt, Ali Karim, Tendesayi Kufa, Jennifer Mboyane, Youssouf Ouedraogo, and Tendai Simoyi. 2006. *Zimbabwe HIV & AIDS Logistics System Assessment*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

II. FACT SHEETS

Case for Increasing Availability of HIV/AIDS Products through Improved Supply Chain Management
John Snow, Inc./DELIVER. 2001. *Case for Increasing Availability of HIV/AIDS Products through Improved Supply Chain Management*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Contraceptive Fact Sheets (also in Spanish and French)
DELIVER. 2007. *Contraceptive Fact Sheets*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Contraceptive Security Index 2003: A Tool for Priority Setting and Planning (also in French)
John Snow, Inc./DELIVER and Futures Group/POLICY Project. 2003. *Contraceptive Security Index 2003: A Tool for Priority Setting and Planning*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Contraceptive Security Index 2003: Technical Manual
John Snow, Inc./DELIVER and Futures Group/POLICY Project. 2004. *Contraceptive Security Index 2003: Technical Manual*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Contraceptive Security Index 2006: A Tool for Priority Setting and Planning
DELIVER and Task Order 1 of the USAID | Health Policy Initiative. 2006. *Contraceptive Security Index 2006: A Tool for Priority Setting and Planning*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Contraceptive Security Index User's Guide
DELIVER. 2007. *Contraceptive Security Index User's Guide*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Frequently Asked Questions: Logistics and Supply Chain Management of HIV
John Snow, Inc./DELIVER. 2001. *Frequently Asked Questions: Logistics and Supply Chain Management of HIV*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

HIV Test Kit Selection: Operational Considerations for VCT and PMTCT Services
John Snow, Inc./DELIVER. 2004. *HIV Test Kit Selection: Operational Considerations for VCT and PMTCT Services*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Importance of Logistics in HIV/AIDS Programs: Central Information Systems (also in Spanish)
John Snow, Inc./DELIVER. 2004. *Importance of Logistics in HIV/AIDS Programs: Central Information Systems.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Importance of Logistics in HIV/AIDS Programs: Financing and Procurement (also in Spanish)
John Snow, Inc./DELIVER. 2004. *Importance of Logistics in HIV/AIDS Programs: Financing and Procurement.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Importance of Logistics in HIV/AIDS Programs: Human Capacity for Logistics (also in Spanish)
John Snow, Inc./DELIVER. 2004. *Importance of Logistics in HIV/AIDS Programs: Human Capacity for Logistics.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Importance of Logistics in HIV/AIDS Programs: Logistics Management Information Systems (also in Spanish)
John Snow, Inc./DELIVER. 2004. *Importance of Logistics in HIV/AIDS Programs: Logistics Management Information Systems.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Importance of Logistics in HIV/AIDS Programs: No Product? No Program (Overview) (also in Spanish)
John Snow, Inc./DELIVER. 2004. *Importance of Logistics in HIV/AIDS Programs: No Product? No Program (Overview).* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Importance of Logistics in HIV/AIDS Programs: Warehousing and Consolidated Shipping (also in Spanish)
John Snow, Inc./DELIVER. 2004. *Importance of Logistics in HIV/AIDS Programs: Warehousing and Consolidated Shipping.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Importance of Logistics in HIV/AIDS Programs: Warehousing and Distribution (also in Spanish)
John Snow, Inc./DELIVER. 2004. *Importance of Logistics in HIV/AIDS Programs: Warehousing and Distribution.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Logistics Fact Sheets: ARV Drugs (complete set)
DELIVER. 2006. *Logistics Fact Sheets: ARV Drugs*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Logistics Fact Sheets: GPHF-Minilab® and CD4 Machines (FACSCount™ and Guava Easy CD4™)
DELIVER. 2006. *GPHF-Minilab® and CD4 Machines (FACSCount™ and Guava Easy CD4™).* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Logistics Fact Sheets: HIV Test Kits (complete set)
DELIVER. 2006. *Logistics Fact Sheets: HIV Test Kits*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Photo Glossary: Consumable and Durable Laboratory Supplies
DELIVER. 2006. *Photo Glossary: Consumable and Durable Laboratory Supplies.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

ProQ: Software for Estimating HIV Test Needs for VCT & PMTCT Programs (also in Spanish)
John Snow, Inc./DELIVER. 2003. *ProQ: Software for Estimating HIV Test Needs for VCT & PMTCT Programs.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Protecting Stored Contraceptive Commodities from Pest Damage
John Snow, Inc./DELIVER. 2005. *Protecting Stored Contraceptive Commodities from Pest Damage.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Strategic Decentralization: Centralizing Logistics
John Snow, Inc./DELIVER. 2001. *Strategic Decentralization: Centralizing Logistics***.** Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Strategic Pathway to Reproductive Health Commodity Security Fact Sheet
DELIVER. 2005. *Strategic Pathway to Reproductive Health Commodity Security Fact Sheet.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Technical Terms and Definitions for Laboratory Logistics
DELIVER. 2006. *Technical Terms and Definitions for Laboratory Logistics.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

What Is DELIVER? (also in Spanish and French)
DELIVER. 2007. *What Is DELIVER?* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

III. Guidelines, Handbooks, and Manuals

Assessing Supply Chains for HIV/AIDS Commodities
Aronovich, Dana, Briton Bieze, Barbara Felling, and Yasmin Chandani. 2006. *Assessing Supply Chains for HIV/AIDS Commodities*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Assessment Tool for Laboratory Services (ATLAS) 2006
Diallo, Abdourahmane, Lea Teclemariam, Barbara Felling, Erika Ronnow, Carolyn Hart, Wendy Nicodemus, and Lisa Hare. 2006. *Assessment Tool for Laboratory Services (ATLAS) 2006*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Building Blocks for Inventory Management of HIV Tests and ARV Drugs: Inventory Control Systems, Logistics Management Information Systems, and Storage and Distribution
DELIVER. 2006. *Building Blocks for Inventory Management of HIV Tests and ARV Drugs: Inventory Control Systems, Logistics Management Information Systems, and Storage and Distribution*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Concepts of Logistics System Design
Owens, Richard C., Jr., and Timothy Warner. 2003. *Concepts of Logistics System Design*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Contraceptive Security Index 2003: Technical Manual
John Snow, Inc./DELIVER and Futures Group/POLICY Project. 2004. *Contraceptive Security Index 2003:* Technical Manual. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Description of Indicators
DELIVER. 2002. *Description of Indicators.* Arlington, Va.: DELIVER/John Snow, Inc., for the U.S. Agency for International Development.

Guide for Quantifying ARV Drugs
Allers, Claudia, and Yasmin Chandani. 2006. *Guide for Quantifying ARV Drugs*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Guide for Quanitfying HIV Tests
Chandani, Yasmin, Leah Teclemariam, David Alt, Claudia Allers, and Laurie Lyons. 2006. *Guide for Quanitfying HIV Tests.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Guide for Quantifying Laboratory Supplies
Diallo, Abdourahmane, Claudia Allers, Yasmin Chandani, Wendy Nicodemus, Colleen McLaughlin, Lea Teclemariam, and Ronald Brown. 2006. *Guide for Quantifying Laboratory Supplies.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Guidelines for Assessing Costs in a Logistics System: An Example of Transport Cost Analysis
Abdallah, Hany. 2004. *Guidelines for Assessing Costs in a Logistics System: An Example of Transport Cost Analysis.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Guidelines for Implementing Computerized Logistics Management Information Systems (LMIS)
DELIVER. 2006. *Guidelines for Implementing Computerized Logistics Management Information Systems (LMIS).* Second Edition. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Guidelines for Managing the HIV/AIDS Supply Chain
DELIVER. 2006. *Guidelines for Managing the HIV/AIDS Supply Chain*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Guidelines for Managing the Laboratory Supply Chain
Felling, Barbara, Wendy Nicodemus, Ronald Brown, Abdourahmane Diallo, Meba Kagone, Paula Nersesian, and Lea Teclemariam. 2006. *Guidelines for Managing the Laboratory Supply Chain.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Guidelines for the Proper Storage of Health Commodities (8.5x11 size) & **(wall chart)** (also in Spanish and French)
John Snow, Inc./DELIVER. 2002. *Guidelines for the Proper Storage of Health Commodities.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Guidelines for the Storage of Essential Medicines and Other Health Commodities (also in Arabic, Russian, French, and Chinese)
John Snow, Inc./DELIVER in collaboration with the World Health Organization. *Guidelines for the Storage of Essential Medicines and Other Health Commodities.* 2003. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Guidelines for Warehousing Health Commodities
DELIVER. 2005. *Guidelines for Warehousing Health Commodities*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

HIV/AIDS Commodity Security: A Framework for Strategic Planning
Dowling, Paul, Lisa Hare, Yasmin Chandani, and Alexandra Zuber. 2006. *HIV/AIDS Commodity Security: A Framework for Strategic Planning.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

HIV/AIDS Service Delivery Programs: Overview and Insights for Supply Chain Managers
Field-Nguer, Mary Lyn, Lisa Hirschhorn, Dragana Veskov, Jennifer Mboyane, and Yasmin Chandani. 2006. *HIV/AIDS Service Delivery Programs: Overview and Insights for Supply Chain Managers*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

The Logistics Handbook: A Practical Guide for Supply Chain Managers in Family Planning and Health Programs (also in Spanish)
John Snow Inc./DELIVER, 2004. *The Logistics Handbook: A Practical Guide for Supply Chain Managers in Family Planning and Health Programs.* Arlington, Va.: John Snow Inc./DELIVER, for the U.S. Agency for International Development (USAID).

Logistics Indicators Assessment Tool (LIAT) (also in Spanish and French)
DELIVER. 2005. *Logistics Indicators Assessment Tool (LIAT)*. Arlington, Va.: John Snow Inc./DELIVER, for the U.S. Agency for International Development.

Logistics System Assessment Tool (LSAT) (also in Spanish and French)
John Snow, Inc./DELIVER. 2004. *Logistics System Assessment Tool (LSAT)*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Logistics Workbook: A Companion to the Logistics Handbook
John Snow, Inc./DELIVER. 2000. *Logistics Workbook: A Companion to the Logistics Handbook.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Monitoring and Evaluation Indicators for Assessing Logistics Systems Performance
DELIVER. 2006. *Monitoring and Evaluation Indicators for Assessing Logistics Systems Performance*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Procuring HIV/AIDS Commodities Using U.S. Government Funds: Lessons & Approaches
Hasselberg, Erin, Miguel Jaureguizar, Yasmin Chandani, Carmit Keddem, Carolyn Hairston, and Corynne Harvey. 2006. *Procuring HIV/AIDS Commodities Using U.S. Government Funds: Lessons & Approaches.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Safe Injection and Waste Management: A Reference for Logistics Advisors
Nersesian, Paula V., Vanessa Cesarz, Allison Cochran, Jennifer Mboyane, and Katie Schmidt. 2004 *Safe Injection and Waste Management: A Reference for Logistics Advisors*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Supply Chain Management of Anitretroviral Drugs: Considerations for Initiating and Expanding National Supply Chains
Chandani, Yasmin, Barbara Felling, Claudia Allers, David Alt, Marilyn Noguera, and Alexandra Zuber. 2006. *Supply Chain Management of Anitretroviral Drugs: Considerations for Initiating and Expanding National Supply Chains.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Tool to Assess Site Readiness for Initiating Antiretroviral Therapy (ART), Version 1.2 (also in Spanish)
Hirschhorn, Lisa, Andrew Fullem, Christopher Shaw, Wendy Prosser, and Marilyn Noguera. 2004. *Tool to Assess Site Readiness for Initiating Antiretroviral Therapy (ART), Version 1.2.* Boston: John Snow, Inc., for the U.S. Agency for International Development.

Training Curriculum in Laboratory Logistics: Part I
DELIVER. 2006. *Training Curriculum in Laboratory Logistics: Part I.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Training Curriculum in Laboratory Logistics: Part II (Draft)
DELIVER. 2006. *Training Curriculum in Laboratory Logistics: Part II (Draft).* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

USAID Contraceptive Procurement Guide and Product Catalog 2006
DELIVER. 2005. *USAID Contraceptive Procurement Guide and Product Catalog 2006.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

IV. LOGISTICS BRIEFS AND SUCCESS STORIES

On Track: Auto-Disable Syringes: A Health Solution and a Logistics Challenge (also in Spanish)
John Snow, Inc./DELIVER. 2003. *On Track: Auto-Disable Syringes: A Health Solution and a Logistics Challenge.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Delivering HIV/AIDS Commodities to Customers: Lessons Learned in Supply Chain Management
DELIVER. 2006. *Delivering HIV/AIDS Commodities to Customers: Lessons Learned in Supply Chain Management.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

On Track: Implementing Logistics Systems in Areas Affected by Conflict
John Snow, Inc./DELIVER. 2004. *On Track: Implementing Logistics Systems in Areas Affected by Conflict.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

On Track: Importance of Choice
John Snow, Inc./DELIVER. 2003. *On Track: Importance of Choice***.** Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

On Track: Importance of Logistics: No Product? No Program (also in Spanish)
John Snow, Inc./DELIVER. 2002. *On Track: Importance of Logistics: No Product? No Program.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Lessons Learned in Managing Laboratory Supplies
DELIVER. 2006. *Lessons Learned in Managing Laboratory Supplies.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

On Track: Influence of Logistics on Contraceptive Use
John Snow Inc./DELIVER. 2005. *On Track: Influence of Logistics on Contraceptive Use.* Arlington, Va.: John Snow Inc./DELIVER, for the U.S. Agency for International Development.

On Track: ProQ: Software for Estimating HIV Test Needs for VCT & PMTCT Programs
John Snow, Inc./DELIVER. 2003. *On Track: ProQ: Software for Estimating HIV Test Needs for VCT & PMTCT Programs.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Segmenting Markets To Maximize Contraceptive Security
John Snow, Inc./DELIVER. 2002. *Segmenting Markets to Maximize Contraceptive Security.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Success Story: Market Segmentation: Helping Target the Right Programs to the Right Clients
DELIVER. 2006. *Success Story: Market Segmentation: Helping Target the Right Programs to the Right Clients.* Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

On Track: Web Sharing Tool Is Key to Supply Initiative's Collaborative Strategy
John Snow, Inc./DELIVER. 2003. *On Track: Web Sharing Tool Is Key to Supply Initiative's Collaborative Strategy.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

V. POLICY PAPERS

Contraceptive Forecasting Accuracy: Trends and Determinants
Karim, Ali Mehryar, Karen Ampeh, and Lois Todhunter. 2004. *Contraceptive Forecasting Accuracy: Trends and Determinants.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Contraceptive Security: Practical Experience in Improving Global, Regional, National, and Local Product Availability
Sarley, David, Raja Rao, Carolyn Hart, Leslie Patykewich, Paul Dowling, Wendy Abramson, Chris Wright, Nadia Olson, and Marie Tien. October 2006. *Contraceptive Security: Practical Experience in Improving Global, Regional, National, and Local Product Availability*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Equity of Family Planning in Developing Countries
Karim, Ali, David Sarley, David O'Brien, Dana Aronovich, Leslie Patykewich, Nora Quesada, and Patricia Taylor. 2004. *Equity of Family Planning in Developing Countries.*
Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

HIV/AIDS Commodity Security: Supply Chain Management Implications for HIV/AIDS Policymakers and Program Managers
John Snow, Inc./DELIVER. 2004. *HIV/AIDS Commodity Security: Supply Chain Management Implications for HIV/AIDS Policymakers and Program Managers.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Influence of Family Planning Logistics Systems on Contraceptive Use (A Working Paper)
Karim, Ali. 2005. *Influence of Family Planning Logistics Systems on Contraceptive Use (A Working Paper).* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Logistical Challenge: Ensuring Access to ARVs for Kids
DELIVER. 2005. *Logistical Challenge: Ensuring Access to ARVs for Kids.*
Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Process Mapping for Improved Health Logistics System Performance
DELIVER. 2005. *Process Mapping for Improved Health Logistics System Performance*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Procurement Strategies for Health Commodities: An Examination of Options and Mechanisms within the Commodity Security Context
Rao, Raja, Peter Mellon, David Sarley. 2006. *Procurement Strategies for Health Commodities: An Examination of Options and Mechanisms within the Commodity Security Context*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Promoting Contraceptive Security through Innovative Health System Interventions
John Snow, Inc./DELIVER. 2005. *Promoting Contraceptive Security Through Innovative Health System Interventions* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Reproductive Health Commodity Security for Improved Maternal and Child Health (also in French)
Kagone, Meba. Lisa Hare, David O'Brien, Dana Aronovich, Aoua Diarra. 2003. *Reproductive Health Commodity Security for Improved Maternal and Child Health.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

VI. SOFTWARE MANUALS

PipeLine Brochure (also in French and Spanish)
John Snow, Inc./DELIVER. 2004. *PipeLine Brochure*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

PipeLine 3.0 User's Guide (also in French, Spanish, and Arabic)
John Snow, Inc./DELIVER. 2004. *PipeLine User's Guide.* Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

ProQ User's Manual
John Snow, Inc./DELIVER. 2003. *ProQ User's Manual*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Supply Chain Manager User's Manual
DELIVER. 2006. *Supply Chain Manager User's Manual*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

APPENDIX 3

CONTRACEPTIVE SECURITY INDEX

USAID
FROM THE AMERICAN PEOPLE

CONTRACEPTIVE SECURITY INDEX 2006

A Tool for Priority Setting and Planning

December 2006

This publication was produced for review by the United States Agency for International Development. It was prepared by the DELIVER project.

DELIVER
No Product? No Program. Logistics for Health

CONTRACEPTIVE SECURITY INDEX 2006

A Tool for Priority Setting and Planning

DELIVER

DELIVER, a six-year worldwide technical assistance support contract, is funded by the U.S. Agency for International Development (USAID).

Implemented by John Snow, Inc. (JSI) (contract no. HRN-C-00-00-00010-00) and subcontractors (Manoff Group, Program for Appropriate Technology in Health [PATH], and Crown Agents Consultancy, Inc.), DELIVER strengthens the supply chains of health and family planning programs in developing countries to ensure the availability of critical health products for customers. DELIVER also provides technical management of USAID's central contraceptive management information system.

Recommended Citation

DELIVER and Task Order 1 of the USAID | Health Policy Initiative. 2006. *Contraceptive Security Index 2006: A Tool for Priority Setting and Planning*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
Email: deliver_project@jsi.com
Internet: deliver.jsi.com

A primary goal of reproductive health and family planning programs is to ensure that people can choose, obtain, and use a wide range of high-quality, affordable contraceptive methods and condoms for STI/HIV prevention. Referred to as *contraceptive security*, this goal requires sustainable strategies that will ensure and maintain access to and availability of supplies.

As global demand for family planning continues to rise, contraceptive security (CS) will become more challenging to achieve. Financing for reproductive health (RH) and family planning (FP) programs is not keeping pace with demand and donor resources are more constrained than ever. Countries are being encouraged to contribute to the procurement of RH and FP commodities from their national and local budgets. Despite investments in service delivery and logistics systems, these systems remain inadequate in many countries. At the same time, increased demand—coupled with the impact of the HIV/AIDS pandemic, health sector reforms, limited national and international funding, and the brain drain—leaves countries unable to meet all of their populations' RH needs.

It remains critical that stakeholders and program managers focus attention on long-term CS. Programs cannot meet their clients' RH and FP needs without the reliable availability of high-quality contraceptive supplies and services. Attaining the poverty reduction and health goals adopted by many countries will be slowed unless improvements are made in CS. Ensuring contraceptive supply and service availability to clients requires a multi-sectoral approach. The public and private sectors must cooperate to ensure a supportive policy environment, appropriate forecasting and procurement of commodities, efficient supply chains, well-trained providers, effective service delivery systems, an accepting social environment, and adequate financing. To plan effective interventions to reach this goal, policymakers, program managers, and international donor agencies need to know if and how their programs are progressing toward CS.

This wall chart presents a set of indicators that can be used to measure a country's level of CS and to monitor global progress toward reaching this goal, over time. The indicators are aggregated to establish a composite index. The *Contraceptive Security Index 2006* was first calculated and presented in 2003; the *Contraceptive Security Index 2006* presents an update of those findings.

USES

The *Contraceptive Security Index 2006* is a powerful tool for raising awareness about contraceptive security (CS) and the interrelationships between program components, different sectors, and program outcomes. At the national and international levels, the index can be used to set priorities; and to plan and advocate to support policies and other interventions that promote progress toward CS. At the country level, it can help identify areas of relative strength and weakness to help stakeholders target their resources more effectively and appropriately. However, because the *CS Index* presents a broad picture of CS in a country, in-depth assessments of specific components are required to identify issues that need to be addressed in national CS strategic plans.

The *CS Index* is also a useful guide for helping global donors and lenders determine the countries most in need of assistance and to determine what kind of assistance they need. The index can help country governments, donors, and lenders improve resource allocation by giving them a way to track where countries are on a continuum of CS.

With repeated measures taken over time, the index can provide a measure of progress toward the goal of CS. By drawing attention to the importance of CS, this tool can help donors and governments focus on meeting the growing contraceptive needs into the future.

Methodological Considerations

This index represents a country's CS situation at a point in time, although the actual data was collected over a period of years. It is unavoidable that indicators will be updated for different countries at different intervals. Ideally, to use the results to monitor progress toward the goal of CS over time, the index will be updated periodically (e.g., every two to three years).

Comparisons can be drawn over time between the 2003 and 2006 findings at the aggregate level (i.e., by region, component, and total score), as presented in the *Results* section. However, because of a change in the data collection methodology for some of the supply chain indicators (see the *Methodology, Definitions, Supply Chain* section), comparisons across time from 2003 to 2006 at the country level and at the individual supply chain indicator level are not advisable at this time. Nonetheless, although time trends need to be considered with caution in this update, the index's applicability for the other purposes mentioned above remains valid.

RESULTS

A total of 63 countries are represented in the 2006 index, including the 57 countries from the 2003 index plus six additional countries new to the index.

Table 1 shows the raw data for the 17 indicators, grouped into the five components that were used to construct the *CS Index:* supply chain, finance, health and social environment, access, and utilization. This represents the most current data available. However, where new values were not available in 2006, raw scores from the 2003 index are included in this index as the most current data available.

Table 2 shows the weighted scores by component and total. Figure 1 shows the total weighted scores for the 63 countries presented in the index. The range of possible scores on the weighted *CS Index* is 0 to 100, although actual scores in 2006 range from 35.5 to 73.2. In 2003, the range was 28.1 to 68.1. Using a paired t-test, the 2006 total scores, averaged across all countries included in both the 2003 and 2006 indices, represent a statistically significant increase from 2003, which indicates aggregate improvement. Figure 2 compares total index scores averaged by region. The observed increases in the total index score are significant only in Asia and the Pacific, the Middle East and North Africa, and sub-Saharan Africa. The global averages for the five components show a significant improvement in every component from 2003 to 2006 (see figure 3). In most cases, averages for the component scores by region also showed improvement, although these improvements were only significant in the following cases:

Supply Chain: sub-Saharan Africa

Finance: Asia and the Pacific, Eastern Europe and Central Asia, and Middle East and North Africa

Health and Social Environment: Latin America and the Caribbean and sub-Saharan Africa

Access: Eastern Europe and Central Asia and sub-Saharan Africa

Utilization: Asia and the Pacific and Latin America and the Caribbean

Table 1. Contraceptive Security Index Indicators, Raw Data

	SUPPLY CHAIN					FINANCE			HEALTH & SOCIAL ENVIRONMENT			ACCESS			UTILIZATION		
	Storage and Distribution max=30	LMIS max=12	Forecasting max=8	Procurement max=8	Contraceptive Policy max=4	Gov. Health Expenditure max=30	Per Capita GNI, PPP max=$20,000	Poverty Level max=100	Governance max=30	Women's Education max=100	Adult HIV Prevalence max=50	Access to FP Methods max=4	Public Sector Targeting max=10	Spread of Access to FP Methods max=1	Method Mix max=1	Unmet Need for FP max=50	CPR max=100
ASIA & THE PACIFIC																	
Bangladesh	30	12	8	8	3.3	12	1969	50	9.3	50	0.1	3.3	1.5	0.08	0.44	11.2	47
Cambodia	-	-	-	-	3.1	21	2311	36	10.5	20	2.6	2.5	0.6	0.19	0.25	29.7	19
India	-	-	-	-	4.0	8	3116	29	13.4	47	0.9	2.5	0.9	0.06	0.75	15.8	46
Indonesia	18	4	6	3	3.5	7	3485	27	10.6	60	0.1	2.6	1.4	0.10	0.38	8.6	57
Nepal	30	12	8	8	3.1	-	1485	31	9.3	39	0.5	3.1	0.7	0.08	0.25	27.8	35
Pakistan	12	5	5	6	3.8	4	2174	33	8.9	19	0.1	2.7	-	0.07	-	33.0	20
Philippines	21	10	3	8	2.0	8	4946	37	12.5	88	0.1	2.6	1.2	0.06	0.27	17.3	33
Vietnam	22	10	6	5	3.6	6	2702	29	11.4	70	0.4	3.7	1.2	0.02	0.56	4.8	66
EASTERN EUROPE AND CENTRAL ASIA																	
Armenia	-	-	-	-	1.9	7	4156	51	12.4	88	0.1	1.4	-	0.23	0.30	11.8	20
Azerbaijan	6	1	0	0	2.0	-	3811	49	9.2	81	0.1	2.1	-	0.12	0.41	12.0	12
Georgia	-	-	-	-	1.7	9	2895	55	10.2	80	0.1	2.2	-	0.08	0.39	21.3	27
Kazakhstan	-	-	-	-	3.8	14	6933	35	10.1	92	0.2	2.6	1.0	0.04	0.67	8.7	53
Kyrgyzstan	-	-	-	-	2.6	13	1856	48	10.2	92	0.1	2.8	0.9	0.07	0.74	11.6	49
Turkey	-	-	-	-	4.0	9	7724	27	14.0	67	0.1	3.1	1.1	0.03	0.41	10.1	43
Turkmenistan	-	-	-	-	0.6	-	6910	12	5.8	-	0.1	3.1	0.8	0.07	0.70	10.1	53
Ukraine	-	-	-	-	2.8	13	6330	20	11.2	96	1.4	2.9	-	0.29	0.41	14.9	38
Uzbekistan	-	-	-	-	2.8	-	1862	28	6.2	94	0.1	2.6	1.0	0.03	0.86	13.7	63
LATIN AMERICA & THE CARIBBEAN																	
Bolivia	21	10	7	8	2.0	15	2600	63	12.4	85	0.1	2.3	0.8	0.12	0.11	22.7	35
Brazil	-	-	-	-	2.7	13	7935	22	15.1	100	0.7	2.0	1.3	0.10	0.51	7.3	70
Colombia	17	1	6	3	4.0	28	6945	64	11.7	74	0.7	3.6	1.3	0.03	0.24	6.1	68
Dominican Republic	14	2	2	1	3.2	18	6863	29	13.5	65	1.7	2.5	1.3	0.09	0.66	10.9	66
Ecuador	20	5	6	7	2.8	-	3768	46	11.1	60	0.3	3.5	1.7	0.03	0.24	7.4	59
El Salvador	22	10	8	7	3.0	24	4894	48	14.6	59	0.7	3.0	1.9	0.07	0.43	9.0	61
Guatemala	24	12	7	8	1.6	17	4263	56	11.1	41	1.1	2.5	1.2	0.10	0.41	23.1	34
Guyana	21	7	1	4	2.9	-	4244	35	13.9	97	2.5	2.0	-	0.20	-	-	36
Haiti	26	5	8	8	1.9	23	1680	65	5.5	20	5.6	1.8	1.0	0.25	0.39	39.6	22
Honduras	8	1	2	3	3.5	-	2760	48	12.0	37	1.8	2.9	1.9	0.09	0.16	11.2	51
Jamaica	-	-	-	-	4.0	7	3950	19	14.7	85	1.2	3.1	2.5	0.13	0.18	10.8	63
Mexico	28	10	7	7	3.1	16	9645	20	15.2	83	0.3	3.5	-	0.03	-	19.0	59
Nicaragua	24	12	8	8	2.1	18	3481	48	13.1	66	0.2	3.0	0.7	0.08	0.17	14.6	66
Paraguay	10	5	7	4	2.3	17	4817	22	10.3	66	0.5	2.6	2.3	0.06	0.06	6.6	61
Peru	25	11	7	5	2.7	12	5395	49	12.9	86	0.5	2.4	1.1	0.15	0.11	10.2	47
MIDDLE EAST & NORTH AFRICA																	
Egypt	-	-	-	-	2.6	3	4200	17	12.2	82	0.1	2.7	1.4	0.08	0.55	9.5	57
Jordan	26	9	7	5	3.3	14	4765	12	15.2	87	0.1	2.8	1.6	0.03	0.49	11.0	41
Morocco	26	11	7	8	4.0	4	4253	19	13.9	41	0.1	2.7	1.5	0.12	0.68	10.0	55
Yemen	13	10	6	5	3.8	8	809	42	8.7	29	0.1	1.5	0.1	0.15	0.25	38.6	13
SUB-SAHARAN AFRICA																	
Benin	8	3	6	4	2.9	-	1085	29	13.2	17	1.9	2.8	0.5	0.09	0.11	27.2	7
Burkina Faso	17	10	7	4	3.9	3	1168	46	12.6	9	4.2	2.8	0.2	0.11	0.05	28.8	9
Cameroon	20	7	6	7	3.3	7	2117	40	9.8	28	6.9	2.5	0.2	0.15	0.50	20.2	13
Chad	-	-	-	-	3.8	-	1337	64	8.3	7	4.8	1.5	0.2	0.28	-	9.7	2
Côte d'Ivoire	5	1	1	0	2.8	6	1474	15	6.7	18	7.0	1.8	0.1	0.21	0.29	27.7	7
Eritrea	18	7	3	3	3.0	-	962	53	9.1	22	2.7	1.8	0.1	0.18	0.16	27.0	5
Ethiopia	12	4	6	2	1.8	13	750	44	8.9	16	4.4	1.6	0.3	0.28	0.44	35.2	14
Gabon	-	-	-	-	1.3	-	5699	-	12.2	42	8.1	1.7	0.7	0.17	0.35	28.0	12
Gambia	7	1	4	-	2.4	-	1885	58	13.2	28	1.2	2.5	-	0.21	-	-	9
Ghana	20	10	7	5	3.8	8	2221	40	14.5	38	3.1	2.9	0.7	0.08	0.13	34.0	19
Guinea	-	-	-	-	2.1	9	2158	40	9.2	15	3.2	2.1	0.7	0.24	0.36	24.2	6
Kenya	13	11	7	4	3.3	10	1130	52	10.6	32	6.7	2.8	0.5	0.11	0.32	24.5	32
Madagascar	22	11	7	4	2.7	3	843	71	14.3	14	1.7	2.7	0.7	0.16	0.47	23.6	17
Malawi	19	9	7	8	2.0	-	631	65	11.7	29	14.2	2.9	0.6	0.12	0.52	29.7	28
Mali	16	10	7	6	3.7	-	953	64	14.0	14	1.9	2.6	0.2	0.22	0.43	28.5	6
Mauritania	-	-	-	-	1.6	-	2048	46	13.8	20	0.6	2.3	0.0	0.11	0.35	31.6	5
Mozambique	12	5	6	3	3.7	-	1168	69	12.6	13	12.2	2.7	0.3	0.11	0.21	18.4	12
Namibia	-	-	-	-	3.9	15	7515	35	17.1	66	21.3	2.8	0.4	0.17	0.25	22.1	43
Nigeria	12	7	6	5	2.4	3	966	34	7.7	32	5.4	2.3	0.4	0.16	0.02	16.9	8
Rwanda	19	10	7	7	3.8	-	1241	60	10.7	15	5.1	2.3	0.3	0.24	0.19	35.6	10
Senegal	15	10	7	4	3.5	15	1662	33	13.9	16	0.8	2.6	0.1	0.11	0.21	34.8	10
South Africa	-	-	-	-	3.4	12	10964	11	17.6	91	21.5	2.6	0.8	0.23	0.23	15.0	55
Tanzania	25	10	8	7	3.3	-	671	36	12.3	5	8.8	2.6	0.4	0.10	0.21	21.8	20
Togo	15	9	7	6	3.0	-	1508	32	9.2	22	4.1	3.1	0.5	0.04	0.13	32.3	9
Uganda	19	9	7	5	3.3	10	1448	38	11.2	18	4.1	1.7	0.3	0.24	0.18	34.6	19
Zambia	22	10	7	5	2.6	3	890	73	11.9	25	16.5	2.1	0.4	0.27	0.32	27.4	23
Zimbabwe	25	8	7	8	3.5	3	2041	35	5.8	35	24.6	3.0	2.2	0.12	0.65	12.9	50

Table 2. Weighted Component Scores

	Supply Chain (20 points)	Finance (20 points)	Health & Social Environment (20 points)	Access (20 points)	Utilization (20 points)	Total (max=100 points)
ASIA & THE PACIFIC						
Bangladesh	19.3	6.6	12.0	12.7	12.0	62.7
Cambodia	12.5	9.6	10.0	10.0	9.0	51.1
India	14.2	7.5	12.7	11.0	9.3	54.6
Indonesia	19.4	8.2	15.4	12.6	14.9	70.5
Nepal	19.1	7.6	11.3	11.8	10.3	60.2
Pakistan	12.8	6.1	9.9	11.3	9.0	49.1
Philippines	13.6	7.6	15.3	11.3	11.4	59.2
Vietnam	15.4	6.9	13.8	13.4	13.3	62.9
AVERAGE	15.8	7.5	12.6	11.8	11.2	58.8
EASTERN EUROPE & CENTRAL ASIA						
Armenia	12.0	6.3	15.3	7.7	11.1	52.4
Azerbaijan	3.0	6.2	14.1	9.7	9.8	42.8
Georgia	15.3	6.0	14.2	10.2	9.7	55.5
Kazakhstan	10.2	9.9	15.0	11.5	11.2	57.8
Kyrgyzstan	17.1	7.0	15.0	11.5	10.1	60.7
Turkey	10.5	9.4	14.2	12.3	12.1	58.6
Turkmenistan	10.5	13.0	14.3	11.8	10.9	60.4
Ukraine	10.3	10.3	15.4	10.2	11.1	57.3
Uzbekistan	17.2	8.1	14.3	11.4	10.0	61.0
AVERAGE	11.8	8.5	14.7	10.7	10.7	56.3
LATIN AMERICA & THE CARIBBEAN						
Bolivia	15.9	6.7	15.1	10.2	11.9	59.8
Brazil	9.8	10.6	16.6	10.2	13.6	60.9
Colombia	11.2	11.0	14.1	13.4	15.5	65.2
Dominican Republic	6.9	11.0	13.8	11.1	11.9	54.6
Ecuador	13.3	7.8	13.1	13.4	14.7	62.3
El Salvador	16.9	10.5	13.8	12.4	13.3	66.9
Guatemala	16.6	8.1	11.7	11.1	9.8	57.2
Guyana	10.5	5.8	15.9	9.1	10.6	51.9
Haiti	15.0	8.0	8.5	8.6	6.9	47.0
Honduras	7.3	4.4	11.5	12.1	14.1	49.5
Jamaica	19.4	8.2	15.4	12.6	14.9	70.5
Mexico	17.2	12.0	15.5	13.8	14.7	73.2
Nicaragua	17.3	8.7	13.9	11.6	14.7	66.3
Paraguay	11.0	10.6	13.3	12.1	16.1	63.1
Peru	15.7	7.9	15.2	10.4	14.4	63.6
AVERAGE	13.6	8.8	13.8	11.5	13.1	60.8
MIDDLE EAST & NORTH AFRICA						
Egypt	13.8	7.6	14.8	11.6	12.2	60.0
Jordan	15.8	10.7	15.8	12.1	11.3	65.8
Morocco	18.6	7.7	12.5	11.4	11.1	61.3
Yemen	14.0	5.9	10.5	8.2	7.4	46.0
AVERAGE	15.6	8.0	13.4	10.8	10.5	58.3
SUB-SAHARAN AFRICA						
Benin	10.0	7.9	10.5	11.0	9.4	48.8
Burkina Faso	15.2	4.6	9.5	10.8	9.8	49.9
Cameroon	14.8	6.2	9.8	9.9	8.2	48.8
Chad	7.3	2.8	8.3	7.4	9.6	35.5
Côte d'Ivoire	4.3	7.4	8.4	8.4	8.2	36.7
Eritrea	10.7	3.5	9.8	8.5	9.0	41.5
Ethiopia	8.6	6.8	9.1	7.7	6.6	38.9
Gabon	8.4	10.1	11.1	8.8	8.1	46.4
Gambia	5.7	6.0	11.3	9.6	9.1	41.7
Ghana	15.5	6.5	12.0	11.4	9.2	54.6
Guinea	11.4	6.8	9.3	9.1	8.1	44.6
Kenya	14.2	5.7	10.3	10.9	10.1	51.2
Madagascar	14.9	2.9	10.5	10.6	8.2	47.1
Malawi	15.4	6.1	9.3	11.1	7.7	49.6
Mali	15.8	3.5	10.5	9.7	7.1	46.4
Mauritania	12.1	7.1	11.0	9.7	7.1	47.0
Mozambique	11.6	3.6	8.7	10.5	10.3	44.7
Namibia	10.8	10.2	12.0	10.4	11.6	55.1
Nigeria	12.3	5.4	9.8	9.7	11.4	48.6
Rwanda	17.1	4.6	9.4	9.1	8.0	48.1
Senegal	14.5	8.4	10.7	10.4	8.0	51.9
South Africa	7.0	12.2	13.8	10.0	13.5	56.4
Tanzania	17.6	5.3	8.6	10.6	10.4	52.4
Togo	15.1	8.5	9.6	11.9	8.8	53.8
Uganda	14.9	6.8	9.8	8.1	8.8	48.5
Zambia	15.2	2.7	8.8	8.6	9.1	44.4
Zimbabwe	17.3	5.7	7.0	12.4	10.6	52.9
AVERAGE	12.5	6.2	10.0	9.9	9.1	47.6
OVERALL AVERAGE	13.3	7.4	12.1	10.7	10.6	54.1

Figure 1. Total Weighted Scores: 63 Countries

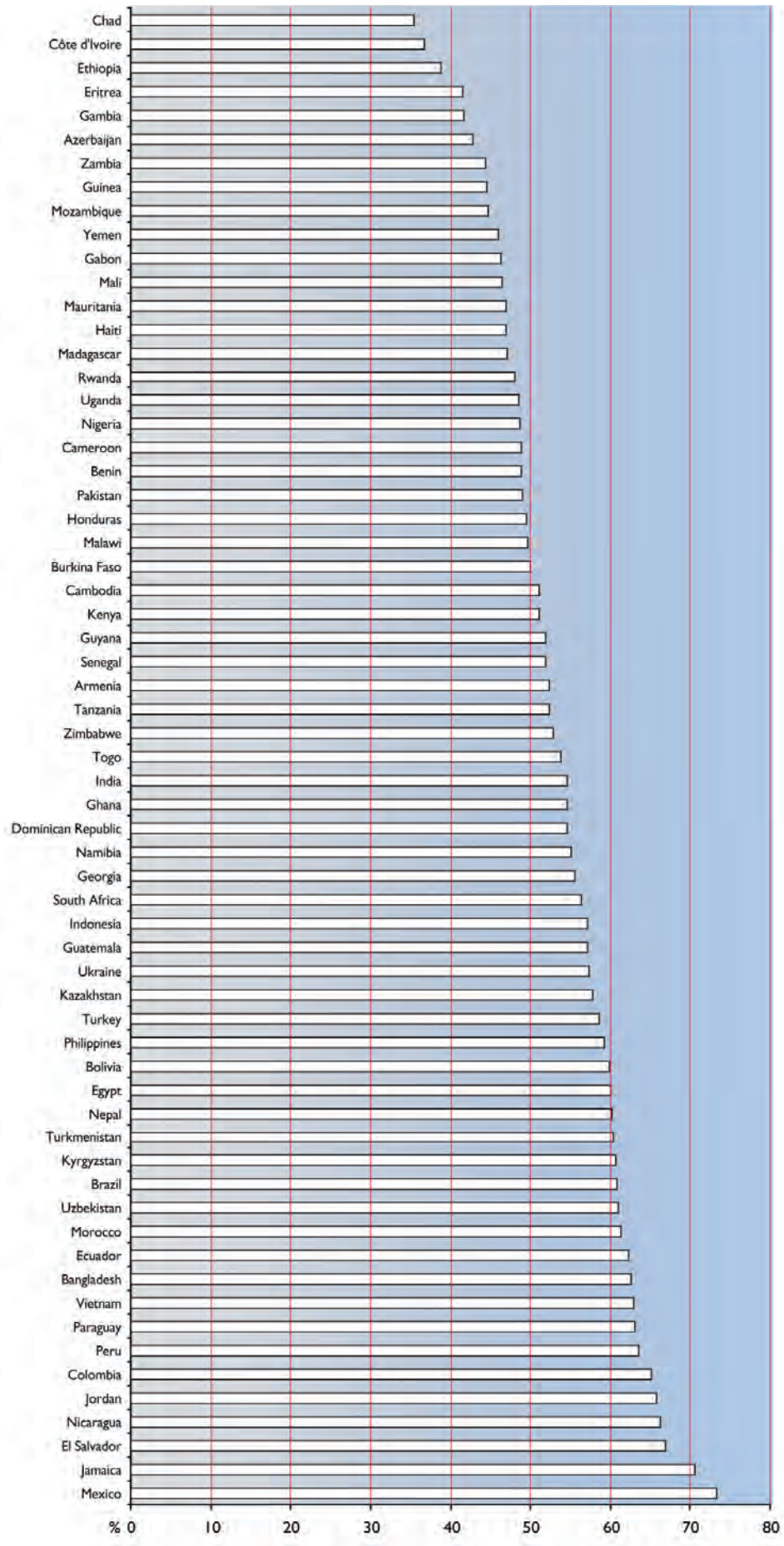


Figure 2. Total Scores Averaged by Region

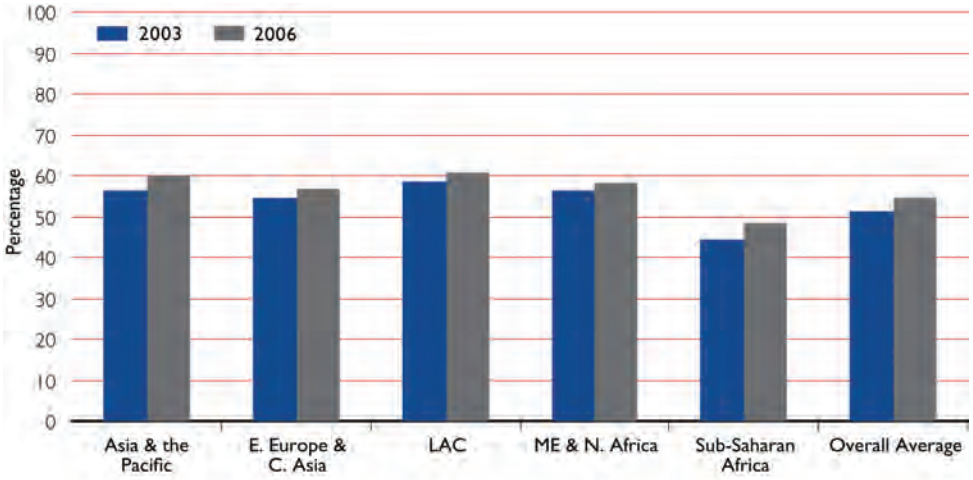
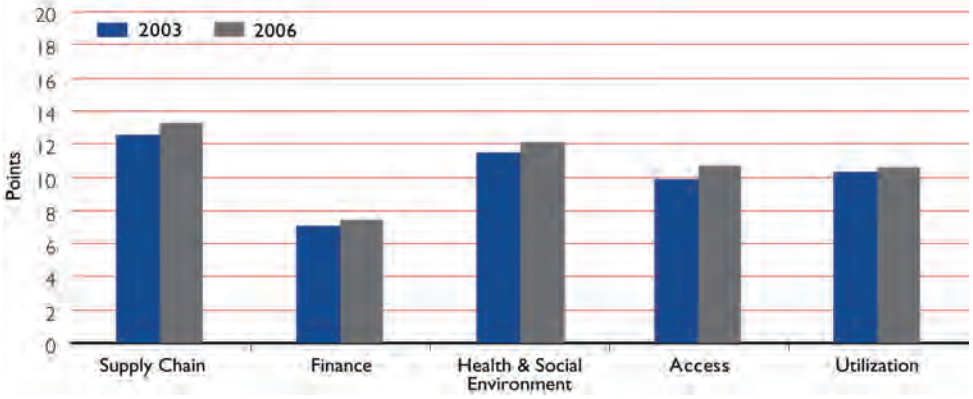


Figure 3. Total Scores Averaged by Region



Component scores for an individual country can be compared within a year (maximum weighted score of 20 for each component), enabling users to identify components that need attention and further assessment. Countries can score similarly overall, but have strengths or weaknesses in different components. This highlights the need for the indicators to be reviewed within the broader context of a country, including aspects not captured in the *CS Index* because of data limitations. Finally, it is important to note that movement in rank up or down by a few places at the country level may not represent significant differences or changes in the level of contraceptive security.

BACKGROUND

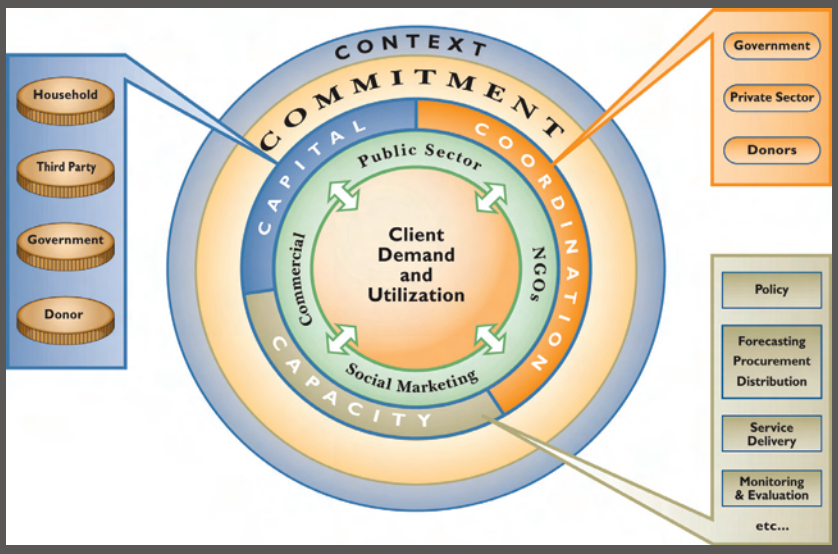
The *Contraceptive Security Index 2006* presents an update of the findings from the *Contraceptive Security Index 2003*. To be consistent with the current global definition of contraceptive security, the framework at the core of the *Strategic Pathway to Reproductive Health Commodity Security (SPARHCS)* was used as a conceptual guide in developing the *CS Index*. It defines the program and program environment components that are required to achieve RH commodity security, whether for contraceptives or for other RH commodities (see figure 4).

The *CS Index* and other efforts that promote and advance contraceptive security have drawn much needed attention to these issues, and have led to a global movement around contraceptive security.

METHODOLOGY

The *Contraceptive Security Index 2003* was developed by a team of CS experts from USAID, the DELIVER project of John Snow, Inc. (JSI), the POLICY Project of Futures Group, and Commercial Market Strategies (CMS). Using the same methodology as the 2003 index, the *CS Index 2006* was updated by a team from USAID, DELIVER, and Task Order 1 of the USAID | Health Policy Initiative of Constella Futures. The same indicators and data sources were maintained for the 2006 index using the latest version of all reference documents. (Refer to notes by indicator below.) If new indicator values were not available since the publication of the 2003 index, the 2003 data are preserved as the most current data available.

Figure 4. SPARHCS Framework for Reproductive Health Commodity Security



The process of constructing the *CS Index* was planned to minimize data collection costs (using only secondary data), and to maximize data reliability, validity, and replicability. The selected indicators are a mix of inputs and outputs, and programmatic and macro-level issues. Together, they paint a picture of CS and promote a cross-sectoral approach to addressing CS. Although some indicators are highly correlated, each represents an important aspect of CS. The 17 indicators are arrayed across the five CS components described below; the components are aggregated to create the index. For detailed information about how missing data were filled in to calculate the index, how indicators were weighted, and other technical issues, please refer to the *Contraceptive Security Index 2003: Technical Manual* (JSI/DELIVER and Futures Group/POLICY Project 2004).[1]

Definitions

Component I: Supply Chain—Each of the five indicators of logistics management represents a key function in the supply chain for contraceptive supplies. An effective supply chain ensures the continuous supply of sufficient quantities of high-quality contraceptives needed to achieve security. More effective management of supplies is associated with better prospects for contraceptive security.

When the *CS Index 2003* was calculated, the largest database available with the first four indicators listed below was from the application of the Family Planning Logistics Management (FPLM) project's *Composite Indicators for Contraceptive Logistics Management* (JSI/FPLM and EVALUATION Project 1999).[2] This tool was updated and improved under the DELIVER project and became the *Logistics System Assessment Tool* (JSI/DELIVER 2004),[3] which is the source of the updated data for the first four indicators for the *CS Index 2006*. The two tools are comparable because the LSAT was directly derived

from the *Composite Indicators,* however the maximum possible score for each indicator changed in the new tool. Due to the change in the data collection tool and methodology, comparisons over time at the country level are discouraged at this time.

- **Storage and distribution**—This indicator assesses storage capacity and conditions, standards for maintaining product quality, inventory control, stockouts, how system losses are tracked, and distribution and transportation systems.
- **LMIS (Logistics Management Information Systems)**—This indicator assesses reporting systems, validation of data, and information management and use in decisionmaking.
- **Forecasting**—This indicator assesses how forecasts of consumption are prepared, updated, validated, and incorporated into cost analysis and budgetary planning.
- **Procurement**—This indicator assesses how forecasts are used to determine short-term procurement plans and the degree to which correct amounts of contraceptives are obtained in an appropriate time frame.

The fifth supply-related indicator is drawn from the results of the Family Planning Effort (FPE) survey (Ross, Stover, and Adelaja 2006).[4]

- **Contraceptive policy**—Under some circumstances, locally manufactured contraceptives can provide an affordable and sustainable option for clients. In many countries, it will be more effective to have policies and regulations that facilitate open markets and the importation of competitively priced, high-quality products. This indicator measures the extent to which import laws and legal regulations facilitate the importation of contraceptive supplies that are not manufactured locally, or the extent to which contraceptives are manufactured within the country.

Component II: Finance—Sustainable and adequate financing for the procurement of contraceptives, service delivery, and other program components from international donors and lenders, national or local governments, households, and third parties is critical for ensuring contraceptive security. Without a commitment of financing, program quality and access will suffer and CS will not be sustainable. Data are not widely or readily available to obtain an adequate country-level picture of contraceptive financing by donors/lenders, third parties (e.g., insurers, employers), or the private sector. Three indicators are used to capture the prospects for government and household financing of family planning services and contraceptives in a country. The World Bank's *World Development Indicators* (WDI) were the source for these indicators (IBRD/World Bank 2006).

- **Government health expenditures as a percentage of total government spending**—A national government's commitment to public health, specifically to reproductive health and family planning, is critical for CS. The poorest segments of a population depend on free or subsidized health services, often provided by the government for essential preventive and curative health services. This indicator is a measure of political commitment to public health spending as a proxy for government commitment to family planning programs. Greater commitment to health spending means more potential resources for family planning programs as part of overall government health programs. This indicator is derived from two indicators in the WDI: public expenditures on health as a percentage of gross domestic product (GDP), divided by total government expenditures as a percentage of GDP:

  (Gov Exp on Health/GDP) ÷ (Total Gov Exp/GDP) = (Gov Exp on Health/Total Gov Exp)

- **Per capita GNI**—A greater ability to pay for contraceptives at the household level is associated with better prospects for CS. To allow for a better comparison across countries, this indicator represents the average consumer's potential ability to pay for family planning services and contraceptives expressed in purchasing power parity (PPP), which corrects for the differences in the market price of goods in each country.

- **Poverty level**—While per capita income measures the average consumer's ability to pay, there are always inequalities in the distribution of income. High poverty rates can threaten CS if provisions are not made to ensure access to services and commodities for the poor. Higher poverty rates can indicate a greater reliance of the population on the public sector, adding stress to already overburdened systems. Because higher poverty rates are associated with lower household incomes and poorer access to health care, higher poverty rates are also associated with poorer prospects for contraceptive security. This indicator is expressed as the percentage of the national population living below the nationally defined poverty line.

Component III: Health and Social Environment—The health and social environment component comprise three indicators; this component is included because it is widely recognized that other factors in the broader health and social environment can affect prospects for contraceptive security at both the country and individual levels, as described below.

- **Governance**—A healthier political environment improves prospects for contraceptive security. An accountable, stable, effective, and transparent government is more likely to be committed to the health and well-being of its population and to use its resources appropriately for the public good. International donors are also more likely to provide financial and material support to such a government. The private sector is more likely to invest in creating new or expanding existing markets for contraceptives. This indicator is a composite measure of governance that includes six dimensions of governance: voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. It is derived from the World Bank's *Governance Matters* (Kaufmann, Kraay, and Mastruzzi 2005).

- **Women's education**—Women's educational attainment is one of the best predictors of contraceptive use. Women who are educated beyond primary school are more likely to use a contraceptive method. In addition, in countries where women's status is good, educated women are more likely to advocate for the protection of family planning programs. This indicator is expressed as the percentage of females enrolled in secondary school, which is defined as the ratio of the number of students enrolled in secondary school to the population in the applicable age group (gross enrollment ratio). Secondary school enrollment rates were obtained from the Population Reference Bureau's online DataFinder database (*2005 Women of Our World* and *The World's Youth 2006 Data Sheet*).

- **Adult HIV prevalence**— It is increasingly recognized that a higher burden of HIV in a population can erode prospects for contraceptive security. HIV/AIDS contributes to higher levels of poverty and the pandemic has put new, competing demands on health financing. This indicator is expressed as the percentage of adults aged 15–49[5] who were infected with the HIV virus at the end of 2003. Adult HIV prevalence rates were obtained from the UNAIDS *Report on the Global HIV/AIDS Epidemic 2005*.

Component IV: Access—The three access indicators measure aspects of availability and access to modern methods of contraception—the degree to which clients can *choose and obtain* their method of choice. Family planning and reproductive health programs should strive to offer a variety of methods to meet the needs of *all* clients.

- **Access to modern family planning methods**—Ready and easy access by clients to a wide range of contraceptive methods is associated with better prospects for contraceptive security. When family planning services are widely available, it is very difficult to reverse progress in access and availability of these services and supplies. This indicator from the FPE survey measures the percentage of a country's population that has ready and easy access to male and female sterilization, pills, injectables, condoms, spermicides, and IUDs (Ross, Stover, and Adelaja 2006).[6]

- **Public sector targeting**—Public sector family planning programs that offer heavily subsidized (and sometimes free) services and commodities are designed to meet the needs of the poor and near-poor segments of a population. This public sector funding is limited in virtually every country. The degree to which the poorest people benefit from these subsidized services, while wealthier clients who can afford to pay for services and commodities have and use other options, reflects upon the long-term CS in a country. This indicator measures the proportion of a country's contraceptives distributed through public sector channels that go to poor and near poor family planning clients. *Poor and near poor* are clients who are in the lowest 40 percent of the population as defined by a standard of living index (SLI). Data from Demographic and Health Surveys (DHS) and Reproductive Health Surveys (RHS) are used both to compute the SLI and the distribution of public sector FP users across SLI categories.[7]

- **Spread of access to modern family planning methods**—Access to a wide range of family planning methods represents a choice for clients. Access to a range of methods can also mean that if one method becomes unavailable, other methods are available to clients in the interim. This concept of choice is key to contraceptive security, regardless of what methods clients choose (reflected in *Component V*). This indicator is related to the access indicator above and it uses the same data from the FPE survey. It measures whether clients have ready and easy access to a broad range of at least three contraceptive methods by selecting the highest-scored method, minus the third-highest scored method, divided by the sum of access scores for all methods (Ross, Stover, and Adelaja 2006).

Component V: Utilization—This component comprises three indicators that measure clients' behavior in terms of contraceptive use within the country program context.

- **Method mix**—While the *access* indicators (see *Component IV*) measure the extent to which consumers have ready and easy access to methods, this indicator measures the degree to which consumers *use* a range of methods. The broader the range of methods used, the better the prospects for contraceptive security, because it demonstrates that women have a choice and are choosing from a range of methods. This indicator was measured as the difference in prevalence rates between the most prevalent modern method in a country and the third-most prevalent method, divided by the total modern method prevalence. A higher value indicates a higher concentration of use on a limited number of methods, which is interpreted as being not conducive to contraceptive security. This indicator was derived from the most recently available DHS or RHS data set for each country.

- **Unmet need for family planning**—Unmet need is indicative of barriers to accessing and using family planning. The higher the percentage of women with unmet need for contraception, the poorer the prospects for contraceptive security because unmet need represents clients who express a need to use family planning but cannot or do not. This indicator measures the percentage of women who express a desire to space or limit their next pregnancy, or who would have preferred to avoid or delay their current pregnancy, but are not using a contraceptive method. This indicator was derived from the most recently available DHS or RHS data set for each country.

- **Contraceptive prevalence rate (CPR)**—This indicator is the most obvious outcome of contraceptive security—women actually using contraception. Higher contraceptive use is indicative of better access and availability of contraceptives for the population. Increased contraceptive use will also encourage the improved availability in both the public and private sectors through political pressures and market forces. This indicator measures the percentage of married women of reproductive age currently using a modern method of family planning. This data is from the Population Reference Bureau's *2006 World Population Data Sheet*.

REFERENCES

Hare, L., Hart, C., Scribner, S., Shepherd, C., Pandit, T. (ed.), and Bornbusch, A. (ed.). 2004. *SPARHCS: Strategic Pathway to Reproductive Health Commodity Security. A Tool for Assessment, Planning, and Implementation*. Baltimore, Md.: Information and Knowledge for Optimal Health (INFO) Project/Center for Communications Programs, Johns Hopkins Bloomberg School of Public Health.

International Bank for Reconstruction and Development (IBRD)/World Bank. 2006. *World Development Indicators 2006*. (http://devdata.worldbank.org/wdi2006/contents/index2.htm)

John Snow, Inc./DELIVER. 2004. *Logistics System Assessment Tool (LSAT)*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

John Snow, Inc./DELIVER and Futures Group/POLICY Project. 2004. *Contraceptive Security Index 2003: Technical Manual*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

John Snow, Inc./Family Planning Logistics Management (JSI/FPLM) and the EVALUATION Project. April 1999. *Composite Indicators for Contraceptive Logistics Management*. Arlington, Va.: JSI/FPLM, for the U.S. Agency for International Development.

Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. May 2005. *Governance Matters IV: Governance Indicators for 1996–2004*. (http:/www.worldbank.org/wbi/governance/govdata/)

Population Reference Bureau. March 2005. *2005 Women of Our World*. Washington, D.C.: Population Reference Bureau. (www.prb.org)

Population Reference Bureau. August 2006. *2006 World Population Data Sheet*. Washington, DC: Population Reference Bureau. (www.prb.org)

Population Reference Bureau. February 2006. *TheWorld's Youth 2006 Data Sheet*. Washington, DC: Population Reference Bureau. (www.prb.org)

Ross, John, John Stover, and Demi Adelaja. March 2006. *Family Planning Programs in 2004: Efforts, Justifications, Influences, and Special Populations of Interest*. Working Paper. Chapel Hill: MEASURE/Evaluation Project of the Carolina Population Center.

UNAIDS. 2005. *Report on the Global HIV/AIDS Epidemic 2005*. Geneva: UNAIDS.

ADDITIONAL RESOURCES

Ashford, L. 2002. *Securing Future Supplies for Family Planning and HIV/AIDS Prevention*. Washington, D.C.: MEASURE Communication/Population Reference Bureau. (http://www.prb.org/pdf/SecFutureSupplies_Eng.pdf)

Druce, Nel. March 2006. *Reproductive Health Commodity Security (RHCS) Country Case Studies Synthesis: Cambodia, Nigeria, Uganda and Zambia*. London: DFID Health Resource Centre.

Family Planning Logistics Management (FPLM)/John Snow, Inc. (JSI). 2000. *Programs That Deliver: Logistics' Contributions to Better Health in Developing Countries*. Arlington, Va.: FPLM/JSI. (http://deliver.jsi.com/2002/Pubs/Pubs_Policy/Programs_That_Deliver/index.cfm)

Finkle, C. 2003. *Ensuring Contraceptive Supply Security*. Outlook vol 2, no 3. Seattle: PATH. (http://www.path.org/files/eol20_3.pdf)

Finkle, Clea T., Jane Hutchings, and Janet Vail. 2001.*Contraceptive Security: Toward a Framework for a Global Assessment*. Seattle: Program for Appropriate Technology in Health (PATH).

Quijada, Caroline, Tania Dmytraczenko, and Beaura Mensah. July 2004. *Ensuring Contraceptive Security within New Development Assistance Mechanisms*. Bethesda, Md.: The Partners for Health Reform*plus* Project, Abt Associates, Inc.

Rao, Raja, Peter Mellon, and David Sarley. 2006. *Procurement Strategies for Health Commodities: An Examination of Options and Mechanisms within the Commodity Security Context*. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Sarley, David, Raja Rao, Carolyn Hart, Leslie Patykewich, Paul Dowling, Wendy Abramson, Chris Wright, Nadia Olson, and Marie Tien. 2006.
Contraceptive Security: Practical Experience in Improving Global, Regional, National, and Local Product Availability. Arlington, Va.: DELIVER, for the U.S. Agency for International Development.

Sine, J., and S. Sharma, 2002. *Policy Aspects of Achieving Contraceptive Security*. Policy Issues in Planning and Finance No 1. Washington, DC: POLICY Project/ Futures Group International. (http://www.policyproject.com/pubs/policyissues/PI_Eng.pdf)

Taylor, Patricia A., Nora Quesada, Wendy Abramson, Varuni Dayaratna, and Leslie Patykewich. 2004. *Regional Report: Contraceptive Security in Latin America and the Caribbean. Results and Recommendations*. Arlington, Va.: John Snow, Inc./DELIVER and Washington, DC: Futures Group/POLICY Project, for the U.S. Agency for International Development.

United Nations Population Fund (UNFPA). 2002. *Reproductive Health Essentials: Securing the Supply*. New York: UNFPA.
(http://www.unfpa.org/upload/lib_pub_file/39_filename_securingsupply_eng.pdf)

U.S. Agency for International Development (USAID). 2004. *Contraceptive Security: Ready Lessons*. Baltimore, Md.: INFO Project/Center for Communication Programs, Johns Hopkins Bloomberg School of Public Health, for the U.S. Agency for International Development. (http://www.dec.org, search under "contraceptive security").

Additional contraceptive security resources are available at the following web sites:

DELIVER project: (www.deliver.jsi.com)

Health Policy Initiative (HPI): (www.healthpolicyinitiative.com)

Maximizing Access and Quality (MAQ) Initiative: (www.maqweb.org)

Partners for Health Reform*plus* Project: (www.phrplus.org)

POLICY Project: (www.policyproject.com)

Population Action International: (www.populationaction.org)

PSP-*One* Project (formerly Commercial Market Strategies Project): (www.psp-one.com)

The Supply Initiative: www.rhsupplies.org)

UNFPA: (www.unfpa.org)

USAID: (www.usaid.gov)

The USAID Contraceptive Security Team works to advance and support planning and implementation for contraceptive security in countries. The team provides technical assistance to USAID missions, country partners, donors, and international partners. The team can be contacted c/o Mark Rilling or Alan Bornbusch, Commodities Security and Logistics Division, Office of Population and Reproductive Health, Bureau for Global Health, mrilling@usaid.gov or abornbusch@usaid.gov.

The Reproductive Health Supplies Coalition is a 21-member coalition of donors, multilateral organizations, private foundations, nongovernmental organizations, low- and middle-income country governments, and others dedicated to improving global health and the quality of life by ensuring access to high-quality reproductive health (RH) supplies. The coalition works to synthesize and share information, knowledge, and experience; improve coordination and harmonization of programs; and develop new tools and approaches to address the challenges of inadequate and unreliable financing for RH supplies, inefficiencies in supply systems; and inequities in access to RH supplies. More information can be found at (www.rhsupplies.org.)

ACKNOWLEDGMENTS

Development of the *CS Index 2006* was carried out by staff from the USAID Contraceptive Security Team, the DELIVER project of John Snow, Inc. (JSI), and the POLICY Project and Task Order 1 of the USAID | Health Policy Initiative of Constella Futures.

Funding for the development and publication of the *CS Index 2006* was provided by the U.S. Agency for International Development (USAID) under the DELIVER project (HRN-C-00-00-00010-00) implemented by John Snow, Inc. In addition, the POLICY Project contributed to the development of this wallchart under USAID contract no. HRN-C-00-00-00006-00. This work continued under Task Order 1 of the USAID | Health Policy Initiative under contract no. GPO-I-01-05-00040-00. Task Order 1 is implemented by Constella Futures in collaboration with the Center for Development and Population Activities, the White Ribbon Alliance, and the World Conference of Religions for Peace.

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

Cover photographs courtesy of DELIVER.

For more information, please visit

http://www.deliver.jsi.com.

DELIVER
John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
Email: deliver_project@jsi.com
Internet: deliver.jsi.com

Contraceptive Security Index 2003

A Tool for Priority Setting and Planning

A primary goal of reproductive health and family planning programs is to ensure that people can choose, obtain, and use a wide range of high-quality, affordable contraceptive methods and condoms for STI/HIV prevention. Referred to as contraceptive security, this goal requires sustainable strategies to ensure and maintain access to and availability of supplies.

USAID
FROM THE AMERICAN PEOPLE

POLICY

DELIVER
No Product? No Program. Logistics for Health

As demand for family planning continues to rise in developing countries and countries in transition, compounded by significant population growth, contraceptive security (CS) will be more challenging to achieve. Financing for reproductive health (RH) and family planning (FP) programs has not kept pace with demand and donor resources are more constrained than ever. These pressures have placed an increasing burden on national programs, with logistics and service delivery systems stretched to their limits. Not only has higher demand for supplies driven up funding requirements, but the fight against HIV/AIDS has also multiplied the need for additional resources and increased competition for existing resources. Now, more than ever, it is critical that programs focus attention on long-term contraceptive security.

Programs cannot meet their clients' reproductive health and family planning needs without the reliable availability of quality contraceptive supplies and services. Further, attaining the poverty reduction and health goals adopted by many countries-most notably in HIV reduction, and maternal and child health-will be slowed without improvements in contraceptive security. Ensuring contraceptive supplies and services are available to clients requires a multi-sectoral approach. The public and private sectors must cooperate to ensure a supportive policy environment, appropriate forecasting and procurement of commodities, efficient supply chains, well-trained providers, effective service delivery systems, a supportive social environment, and adequate financing. Policy makers, program managers, and international donor agencies need to know if and how their programs are progressing toward contraceptive security in order to plan effective interventions to reach this goal.

This document presents a tool developed to measure a country's level of contraceptive security and to monitor it over time. The tool uses a set of indicators covering the primary components of contraceptive security to measure the level of contraceptive security in countries. These indicators can be used separately to monitor progress in each component. They are also aggregated to establish a composite index, which can be used to compare countries at a point in time or to monitor progress over time within a country.

The Contraceptive Security Index can also be used for priority setting, planning, and advocacy at the national and international levels to support policies and other interventions that promote contraceptive security. The index can help country governments, donors, and lenders improve resource allocation by providing them with a way to track where countries are on a continuum of contraceptive security. With repeated measures over time, the index is meant to provide a measure of progress toward the goal of contraceptive security.

Uses

These results are a powerful tool for raising awareness about CS and the inter-relationships between program components, different sectors, and program outcomes. The CS Index can be useful for cross-country comparisons, comparing inputs, and program outputs. At the country level, it can identify areas of relative strengths and weaknesses to help stakeholders target their resources more effectively and appropriately. However, in-depth assessment is required at the country level to identify issues that need to be addressed through the development of a strategic plan designed to move countries toward contraceptive security.

The CS Index can be used to set priorities and to advocate for national and international support for promoting progress toward contraceptive security. It is also a useful guide for advocating among global donors and lenders to determine the countries most in need of assistance and to determine what kind of assistance they need. The results can be used to monitor progress

toward the goal of contraceptive security over time. By drawing attention to the importance of contraceptive security, this tool can help donors and governments focus on meeting the growing contraceptive needs into the future.

Finally, the CS Index should be updated periodically, as new data become available (ideally, every two to three years).

Results

Table 1 shows the 17 indicators, grouped into the five components used to construct the CS Index. Figure 1 shows the scores for the 57 countries included in the index. The range of possible scores on the weighted CS Index is 0 to 100, although actual scores range from 28.1 to 68.1. It is important to note that movement in rank up or down by a few places may not represent significant differences in levels of contraceptive security. The index represents a country's CS situation at a point in time, although the actual data was collected over a period of years. It is unavoidable that indicators will be updated for different countries at different intervals.

Individual countries can be compared on their weighted component scores (maximum score of 20 for each component), allowing users to identify components that need attention and further assessment (see table 2). Countries can score similarly overall, but have strengths or weaknesses in different components. Figures 2 and 3 show the weighted component scores for the five highest scoring and five lowest scoring countries in the series. Of the five highest scoring countries—Brazil, Mexico, Peru, Colombia, and Jordan—the total scores are very similar. However, Jordan is stronger in supply chain management and the health and social environment component than the other countries, but has weaker scores for access and utilization. Colombia's scores show the opposite situation—the public sector supply chain scores are relatively weak, but utilization is high. This highlights that the indicators need to be reviewed within the broader context of a country, including aspects not captured in the CS Index due to data limitations. In Colombia, for example, the private sector is a major provider of family planning services and supplies.

Background

The CS Index builds on the recent work of other public health organizations. Staff at the Program for Appropriate Technology in Health (PATH) authored *Contraceptive Security: Toward a Framework for a Global Assessment* (Finkle, Hutchings, and Vail 2001), which was presented at a 2001 international conference for reproductive health commodity security.[1] This paper laid the groundwork for the development of a methodology to measure and monitor contraceptive security.

In a separate effort, more than twenty organizations collaborated in the development of the Strategic Pathway to Reproductive Health Commodity Security (SPARHCS), a tool for assessing and planning for reproductive health commodity security. The framework at the core of SPARHCS was used as a guide in developing the CS Index. It defines the program and program environment components that are required to achieve RH commodity security, whether for contraceptives or for other RH commodities. See figure 4.

Both efforts have drawn much needed attention to the issues around contraceptive security and have generated interest in refining a methodology to measure CS. The CS Index takes additional indicators into account, organizes them around a conceptual framework vetted by a wide range of family planning experts, and allows additional countries to be scored in the index for cross-country comparisons and in-country analysis.

Table 1. CS INDEX INDICATORS

	SUPPLY CHAIN					FINANCE			HEALTH & SOCIAL ENVIRONMENT			ACCESS			UTILIZATION		
	Storage and Distribution max=60	LMIS max=24	Forecasting max=16	Procurement max=16	Contraceptive Policy max= 4	Gov. Health Expenditure max=30	Per Capita GNP, PPP max=US$20,000	Poverty Level max=100	Governance max=30	Women's Education max=100	Adult HIV Prevalence max=50	Access to FP Methods max= 4	Public Sector Targeting max=10	Spread of Access to FP Methods max=1	Method Mix max=1	Unmet Need max=50	CPR max=100
Asia & the Pacific																	
Bangladesh	43	19	10	10	4.0	11	1600	50	12.3	13	0.1	3.3	1.5	0.00	0.38	15.3	43
Cambodia	-	-	-	-	4.0	-	1790	36	14.6	17	2.7	1.4	0.6	0.40	0.25	29.7	19
India	45	18	12	16	3.3	5	2820	29	15.1	39	0.8	3.1	0.9	0.00	0.75	15.8	43
Indonesia	38	15	8	9	4.0	3	2830	27	10.2	48	0.1	3.3	1.3	0.00	0.24	9.2	55
Nepal	40	13	14	16	3.6	-	1360	42	12.3	33	0.5	2.2	0.6	0.10	0.25	27.8	35
Philippines	40	17	12	10	2.0	8	4070	37	14.6	78	0.1	3.0	1.2	0.10	0.23	18.8	35
Vietnam	49	20	13	11	3.4	6	2070	51	12.0	46	0.3	3.0	1.0	0.10	0.58	6.9	65
Eastern Europe & Central Asia																	
Azerbaijan	35	12	8	8	-	3	2890	50	10.7	81	0.1	-	-	-	0.41	12.0	12
Kazakhstan	-	-	-	-	2.0	19	6150	35	12.0	91	0.1	1.7	1.0	0.20	0.67	8.7	53
Kyrgyz Rep.	-	-	-	-	1.0	12	2630	64	11.3	83	0.1	2.3	0.9	0.10	0.74	11.6	49
Turkey	45	18	12	12	3.4	9	5830	-	13.0	48	0.1	2.9	1.1	0.00	0.41	10.1	38
Turkmenistan	-	-	-	-	3.3	-	4240	-	8.6	-	0.1	2.5	0.8	0.20	0.70	19.0	53
Uzbekistan	-	-	-	-	4.0	-	2410	28	9.3	88	0.1	2.1	1.0	0.20	0.86	13.7	63
Latin America & the Carribean																	
Bolivia	24	13	5	9	3.2	20	2240	63	13.7	34	0.1	2.6	0.5	0.00	0.29	26.1	25
Brazil	45	18	16	16	2.0	13	7070	17	15.6	54	0.7	4.0	1.3	0.00	0.51	7.3	70
Colombia	47	14	10	9	1.6	28	6790	64	11.7	69	0.4	3.7	1.5	0.00	0.24	6.2	64
Dominican Rep.	45	16	9	10	2.8	11	6650	29	16.1	61	2.5	2.8	1.4	0.00	0.63	11.9	66
Ecuador	42	13	9	9	2.0	-	2960	35	11.4	50	0.3	2.4	1.0	0.00	0.24	21.2	50
El Salvador	40	9	5	10	4.0	22	5160	48	15.5	39	0.6	2.2	0.8	0.10	0.45	8.9	54
Guatemala	31	15	8	8	4.0	-	4380	56	11.7	25	1.0	2.4	0.3	0.10	0.41	23.1	34
Guyana	34	8	10	12	2.0	-	4690	35	15.0	76	2.7	2.3	-	0.20	-	-	36
Haiti	47	9	9	12	4.0	23	1870	-	8.9	20	6.1	2.0	1.0	0.20	0.40	39.8	22
Honduras	44	14	11	9	2.0	-	2760	53	12.8	37	1.6	2.2	1.2	0.10	0.17	11.2	51
Jamaica	-	-	-	-	4.0	7	3490	19	15.8	67	1.2	2.3	2.1	0.20	0.14	18.9	63
Mexico	53	18	12	14	3.1	16	8240	-	15.3	64	0.3	3.9	-	0.00	-	19.0	59
Nicaragua	49	12	8	8	3.0	6	2450	48	12.8	62	0.2	2.6	1.2	0.00	0.30	14.7	66
Paraguay	39	5	4	7	4.0	16	5180	22	10.0	48	-	3.1	2.3	0.00	0.11	19.9	48
Peru	52	19	12	14	3.4	15	4470	49	14.4	67	0.4	3.3	0.9	0.10	0.11	10.2	50
Middle East & North Africa																	
Egypt	45	12	8	8	3.0	3	3560	17	15.0	73	0.1	2.2	1.2	0.10	0.55	10.7	54
Jordan	56	23	12	16	2.5	14	3880	12	17.1	89	0.1	1.9	1.3	0.00	0.50	14.2	39
Morocco	52	21	14	16	2.3	4	3500	19	16.5	34	0.1	2.6	0.9	0.00	0.71	19.7	49
Yemen	53	15	10	10	4.0	8	730	42	10.4	14	0.1	1.1	0.1	0.10	0.25	38.6	10
Sub-Saharan Africa																	
Benin	36	14	6	7	2.4	-	970	33	13.6	11	3.6	1.3	0.3	0.10	0.11	27.2	7
Burkina Faso	29	10	7	1	3.0	3	1120	45	12.5	6	6.5	1.5	0.3	0.20	0.15	25.8	5
Cameroon	22	3	6	7	0.0	7	1580	40	11.6	22	11.8	0.4	0.2	0.00	0.09	19.7	8
Côte d'Ivoire	9	1	1	0	2.0	6	1400	-	10.5	16	9.7	0.9	0.2	0.70	0.29	27.7	7
Eritrea	39	15	9	7	-	-	1030	53	11.2	17	2.8	-	0.1	-	0.39	27.0	7
Ethiopia	36	12	8	9	2.7	7	800	44	11.2	10	6.4	1.2	0.3	0.40	0.44	35.8	6
Gabon	-	-	-	-	1.3	-	5190	-	12.6	42	-	1.7	0.7	0.20	0.26	28.0	12
Ghana	35	12	5	4	4.0	3	2170	40	14.7	28	3.0	2.5	0.7	0.10	0.09	23.0	13
Guinea	-	-	-	-	2.9	9	1900	40	13.1	7	-	2.0	0.7	0.30	0.36	24.2	4
Kenya	48	16	12	12	3.3	7	970	52	10.2	22	15.0	2.8	0.5	0.10	0.18	23.9	32
Madagascar	34	9	8	9	1.0	15	820	71	12.9	16	0.3	0.7	0.2	0.20	0.38	25.6	10
Malawi	59	17	11	14	3.0	-	560	65	14.1	12	15.0	1.1	0.6	0.30	0.53	29.7	26
Mali	41	14	10	10	3.0	-	770	64	12.9	8	1.7	1.5	0.2	0.30	0.23	28.5	6
Mauritania	-	-	-	-	4.0	-	1940	46	10.8	11	-	1.2	0.0	0.10	0.35	31.6	5
Mozambique	38	12	9	10	3.0	-	1050	69	14.4	5	13.0	1.9	0.1	0.20	0.31	22.5	5
Namibia	-	-	-	-	4.0	12	7410	-	18.4	67	22.5	3.2	0.4	0.10	0.24	21.9	26
Nigeria	31	5	5	5	2.0	3	790	34	9.6	30	5.8	1.7	0.2	0.20	0.05	17.4	9
Rwanda	27	10	4	9	4.0	-	1240	51	10.2	9	8.9	2.1	0.3	0.20	0.60	35.6	4
Senegal	47	16	12	14	2.0	13	1480	33	13.7	12	0.5	2.2	0.1	0.20	0.21	34.8	8
South Africa	-	-	-	-	3.0	13	10910	-	16.9	92	20.1	2.7	0.8	0.10	0.23	15.0	55
Tanzania	44	15	15	14	4.0	-	520	36	13.4	5	7.8	0.9	0.4	0.30	0.21	21.8	17
Togo	42	13	7	7	4.0	-	1620	32	9.7	14	6.0	2.0	0.5	0.10	0.13	32.3	7
Uganda	22	3	8	7	2.5	7	1460	44	10.8	9	5.0	1.5	0.3	0.30	0.18	34.6	18
Zambia	36	17	15	6	2.0	3	750	73	12.9	21	21.5	1.7	0.3	0.10	0.36	26.5	23
Zimbabwe	34	16	8	9	3.2	3	2220	35	8.1	45	33.7	2.2	0.9	0.20	0.65	12.9	50

Table 2. WEIGHTED COMPONENT SCORES

	Supply Chain (20 pts)	Finance (20 pts)	Health & Social Environment (20 pts)	Access (20 pts)	Utilization (20 pts)	Total (max=100 pts)
Asia & the Pacific						
Bangladesh	15.0	6.3	10.3	13.2	11.6	56.4
Cambodia	15.2	7.3	10.7	6.7	9.0	48.9
India	16.3	6.9	12.5	12.4	9.1	57.2
Indonesia	13.3	6.5	12.1	13.0	14.2	59.1
Nepal	15.9	7.3	11.5	10.1	10.3	55.1
Philippines	13.0	7.3	15.1	11.8	11.6	58.9
Vietnam	16.0	5.2	12.4	11.7	12.9	58.1
Average	**15.0**	**6.7**	**12.1**	**11.3**	**11.2**	**56.2**
Eastern Europe & Central Asia						
Azerbaijan	9.3	5.0	14.4	7.5	9.8	46.0
Kazakhstan	13.3	10.6	15.4	8.8	11.2	59.4
Kyrgyz Rep.	13.7	5.9	14.7	10.4	10.1	54.9
Turkey	15.4	8.1	12.7	12.2	11.8	60.2
Turkmenistan	11.2	8.4	12.4	10.0	9.7	51.6
Uzbekistan	14.5	5.7	14.6	9.5	10.0	54.3
Average	**12.9**	**7.3**	**14.0**	**9.8**	**10.4**	**54.4**
Latin America & the Carribean						
Bolivia	10.5	7.8	12.0	11.3	9.6	51.1
Brazil	16.0	10.7	13.6	14.2	13.6	68.1
Colombia	11.8	10.9	13.8	13.8	15.2	65.5
Dominican Rep.	13.2	9.4	14.0	12.3	11.9	60.8
Ecuador	11.5	7.4	12.5	11.3	12.2	55.0
El Salvador	11.9	10.1	12.6	10.2	12.7	57.6
Guatemala	12.6	8.1	10.8	10.2	9.8	51.4
Guyana	11.1	8.8	14.7	9.7	12.0	56.3
Haiti	13.9	9.0	9.2	9.3	6.8	48.3
Honduras	12.3	6.8	11.8	10.5	14.1	55.4
Jamaica	13.4	8.1	14.5	10.6	14.1	60.6
Mexico	16.1	10.7	14.3	14.1	11.6	66.8
Nicaragua	12.3	5.7	13.6	11.8	13.8	57.1
Paraguay	10.2	10.4	11.3	13.4	13.1	58.4
Peru	16.5	8.2	14.3	12.1	14.6	65.6
Average	**12.9**	**8.8**	**12.9**	**11.7**	**12.3**	**58.5**
Middle East & North Africa						
Egypt	12.0	7.4	14.9	10.5	11.8	56.5
Jordan	17.1	10.2	16.4	10.7	10.7	65.0
Morocco	16.8	7.5	12.6	11.6	9.2	57.7
Yemen	15.0	5.9	9.9	7.9	7.2	45.9
Average	**15.2**	**7.7**	**13.4**	**10.2**	**9.7**	**56.3**
Sub-Saharan Africa						
Benin	10.4	5.7	9.9	8.4	9.4	43.8
Burkina Faso	8.6	4.7	9.0	8.0	9.2	39.5
Cameroon	5.2	6.0	9.1	7.5	10.6	38.5
Côte d'Ivoire	3.0	4.5	8.8	3.6	8.2	28.1
Eritrea	12.1	5.0	9.9	8.1	7.6	42.8
Ethiopia	11.4	5.5	9.0	6.2	6.0	38.0
Gabon	7.4	8.8	11.3	8.6	8.7	44.8
Ghana	10.6	5.4	11.4	10.6	10.5	48.6
Guinea	11.6	6.7	9.5	8.5	8.0	44.2
Kenya	15.2	5.1	8.4	11.0	11.1	50.7
Madagascar	9.0	5.5	10.6	6.6	8.1	39.7
Malawi	16.0	6.2	8.6	6.9	7.6	45.3
Mali	13.1	5.6	9.8	7.3	8.4	44.2
Mauritania	10.2	7.7	9.0	8.0	7.1	42.1
Mozambique	12.3	4.5	8.5	8.6	8.6	42.4
Namibia	18.2	10.3	12.2	11.6	10.5	62.8
Nigeria	7.4	5.3	10.0	8.3	11.3	42.3
Rwanda	10.7	6.5	8.3	9.0	4.9	39.4
Senegal	14.3	7.7	10.4	9.1	7.8	49.4
South Africa	13.9	11.4	13.9	11.0	13.5	63.7
Tanzania	16.7	5.2	8.9	6.4	10.2	47.5
Togo	12.5	6.1	9.0	9.7	8.6	45.8
Uganda	8.2	5.8	9.0	7.4	8.7	39.1
Zambia	12.5	2.7	8.1	9.0	8.9	41.2
Zimbabwe	12.4	5.7	7.0	9.6	10.6	45.3
Average	**11.3**	**6.1**	**9.6**	**8.4**	**9.0**	**44.4**
Overall Average	**12.6**	**7.1**	**11.5**	**9.9**	**10.3**	**51.4**

Figure 1. Total Weighted Scores

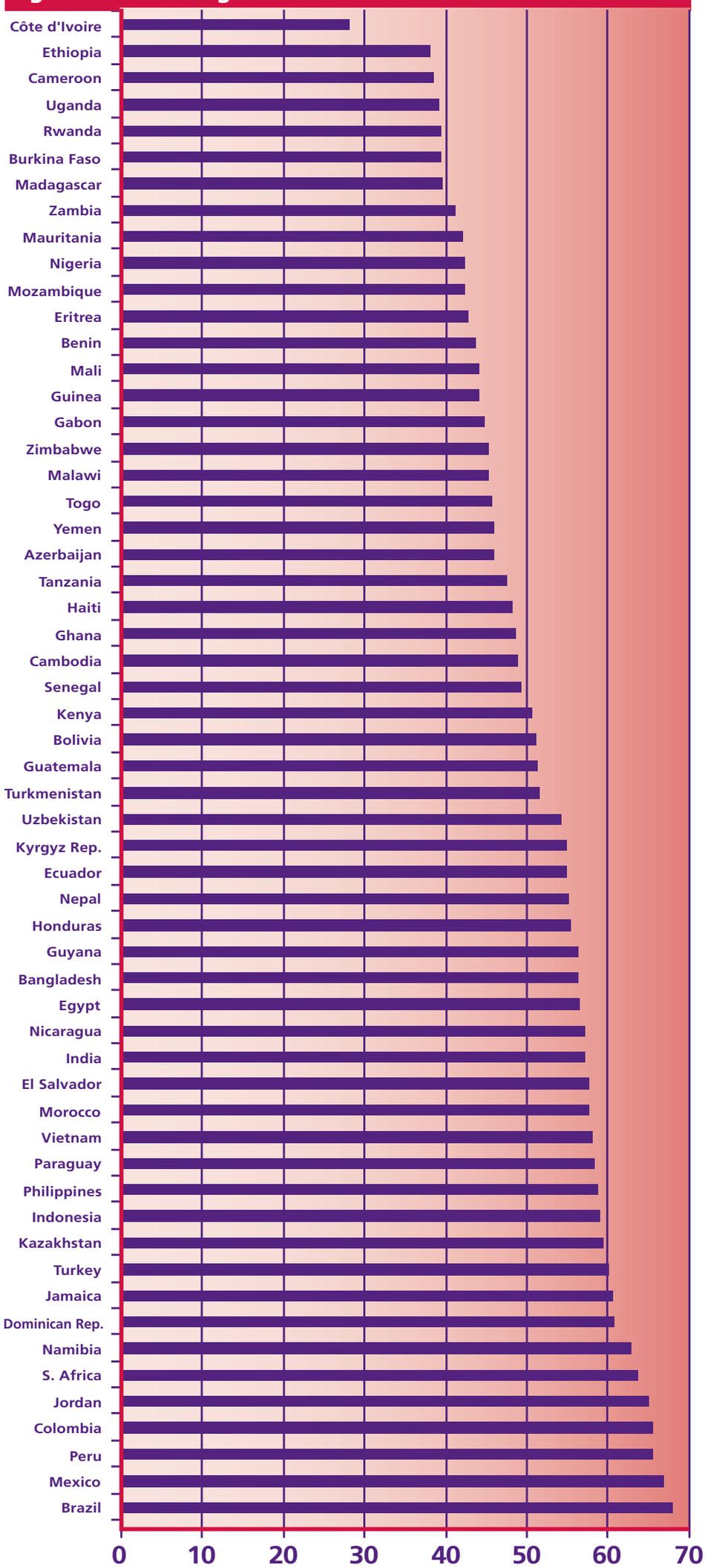


Figure 2.

Top 5 Countries by CS Index Component Score

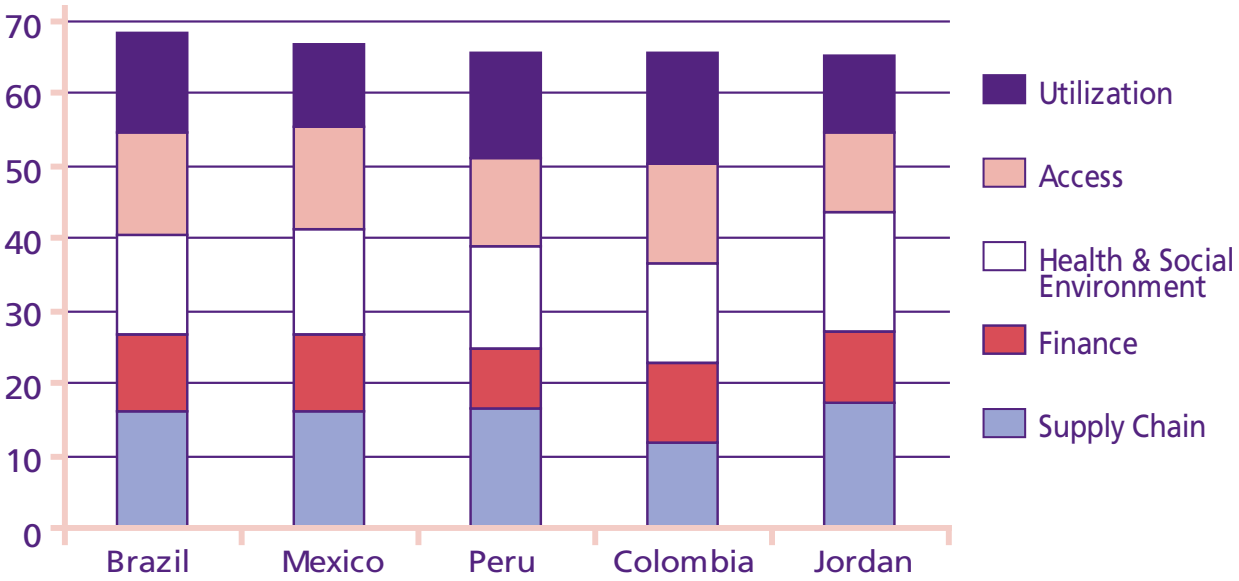
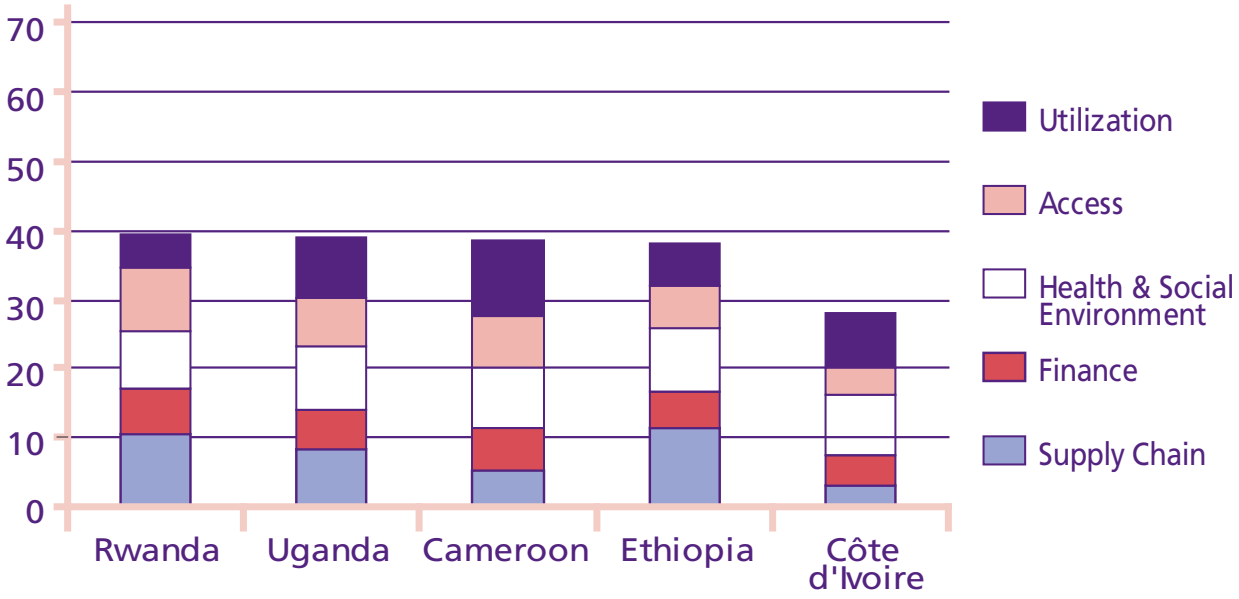


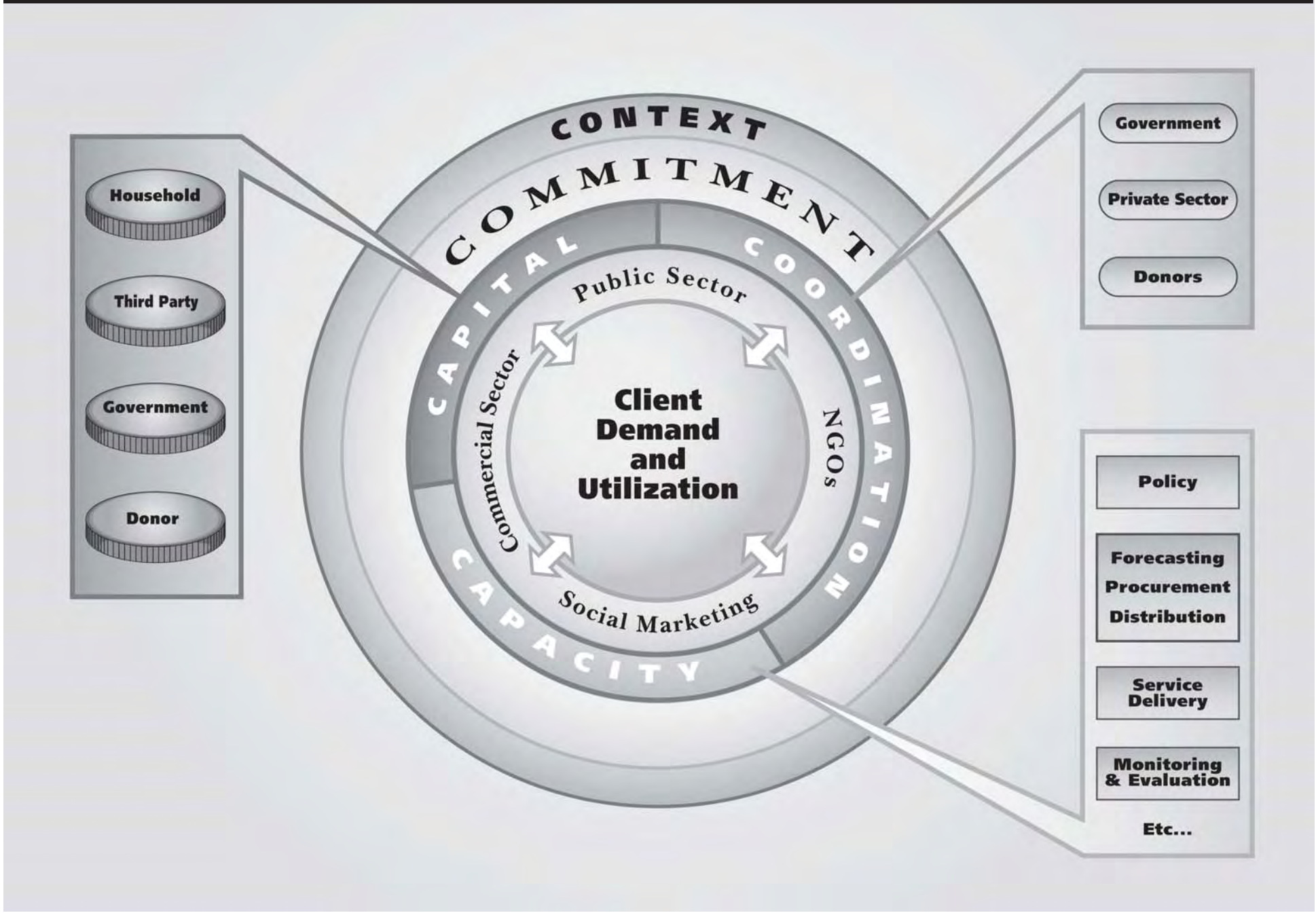
Figure 3.

Bottom 5 Countries by CS Index Component Score



Refer to table 2 for component and total scores

Figure 4. SPARHCS Framework for RH Commodity Security



Methodology

The work noted above was a starting point for a working group convened to conceptualize the CS Index. The group consisted of CS experts from USAID, John Snow, Inc./DELIVER, Futures Group International/POLICY, and Commercial Market Strategies (CMS). The process of constructing the CS Index was designed to minimize data collection costs (using only secondary data), and to maximize data reliability, validity, and replicability. Seventeen indicators were chosen to meet these criteria. They address a mix of inputs and outputs, and programmatic and macro-level issues. Together, they paint a picture of CS and promote a cross-sectoral approach to addressing CS. Although some indicators are highly correlated, each represents an important aspect of CS. During development, the working group experimented with different indicators and weighting schemes and recognized that they all had limitations. In the end, 17 indicators are arrayed across the five CS components described below; the components are aggregated to create the index. For detailed information regarding how missing data were filled in to calculate the index, how indicators were weighted, and other technical issues, please refer to the *Contraceptive Security Index Technical Manual*[2].

Definitions

***Component I: Supply Chain*—**Each of the five indicators of logistics management represents a key function in the supply chain for contraceptive supplies. An effective supply chain ensures the continuous supply of sufficient quantities of high-quality contraceptives needed to achieve security. More effective management of supplies is associated with better prospects for contraceptive security.

The first four indicators were obtained from John Snow, Inc.'s (JSI) Family Planning Logistics Management (FPLM) project's Composite Indicators for Contraceptive Logistics Management database (JSI/FPLM 1999)[3].

- **Storage and distribution**—This indicator assesses storage capacity and conditions, standards for maintaining product quality, inventory control, stockouts, tracking system losses, and distribution and transportation systems.
- **LMIS (Logistics Management Information Systems)**—This indicator assesses reporting systems, validation of data, and information management and use in decision-making.
- **Forecasting**—This indicator assesses how forecasts of consumption are prepared, updated, validated, and incorporated into cost analysis and budgetary planning.
- **Procurement**—This indicator assesses how forecasts are used to determine short-term procurement plans and the degree to which correct amounts of contraceptives are obtained in an appropriate time frame.

The fifth supply-related indicator is drawn from the results of Futures Group's (Futures) Family Planning Effort (FPE) survey (Ross and Stover May 2000)[4].

- **Contraceptive policy**—Under some circumstances, locally manufactured contraceptives can provide an affordable and sustainable option for clients. In many countries, it will be more effective to have policies and regulations that facilitate open markets and the importation of competitively priced, quality products. This indicator measures the extent to which import laws and legal regulations facilitate the importation of contraceptive supplies that are not manufactured locally, or the extent to which contraceptives are manufactured within the country.

Component II: Finance—Sustainable and adequate financing for the procurement of contraceptives, service delivery, and other program components from international donors and lenders, national or local governments, households, and third-parties is critical for ensuring contraceptive security. Without a commitment of financing, program quality and access will suffer and CS will not be sustainable. Data are not widely or readily available to obtain an adequate country-level picture of contraceptive financing by donors/lenders, third parties (e.g., insurers, employers), or the private sector. Three indicators are used to capture the prospects for government and household financing of family planning services and contraceptives in a country. The World Bank's World Development Indicators (WDI) were the source for these indicators[5].

- **Government health expenditures as a percentage of total government spending**—A national government's commitment to public health, specifically to reproductive health and family planning, is critical for CS. The poorest segments of a population depend on free or subsidized health services often provided by the government for essential preventive and curative health services. This indicator is a measure of political commitment to public health spending as a proxy for government commitment to family planning programs. Greater commitment to health spending means more potential resources for family planning programs as part of overall government health programs. This indicator is derived from two indicators in the WDI: public expenditures on health as a percentage of gross domestic product (GDP) divided by total government expenditures as a percentage of GDP:

  (Gov Exp on Health/GDP) ÷ (Total Gov Exp/GDP) = (Gov Exp on Health/Total Gov Exp)

- **Per capita GNP**—A greater ability to pay for contraceptives at the household level is associated with better prospects for contraceptive security. This indicator represents the average consumer's potential ability to pay for family planning services and contraceptives expressed in purchasing power parity (PPP), which corrects for differences in market prices of goods in each country to allow for a better comparison across countries.

- **Poverty level**—While per capita income measures average consumer ability to pay, there are always inequalities in the distribution of income. High poverty rates can threaten CS if provisions are not made to ensure access to services and commodities for the poor. Higher poverty rates can indicate a greater reliance of the population on the public sector, adding stress to already overburdened systems. Because higher poverty rates are associated with lower household incomes and poorer access to health care, higher poverty rates are also associated with poorer prospects for contraceptive security. This indicator is expressed as the percentage of the national population living below the nationally defined poverty line.

Component III: Health and social environment—The health and social environment component, composed of three indicators, is included because it is recognized that other factors in the broader health and social environment can affect prospects for contraceptive security at both the country and individual levels, as described below.

- **Governance**—A healthier political environment improves prospects for contraceptive security. An accountable, stable, effective, and transparent government is more likely to be committed to the health and well-being of its population and to use its resources appropriately for the public good. International donors are also more likely to provide financial and material support to such a government. The private sector is more likely to invest in creating new or expanding existing markets for contraceptives. This indicator is a composite measure of governance composed of six dimensions of governance: voice

and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. It is derived from the World Bank's "Governance Matters" index (Kaufman, Kraay, and Zoido-Lobaton January 2002).

- **Women's education**—Women's educational attainment is one of the best predictors of contraceptive use. Women who are educated beyond primary school are more likely to use a contraceptive method. In addition, in countries where women's status is good, educated women are more likely to advocate for the protection of family planning programs. This indicator is expressed as the percentage of females enrolled in secondary school defined as the ratio of the number of students enrolled in secondary school to the population in the applicable age group (gross enrollment ratio). Secondary school enrollment rates were obtained from the Population Reference Bureau's *2002 Women of the World* publication, with the exception of Jordan (Roudi-Fahimi, Farzaneh, and Moghadam October 2003)[6].

- **Adult HIV prevalence**—It is increasingly recognized that a higher burden of HIV in a population can erode prospects for contraceptive security. HIV/AIDS contributes to higher levels of poverty and the pandemic has put new, competing demands on health financing. This indicator is expressed as the percentage of adults aged 15-49[7] who were infected with the HIV virus at the end of 2001. Adult HIV prevalence rates were obtained from the UNAIDS *Report on the Global HIV/AIDS Epidemic 2002*.

***Component IV: Access*—**The three access indicators measure aspects of availability and access to modern methods of contraception—the degree to which clients can choose and obtain their method of choice. Family planning and reproductive health programs should strive to offer a variety of methods to meet the needs of all clients.

- **Access to modern family planning methods**—Ready and easy access by clients to a wide range of contraceptive methods is associated with better prospects for contraceptive security. When family planning services are widely available, it is very difficult to reverse progress in access and availability of these services and supplies. This indicator measures the percentage of a country's population that have ready and easy access to male and female sterilization, pills, injectables, condoms, spermicides, and IUDs. It is also taken from Futures' Family Planning Effort survey (Ross and Stover May 2000).[8]

- **Public sector targeting**—Public sector family planning programs that offer heavily subsidized (and sometimes free) services and commodities are designed to meet the needs of the poor and near-poor segments of a population. This public sector funding is limited in virtually every country. The degree to which the poorest people benefit from these subsidized services, while wealthier clients who can afford to pay for services and commodities have and use other options, reflects upon the long-term CS in a country. This indicator measures the proportion of a country's contraceptives distributed through public sector channels that go to poor and near poor family planning clients. "Poor and near poor" is defined as clients who are in the lowest 40 percent of the population as defined by a standard of living index (SLI). Data from Demographic and Health Surveys (DHS) and Reproductive Health Surveys (RHS) are used both to compute the SLI and the distribution of public sector FP users across SLI categories.[9]

- **Spread of access to modern family planning methods**—Spread of access to modern family planning methods-Access to a wide range of family planning methods represents a choice for clients. Access to a range of methods can also mean that if one method becomes unavailable, other methods are available to clients in the interim. This concept of choice

is key to contraceptive security, regardless of what methods clients choose (reflected in Component V). This indicator is related to the access indicator above and it uses the same data. It measures whether clients have "ready and easy access" to a broad range of at least three contraceptive methods by taking the highest-scored method, minus the third-highest scored method, divided by the sum of access scores for all methods. This data is also taken from Futures' Family Planning Effort survey (Ross and Stover May 2000).

***Component V: Utilization*—**This component is composed of three indicators that measure clients' behaviors in terms of contraceptive use within the country program context.

- **Method mix**—While the access indicators (see Component IV) measure the extent to which consumers have ready and easy access to methods, this indicator measures the degree to which consumers' use a range of methods. The broader the range of methods used, the better the prospects for contraceptive security, because it demonstrates that women have a choice and are choosing from a range of methods. This indicator was measured as the difference in prevalence rates between the most prevalent modern method in a country and the third-most prevalent method, divided by the total modern method prevalence. A higher value indicates a higher concentration of use on a limited number of methods, which is interpreted as being not conducive to contraceptive security. This indicator was derived from the most recently available DHS or RHS data set for each country.

- **Unmet need**—Unmet need is indicative of barriers to accessing and using family planning. The higher the percentage of women with unmet need for contraception, the poorer the prospects for contraceptive security because unmet need represents clients who express a need to use family planning but cannot or do not. This indicator measures the percentage of women who express a desire to space or limit their next pregnancy, or who would have preferred to avoid or delay their current pregnancy, but are not using a contraceptive method. This indicator was derived from the most recently available DHS or RHS data set for each country.

- **Contraceptive prevalence rate (CPR)**—This indicator is the most obvious outcome of contraceptive security-women actually using contraception. Higher contraceptive use is indicative of better access and availability of contraceptives for the population. Increased contraceptive use will also encourage the improved availability in both the public and private sectors through political pressures and market forces. This indicator measures the percentage of married women of reproductive age currently using a modern method of family planning. This data is from the Population Reference Bureau's *2003 World Population Data Sheet*.

[1] Held in Istanbul in May 2001. "Meeting the Reproductive Health Challenge: Securing Contraceptives and Condoms for HIV/AIDS Prevention" was organized by the Interim Working Group on Reproductive Health Supplies (IWG). This was a collaborative effort by John Snow, Inc., Population Action International, the Program for Appropriate Technology in Health, and the Wallace Global Fund to address the looming crisis represented by the shortfall in contraceptives around the world.

[2] The CS Index Technical Manual is available on-line at www.deliver.jsi.com or www.tfgi.com.

[3] Staff from FPLM and Ministry of Health counterparts scored these indicators for public sector logistics systems through a participatory focus group discussion held in each country.

[4] The FPE is conducted periodically around the world by administering a questionnaire to expert respondents from each country.

[5] World Development Indicators website: http://www.worldbank.org/data/onlinedbs/onlinedbases.htm

[6] Female secondary school enrollment rate for Jordan.

[7] HIV prevalence among adults of reproductive age (15-49) is used as the indicator for the CS Index, because this population is most likely to use contraceptives and avail themselves of services from FP programs, making it the most relevant population for contraceptive security. It is also the most widely available data.

[8] This indicator uses the mean access score for these contraceptive methods.

[9] DHS are generally conducted with oversight from a USAID centrally funded project. In some countries, RHS, similar to a DHS but overseen by the Centers for Disease Control and Prevention, have been used where a recent DHS data set was not available.

References

Finkle, Clea T., Jane Hutchings, and Janet Vail. 2001.*Contraceptive Security: Toward a Framework for a Global Assessment*. Seattle: Program for Appropriate Technology in Health (PATH).

John Snow, Inc./Family Planning Logistics Management and the EVALUATION Project. April 1999. *Composite Indicators for Contraceptive Logistics Management*. Arlington, Va.: John Snow, Inc./ Family Planning Logistics Management, for USAID.

Kaufman, Daniel, Aart Kraay, and Pablo Zoido-Lobaton. January 2002. *Governance Matters, II: Updated Indicators for 2001-02*. (http:/www.worldbank.org/wbi/governance/govdata2001).

Population Reference Bureau. 2002. *2002 Women of the World*. Washington, D.C.: Population Reference Bureau. www.prb.org.

Population Reference Bureau. 2003. *2003 World Population Data Sheet*. Washington, DC: Population Reference Bureau. www.prb.org.

Ross, John, and John Stover. May 2000. *Effort Indices for National Family Planning Programs, 1999 Cycle*. Washington, D.C.: Futures Group International for MEASURE/Evaluation.

Roudi-Fahimi, Farzaneh, and Valentine M. Moghadam. October 2003. "Empowering Women, Developing Society: Female Education in the Middle East and North Africa." Population Reference Bureau Policy Brief. Washington, D.C.: Population Reference Bureau.

UNAIDS. July 2002. *Report on the Global HIV/AIDS Epidemic 2002*. Geneva: UNAIDS.

Further Resources

Ashford, L. 2002. *Securing Future Supplies for Family Planning and HIV/AIDS Prevention*. Washington, D.C.: MEASURE Communication/Population Reference Bureau. (http://www.prb.org/pdf/SecFutureSupplies_Eng.pdf).

Family Planning Logistics Management (FPLM)/John Snow, Inc. 2000. *Programs that Deliver: Logistics' Contributions to Better Health in Developing Countries*. Arlington, VA.: FPLM/John Snow, Inc. (http://deliver.jsi.com/2002/Pubs/Pubs_Policy/Programs_That_Deliver/index.cfm).

Finkle, C. 2003. *Ensuring Contraceptive Supply Security.* Outlook Vol 2, No 3. Seattle, WA.: PATH. (http://www.path.org/files/eol20_3.pdf).

Hare, L., C. Hart, S. Scribner, C. Shepherd, T. Pandit (ed.), and A. Bornbusch (ed.). 2004. *SPARHCS: Strategic Pathway to Reproductive Health Commodity Security. A Tool for Assessment, Planning, and Implementation*. Baltimore, Md.: Information and Knowledge for Optimal Health (INFO) Project/ Center for Communications Programs, Johns Hopkins Bloomberg School of Public Health.

Sine, J., and S. Sharma. 2002. *Policy Aspects of Achieving Contraceptive Security*. Policy Issues in Planning and Finance No 1. Washington, D.C.: Policy Project/Futures Group International. (http://www.policyproject.com/pubs/policyissues/PI_Eng.pdf).

United Nations Population Fund (UNFPA). 2002. *Reproductive Health Essentials: Securing the Supply*. New York, N.Y.: UNFPA. (http://www.unfpa.org/upload/lib_pub_file/ 39_filename_securingsupply_eng.pdf).

U.S. Agency for International Development (USAID). 2004. *Contraceptive Security: Ready Lessons*. Baltimore, Md.: INFO Project/Center for Communication Programs, Johns Hopkins Bloomberg School of Public Health, for USAID. (http://www.dec.org, search under "contraceptive security").

Additional contraceptive security resources are available at the following web sites:

DELIVER Project: www.deliver.jsi.com

POLICY Project: www.policyproject.com

Commercial Market Strategies Project: www.cmsproject.com

Partners for Health Reform*plus* Project: www.phrplus.org

Population Action International: www.populationaction.org

The Supply Initiative: www.rhsupplies.org

USAID: www.usaid.gov

UNFPA: www.unfpa.org

The USAID Contraceptive Security Team works to advance and support planning and implementation for contraceptive security in countries. The team provides technical assistance to USAID Missions, their country partners, and other donors and international partners. The team can be contacted c/o Mark Rilling or Alan Bornbusch, Commodities Security and Logistics Division, Office of Population and Reproductive Health, Bureau for Global Health, mrilling@usaid.gov or abornbusch@usaid.gov.

Acknowledgements

Development of the CS Index was led by Dana Aronovich of John Snow, Inc. (JSI)/DELIVER project and Jeffrey Sine of the POLICY Project at Futures Group (Futures).

We thank Alan Bornbusch (USAID), Carolyn Hart (JSI/DELIVER), and Carol Shepherd (Futures/POLICY) for their leadership and guidance, as well as Mark Rilling, Steve Hawkins, and Tanvi Pandit of USAID; Ali Karim, David O'Brien, Gus Osorio, David Sarley, Pat Shawkey, and Tim Williams of JSI/DELIVER; Karen Foreit, John Ross, and Bill Winfrey of Futures; and Asma Balal and Susan Scribner of the Commercial Market Strategies Project for their input during the development of the index and wallchart. We also thank reviewers of the first draft of the CS Index who provided many useful suggestions and constructive input, including Margaret Neuse, Tim Clary, Rose McCullough, Elizabeth Schoenecker, Susan Wright, USAID/Madagascar, Jagdish Upadhyay, Tim Johnson, and Jane Hutchings.

Funding for the development and publication of the CS Index was provided by the U.S. Agency for International Development (USAID) under the DELIVER project (HRN-C-00-00-00010-00), POLICY II Project (HRN-C-00-00-00006-00), and Commercial Market Strategies Project (HRN-C-00-98-00039-00).

Cover photograph, Third from left: © CCP, Courtesy of Photoshare. Remaining photos courtesy of John Snow, Inc./DELIVER.

Recommended Citation

John Snow, Inc./DELIVER and Futures Group/POLICY Project. 2003. *Contraceptive Security Index 2003: A Tool for Priority Setting and Planning*. Arlington, Va.: John Snow, Inc./DELIVER.

APPENDIX 4

CASE STUDY

QUESTION 1.

The Uganda example cited by the offeror (p. 13) demonstrates their knowledge of the complexities of in-country systems. The offeror, though, does not follow-up with a discussion of concrete solutions to the kinds of problems identified in this example.

Using an illustrative country case study, not to exceed four pages, please describe how the proposed technical approaches for supply chain strengthening, commodity security, and procurement would be implemented across different technical areas such as malaria, HIV/AIDS, and family planning. Describe how the offeror would implement specific solutions to the following tasks, and propose innovative solutions and new technologies and approaches, where appropriate.

- *Procurement, consignment and distribution of malaria commodities under the President's Malaria Initiative, including rapid diagnostic tests, artemether lumefantrine, and long-lasting insecticide treated nets.*
- *Development of an integrated commodity security plan for key malaria and HIV/AIDS commodities.*
- *Technical assistance to the Ministry of Health in strengthening integrated supply chain and logistics systems to manage large volumes of family planning, malaria, and HIV/AIDS commodities, including strengthening warehousing, storage, inventory management, and distribution systems across this range of commodities. Include how to strengthen distribution to the most remote areas of the country.*

We have done our best to provide a case study in just four pages covering health supply chain strengthening, commodity security, and procurement in Uganda. Clearly, though, each of those topics is worthy of several dozen pages. What follows must be considered only the briefest overview, albeit one in which we have tried to lay out specific, viable strategies and plans, technologies, and approaches to solve complex problems.

JSI is strengthening the supply chain of HIV and AIDS drugs in over 30 countries, including Uganda, pictured here.

In 2001 public health logistics in Uganda was characterized by a multiplicity of vertical systems – at least 14 – that separately managed such product categories as contraceptives, essential medicines, vaccines, and anti-TB drugs. Problems, including insufficient financing, substandard procurement, storage, and distribution practices, and absence of information on consumption and balances conspired to make stockouts the norm at all levels. Since then assistance programs funded by USAID and other donors have directed considerable resources to logistics system improvement and these inputs have produced positive results. The most important is the integration of contraceptives, condoms, essential drugs, STI and OI drugs, laboratory

supplies, test kits, and malaria drugs into one national distribution system. PipeLine software is used to monitor 95 products managed through this supply chain, and the LMIS for HIV tests and ARV drugs is computerized at the central level using Supply Chain Manager.

The National Medical Stores (NMS), a semi-autonomous body, receives and stores health commodities, and packs orders for 1,970 health facilities on a bi-monthly basis based on a pull system credit line. Orders are delivered to the district where they are picked up by facilities. ARVs are stored at NMS, but a separate system has been established currently reaching 35,000 patients at 220 accredited sites. The 960 laboratories are supplied by NMS through a newly created credit line. The Government of Uganda (GOU) has also established relationships with faith-based organizations, NGO, and non-MOH logistics supply chains to facilitate distribution of the increased volume of commodities available through the PEPFAR- and President's Malaria Initiative (PMI)-funded programs. Some MOH-procured products are distributed through the Joint Medical Stores (JMS) supply chain, which serves faith-based health facilities on a cash and carry basis, reaching 25-35% of the Uganda population. Under this system, faith-based facilities pick up their commodities from the JMS warehouse.

Despite the gains made over the past five years, the increasing demands on the system mean that Uganda still requires significant technical assistance. For example, the GOU expects to supply ARVs to over 300 sites serving 56,000 patients by the year 2008. HIV Voluntary Counseling and Testing is being replaced with Routine Counseling and Testing, considerably increasing the requirement for HIV tests. As an example of how services will expand, HIV testing will take place at TB sites and TB testing and treatment will take place at ART sites. Malaria programs are bringing in large quantities of products, and services are increasingly being integrated with HIV/AIDS services. From 2001 to 2006, volume inputs from donors and other third party suppliers increased 8.5 times, and are expected to increase still further. Magnitudes of increase vary by commodity, with TB drugs approximately doubling, and essential drugs and vaccines increasing 8-fold. These increases in volume are accompanied by dramatic increases in cold chain requirements and the variety of commodities to be managed, challenges that must be planned for explicitly. For all these reasons, Uganda needs robust but agile health supply chains to continue supplying existing programs and to accommodate growth. LCS's key role, in collaboration with SCMS and their supply chain responsibilities for HIV/AIDS commodities, will be to work with the MOH to harmonize the logistics management for these health products, ensuring standardization of logistics functions and strategic collaboration among key players.

Procurement, Consignment, and Distribution of Malaria Commodities. The PMI Country Action Plan for Uganda proposes the procurement of artemether-lumefantrine (AL), long lasting insecticidal nets (LLIN) and rapid diagnostic tests (RDT), in addition to supporting other activities. This initiative will require close coordination with the GFATM malaria program to reach the most people in an efficient manner. LLINs are currently procured and distributed through a social marketing agency, and the numbers are still small, but will grow over the next five years. AL and other artemesinin-based combined therapy (ACT) will be distributed through the essential drugs system.

Quantification of these products will take place in country. The skills that DELIVER has developed over the years for quantifying ARV, anti-malarial, OI, STI and TB drug, and HIV test requirements can be easily transferred and adapted for the quantification of AL, LLINs, and RDTs. Since RDT sensitivity can be compromised by many factors, WHO recommends quality control measures throughout the system, including testing upon receipt at the national level (the National Drug Authority [NDA] already carries out routine post-shipment testing on certain commodities, including RDT), and surveillance, sampling, and testing from the district and the SDP levels. This will be taken into account during the quantification exercise. Like ARVs, the rapidly growing demand for AL could place a huge burden on manufacturers. One LCS partner has entered into an agreement with Novartis, allowing direct procurement of Coartem® (AL), bypassing the WHO procurement process, and allowing better planning for greater and consistent product availability. The PMI procurement plan will be established based on targets and factoring in what

others (government and/or donors) have in the pipeline, and will abide by all USAID/USG rules and regulations as well as registration, customs clearance waivers, and post-shipment testing by NDA.

JSI currently plays a key role in supporting the MOH to coordinate supply chain and commodity inputs and interventions by partners working in HIV/AIDS and malaria. JSI has chaired the National ARV Procurement and Logistics Subcommittee since its creation in 2002 and serves as the Secretariat of a new MOH committee headed by WHO, to coordinate malaria commodity shipments coming from the different donors. LCS could take on this crucial role in the future. LCS could facilitate clearance and transport of the product to the NMS by contracting with a private firm, guaranteeing quick clearance as well as secure, rapid delivery. Calculation of space requirement at the NMS for AL (which is bulkier than most drugs due to blister packaging for product integrity) and RDT needs to take place. AL will flow through the essential drugs system while RDTs will be delivered directly to the 960 MOH and NGO labs covered by the MOH system. Most RDTs are sensitive to heat and humidity, and require cool chain handling.

JSI recently worked with the MOH and WHO on the quantification and procurement of GFATM-funded LLINs ($14 million) as well as the design of the distribution network, including storage, transport, distribution options, and LMIS. Because of the specific nature (bulky and treated with insecticide) of nets, they and other insecticidal products for re-treatment of nets or for indoor residual spraying were/are not integrated into the health commodity system. Instead, they are managed vertically. The procurement and consignment processes for LLINs will be similar to the ones described for AL and RDTs, but once the nets have been cleared, they will be transported directly to the district level, using third party transport, where they will be stored. The target populations for nets are children under 5, pregnant women, PLWA and IDPs in camps in the north. One of the most successful ways to reach these target populations is to leverage immunization campaigns. UNEPI has agreed with this approach. Again, using third party transport, nets will be shipped to immunization sites. Those target populations who cannot benefit from this distribution will be identified at the sub-county level and nets will be distributed by social marketing groups. Some LLINs will be stored at ANC clinics for distribution to pregnant women who cannot attend immunization campaigns. Local and international organizations working with PLWA and in the IDP camps will distribute to these target populations.

The JSI-developed PipeLine software currently used to track 95 commodities will also be used to monitor procurement plans for AL, RDTs, and LLINs. NMS and JMS distribution records will be used for product tracking and donor reporting for AL and RDT, but a different tracking system will be established for nets and sprays. Because of increasing quantities and distributions, an LLIN distribution system will have to be systematized, including the development of an LMIS. For AL and RDTs, the current LMIS in use at NMS needs to be modified to include these products.

Integrated Commodity Security Planning for Malaria and HIV/AIDS Products. Demand for both anti-malarial and HIV/AIDS treatment and prevention commodities will exceed supply in the short and medium term. The MOH/GFATM provides only 25% of the estimated ACT needs, the demand for free LLINs will grow for the foreseeable future, and ARV funding is sufficient for covering only a portion of present and future demand. Although 120,000 patients have met the eligibility criteria for starting ART, to date only 35,000 receive ARVs. The target for 2008 is 56,000 patients on ART, while 80,000 reach eligibility each year.

The imminent influx of large amounts of product for malaria and HIV/AIDS programs suggests that the initial commodity security priorities, at least for the first two years, should be harmonization and coordination of donor financing, procurement, logistics reporting, and distribution. This is especially important in light of the special characteristics and distribution requirements of some products e.g., the value of pharmaceuticals, the short shelf lives for drugs and test kits, the bulk of nets, the hazards of pesticides. JSI has worked successfully with counterparts to develop commodity security (CS) plans for HIV/AIDS products and for contraceptives and MCH commodities in over 25 countries. Long term financial sustainability is of major interest and thus receives the most attention as planners use the total market

approach to apportion future costs among donors, government budgets, social marketing programs, and commercial sector options; other factors also come into play, e.g., coordination and procurement capacity. While long term financial sustainability is important for Uganda it is not necessarily an immediate priority.

LCS can play an important role in matching funding by product category with scale up, storage, and distribution plans year by year. LCS can also take the lead in projecting medium and long term needs to inform immediate and strategic procurement plans, long term financing, and logistics system development. For commodity security we emphasize strengthening the capacity of MOH staff to manage international competitive bids and to work efficiently with GFATM and World Bank resources. As these most urgent CS issues come under control, LCS and GOU can begin to work with all stakeholders to bring emphasis to a total market approach, incorporating the future roles of household spending and the commercial sector.

Strengthening MOH Integrated Supply Chains. Use of the term supply chains (plural) is deliberate. It is true that some functions, e.g. storage, can be largely integrated for most different product categories, but in specific cases it may be best to coordinate separately managed functions. Two such cases were discussed above: RDTs and some HIV tests, requiring cold chains, and pesticides/related products, which are unusually bulky and environmentally sensitive.

The MOH in Uganda currently manages large volumes of commodities. As with CS planning, it is best to think in terms of at least two phases for SCM strengthening. During the first, more urgent one (first two years of LCS), priority is given to those problems occasioned by surges in volume of contraceptive, malaria, and HIV/AIDS products. LCS could emphasize adapting technologies that have brought efficiency to commercial sector logistics operations, e.g., the use of bar coding to track products. The second phase involves a whole market approach to assess long term product financing and the long term role, structure, and financial aspects of public sector distribution.

Despite considerable improvement over the last five years, the MOH system is still characterized by stockouts, delays in deliveries, and incorrect orders. These are common in many supply chains, but when the stockouts are of life saving commodities, it becomes a matter of urgency. The causes of these problems are not always obvious. LCS will work with the MOH and NMS to carry out a logistics process analysis to identify root causes, using standard measures such as order accuracy, accuracy of order processing, on-time delivery, putaway accuracy, accurate order picking, and packaging accuracy. Once root causes are understood (and we may expect them to have local variations), a plan to resolve the issues will be devised, to include human capacity development activities. Some phase-one issues and solutions are:

Develop an emergency response capability. The NMS currently works to capacity and struggles to respond to emergency orders from the field. Establishing an "Emergency Order Team" of NMS staff to deal with emergency orders of life-saving products (ARVs, AL) would temporarily provide a solution until longer-term system-wide interventions make emergencies extremely rare.

Emphasize human capacity development. High turnover within the MOH (30% last year) and the introduction of new products warrant training and re-training of staff in logistics management, emphasizing supervision and OJT for greater sustainability. The lack of customs clearance knowledge and expertise at the NMS causes delays in product availability. An expert seconded to NMS would be able to transfer skills and help establish custom clearance procedures and planning.

Improve workflows at NDA. Testing procedures need to be made more efficient. NDA is legally required to locally test anti-malarials, ARVs, condoms, LLINs, and TB drugs, sometimes causing delays in clearance and distribution. NDA currently registers all products by hand; computerization could raise productivity and speed registration.

Improve IT. An integrated MIS for all products should be developed for overall improvement of commodity management.

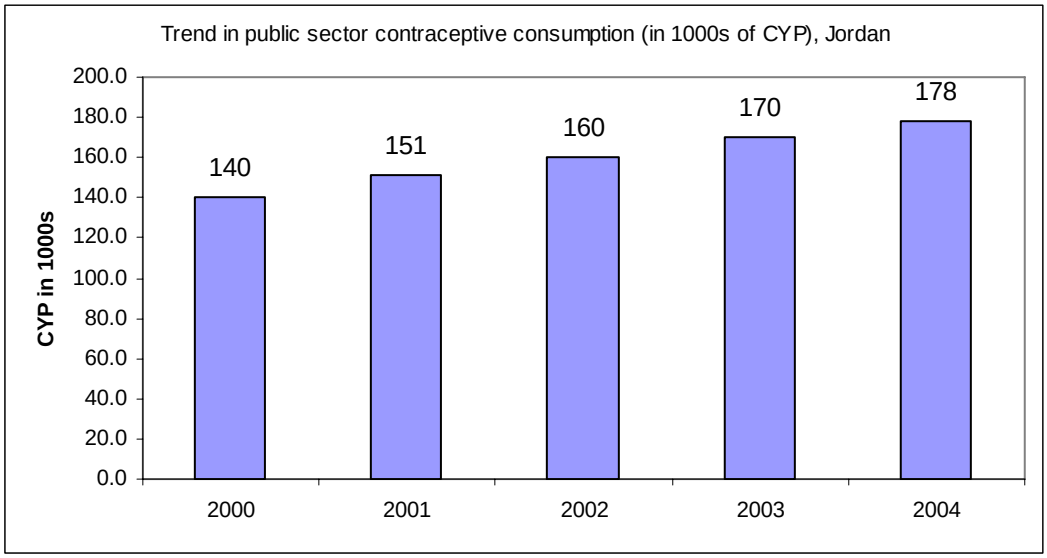
Improve communications. Simply placing an MOH staff person at the NMS would ensure sharing of information coming from the various partners on procurement plans.

Improve last mile delivery. The problem of distribution to remote areas is a special concern. A DELIVER study on drug distribution demonstrated that a vehicle is required only 4 to 5 days every 2 months, which means it is not financially efficient to solve the problem through purchase of additional vehicles. Delivery Truck Topping Up systems have brought good results (e.g., South Africa, Zimbabwe) and could be used in Uganda. Creating district-level transport budgets to allow local management of distribution to hard to reach sites is another intervention that has brought good results (e.g., Tanzania).

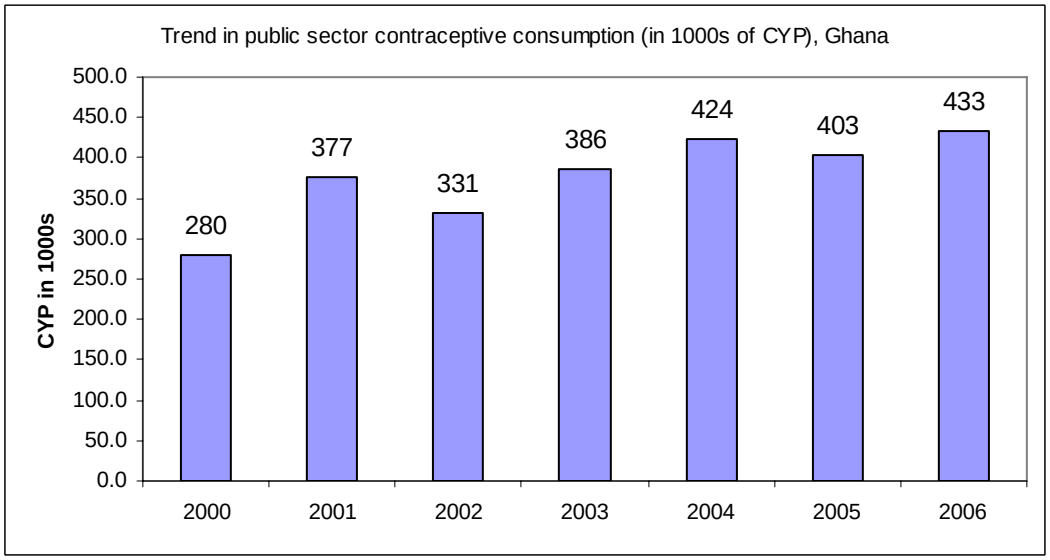
Develop a long-term health logistics strategy. Strategic or CS planning should involve projecting the optimum role for public sector logistics in health supply chains. To understand the long term role of the public sector distribution system, a method extensively employed in the private sector called Logistics Master Planning (LMP) can be used. Beginning with profiles of the central variables such as client needs and product handling requirements, LMP designs the processes for inventory planning and management, supply, transport, and distribution including warehousing. At this point significant reforms such as reduction of in-country pipelines, outsourcing of procurement, storage, and distribution services, and cost recovery for appropriate categories of products can be addressed.

APPENDIX 5

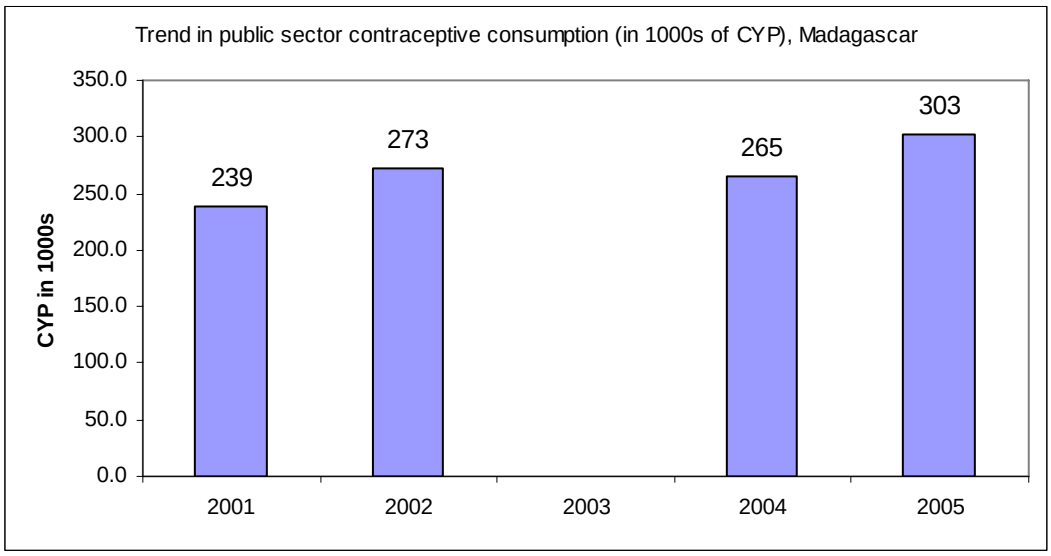
TRENDS IN CONSUMPTION DATA FROM CONTRACEPTIVE PROCUREMENT TABLES



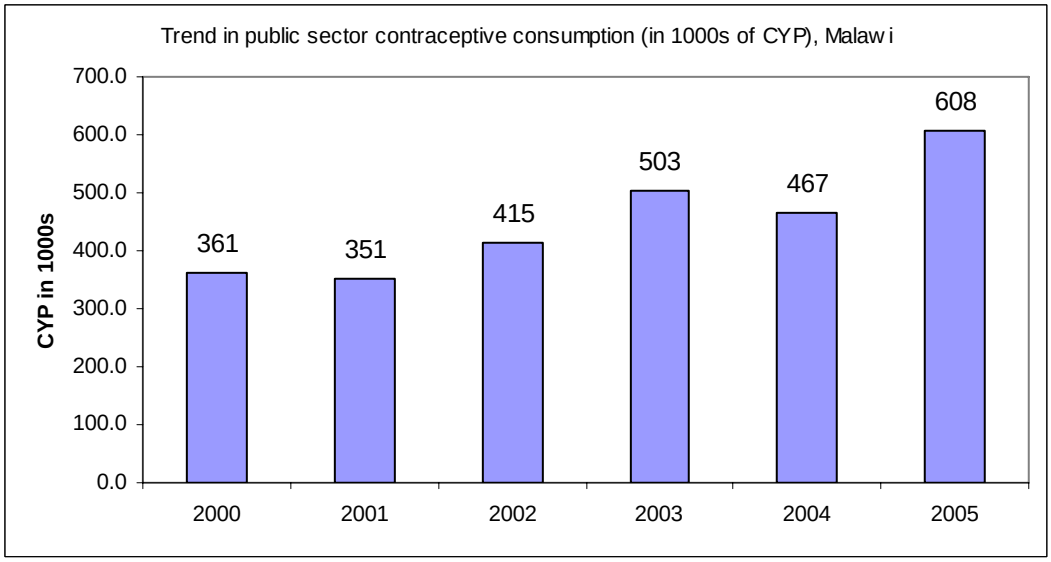
In Jordan, between 2000 and 2004, the average public sector contraceptive consumption increased at a rate of about 9.5 thousands CYP per year from 140 thousand CYP in 2000 to 178 thousand CYP in 2004.



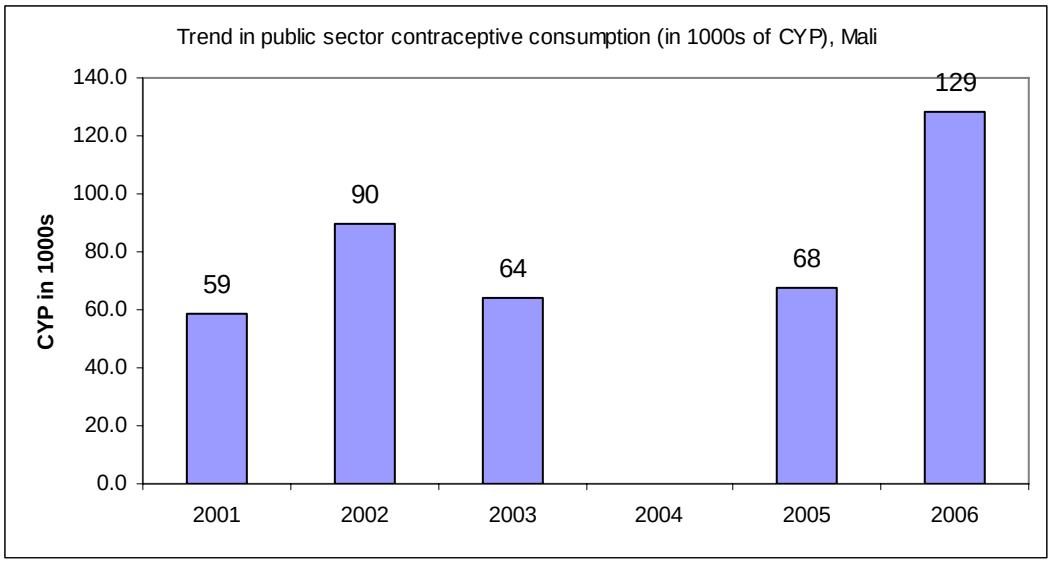
The public sector contraceptive consumption in Ghana increased by 28 percent from an average of about 329 thousand CYP per year during 2000–2002 to an average of about 420 thousand CYP per year during 2004–2006.



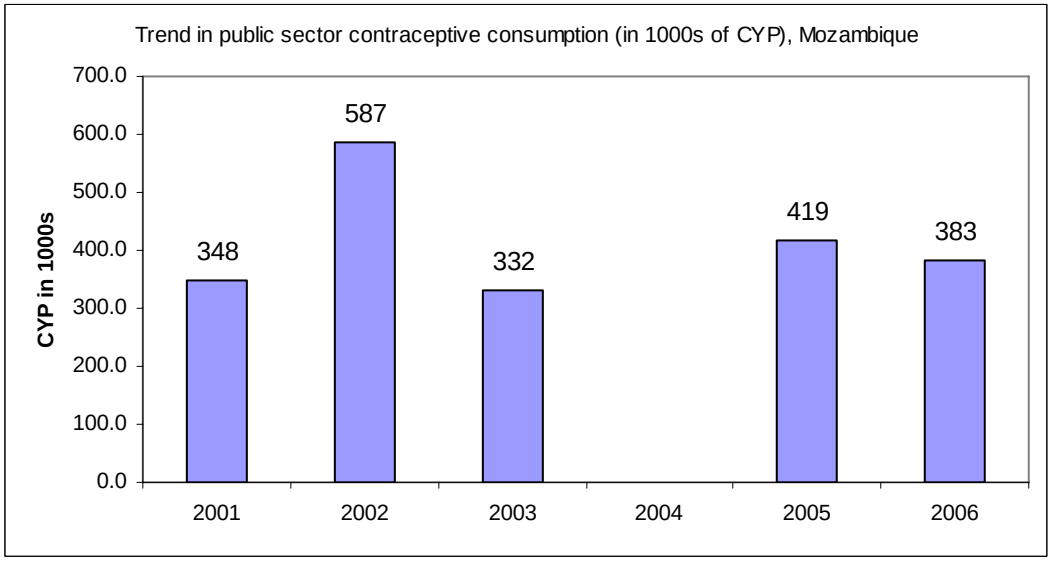
The average public sector contraceptive consumption in Madagascar increased from about 256 thousand CYP per year during 2001–2002 to about 284 thousand CYP per year during 2004–2005.



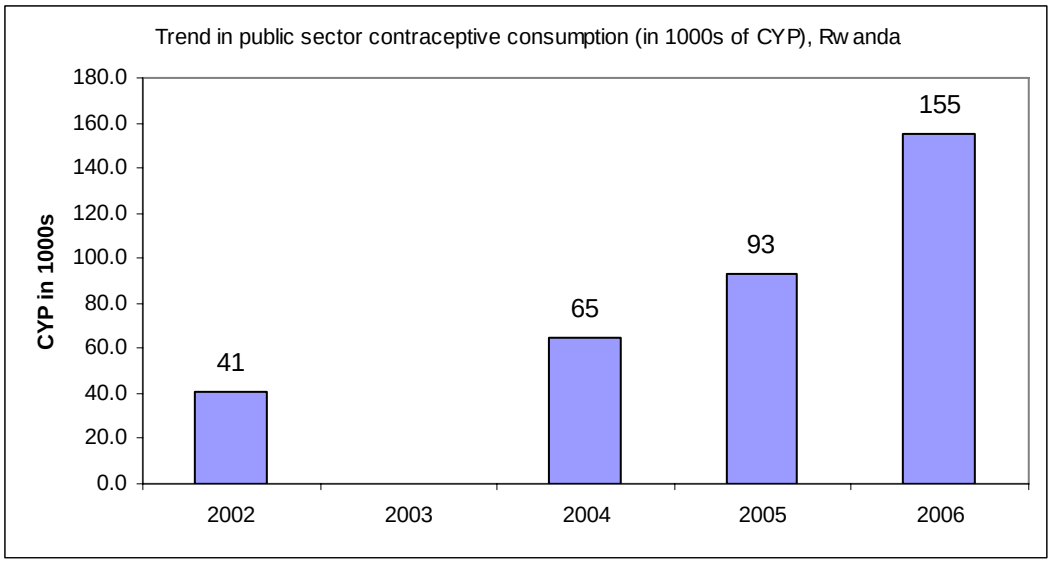
The average public sector contraceptive consumption in Malawi increased by 40 percent from about 376 thousand CYP per year during 2000–2002 to about 526 thousand CYP per year during 2004–2005.



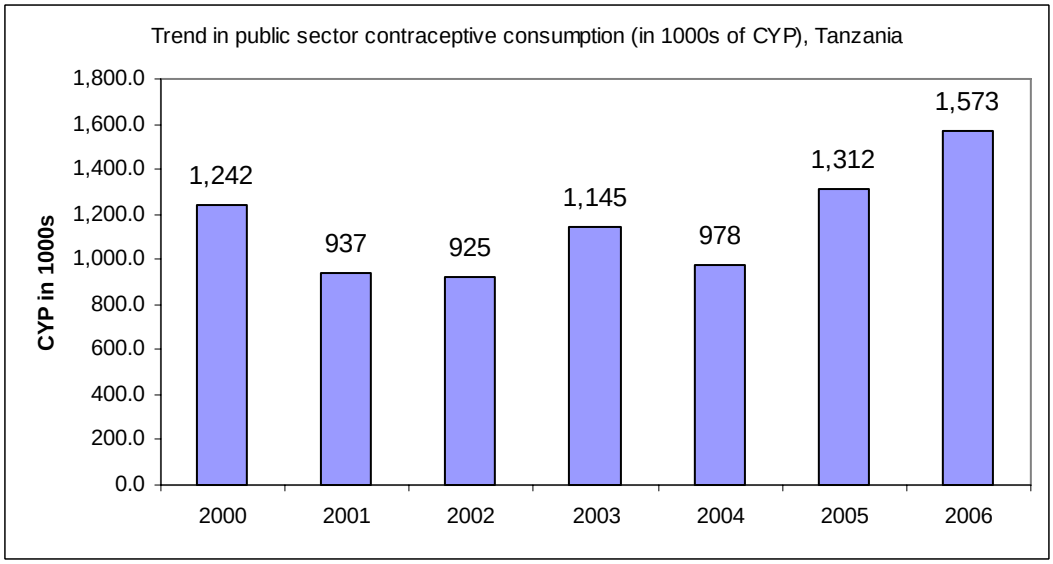
The average annual public sector contraceptive consumption in Mali increased by 32 percent from about 74 thousand CYP per year during 2001–2002 to about 98 thousand CYP per year during 2005–2006.



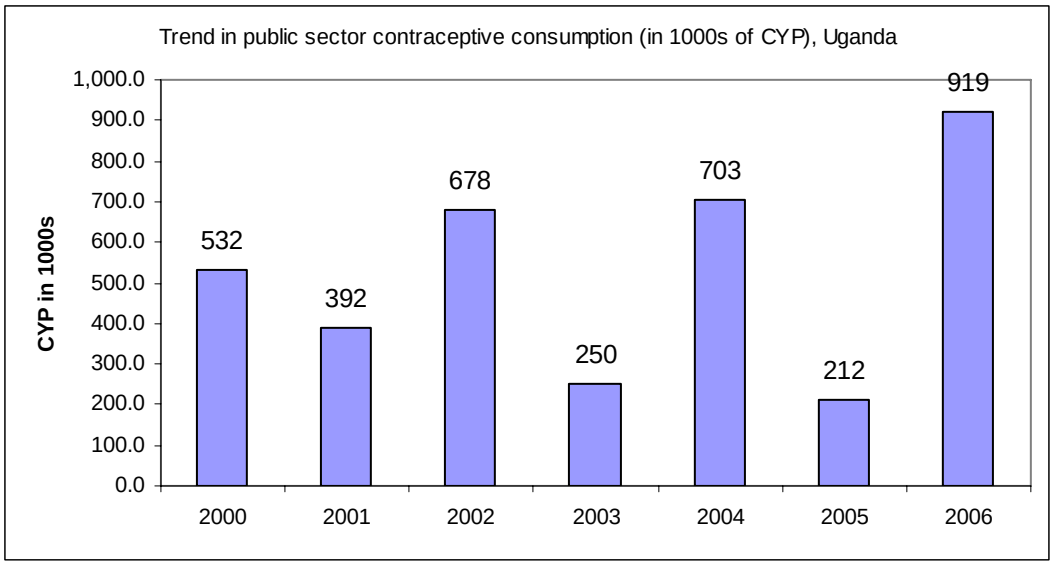
The average annual contraceptive consumption in the public sector in Mozambique decreased by 5 percent from about 422 thousand CYP per year during 2001–2003 to about 401 thousand CYP per year during 2005–2006. However, the decreasing trend in the contraceptive consumption in the country is observed due to the unusually high consumption reported during 2002 (which is mainly contributed by condoms). The outlier year for contraceptive consumption is probably reflecting the quantity of contraceptive distributed rather than the actual quantity of contraceptive used by the end users.



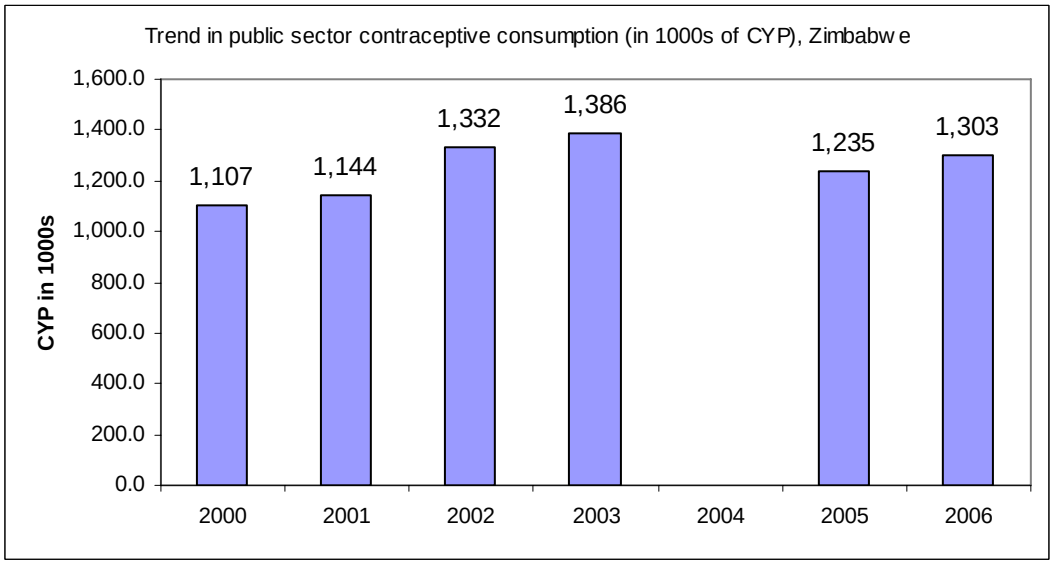
In Rwanda, the consumption of the public sector contraceptives increased radically by 2.4 times from an average of about 53 thousand CYP per year in 2002 and 2004 to an average of about 124 thousand CYP per year in 2005–2006.



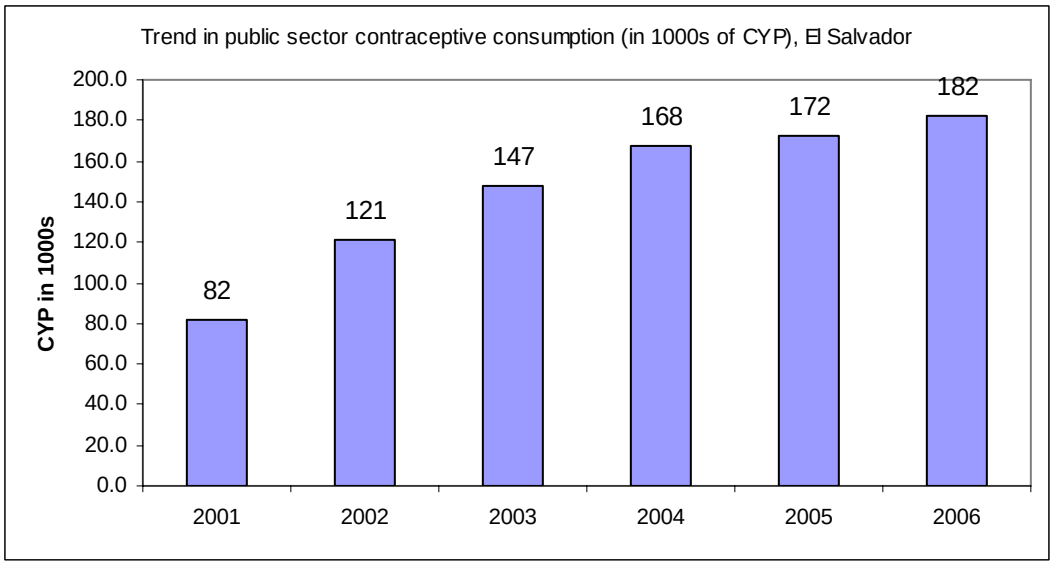
The average public sector contraceptive consumption in Tanzania increased by 24 percent from about 1.04 million CYP per year during 2000–2002 to about 1.29 million CYP per year during 2004–2006.



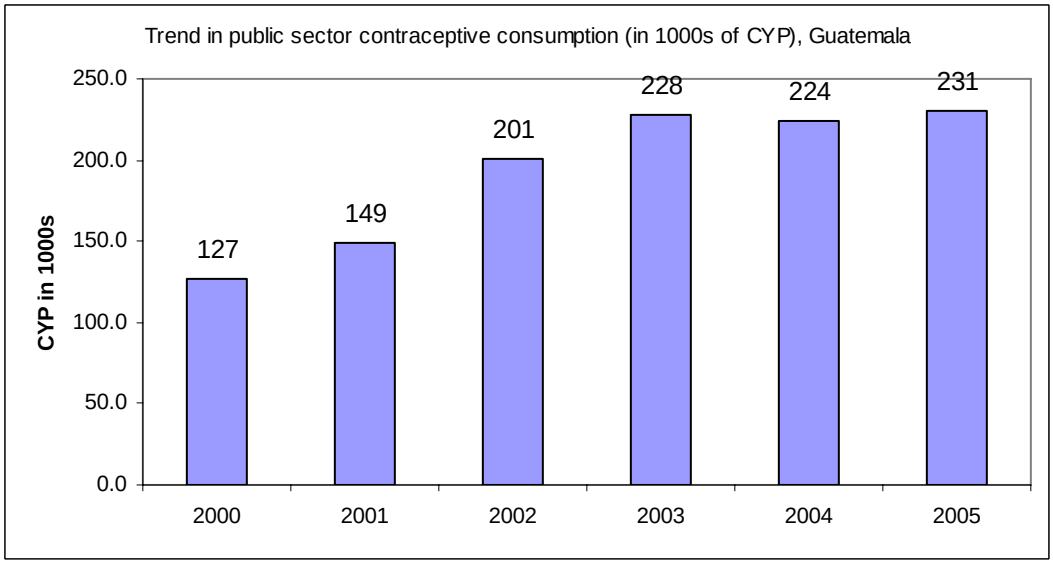
The average public sector contraceptive consumption in Uganda increased by 14 percent from about 534 thousand CYP per year during 2000–2002 to about 611 thousand CYP per year during 2004–2006.



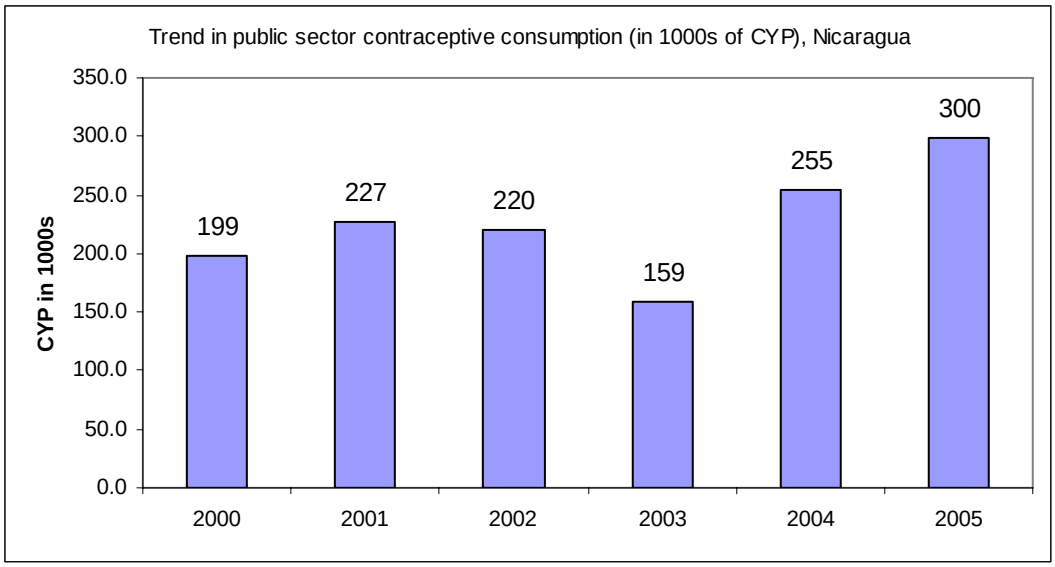
The average annual consumption of public sector contraceptives in Zimbabwe increased from about 1.13 million CYP per year during 2000–2001 to about 1.36 million CYP per year during 2002–2003 then decreased to about 1.27 million CYP per year during 2005–2006. Nevertheless, the average annual contraceptive consumption in 2005–2006 was 13 percent higher than what it was during 2000–2001.



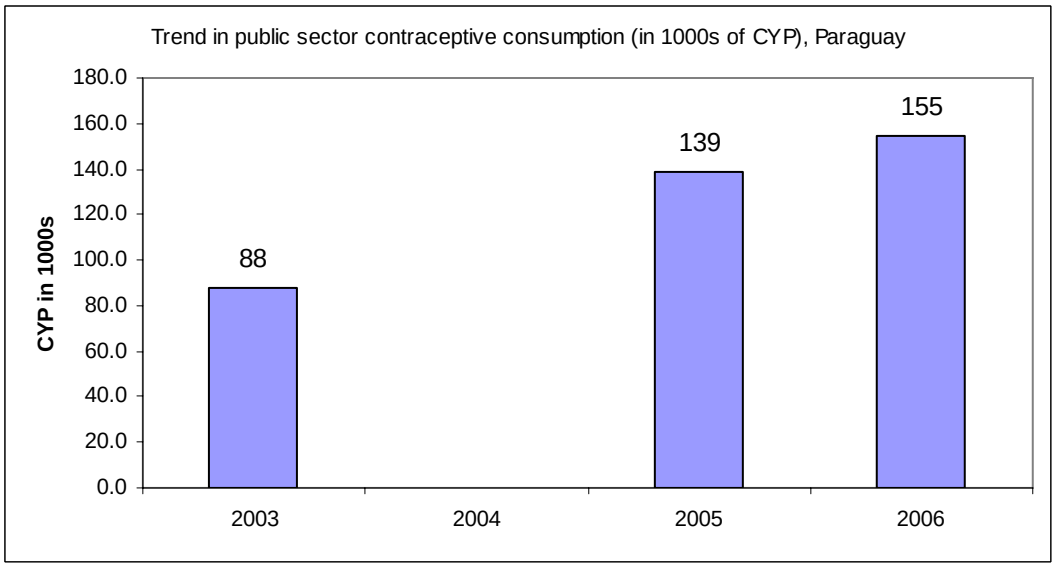
The average public sector contraceptive consumption in El Salvador increased by nearly 50 percent from about 117 thousand CYP per year during 2000–2002 to about 174 thousand CYP per year during 2004–2006.



The average public sector contraceptive consumption in Guatemala increased by 43 percent from about 159 thousand CYP per year during 2000–2002 to about 228 thousand CYP per year during 2003–2005.



The average public sector contraceptive consumption in Nicaragua increased by 10 percent from about 215 thousand CYP per year during 2000–2002 to about 238 thousand CYP per year during 2003–2005.



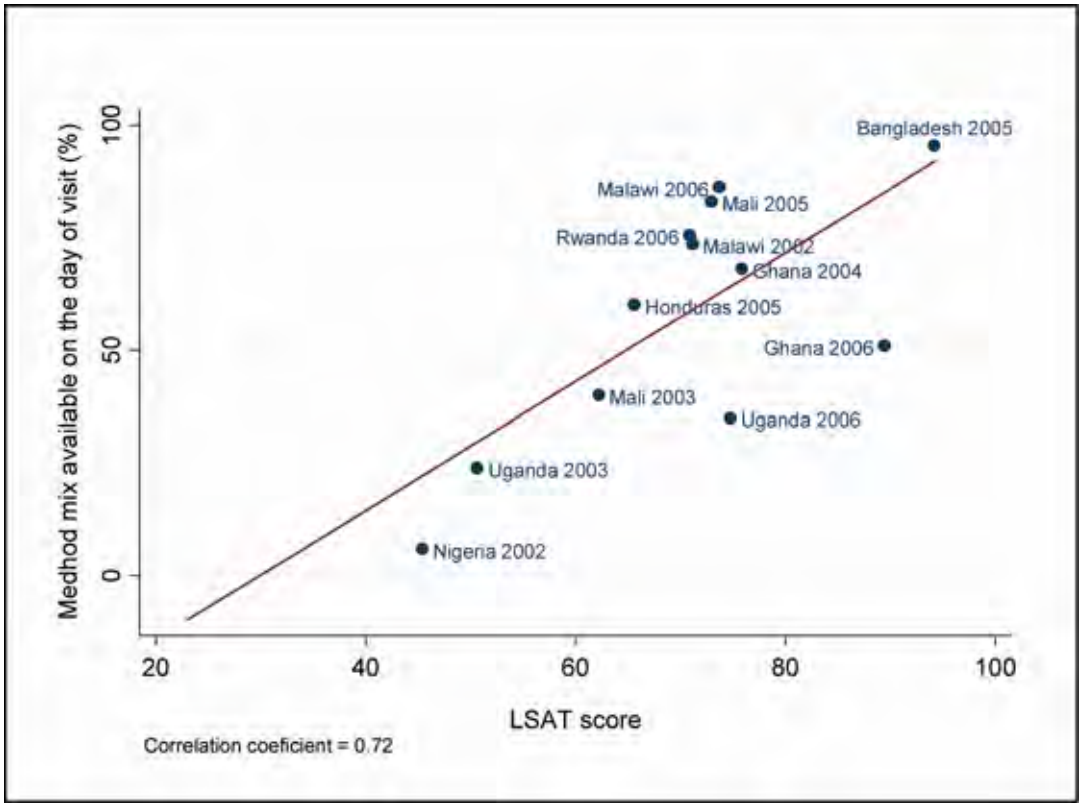
In Paraguay, the quantity of contraceptive consumption in the public sector increased by 29 percent from an average of about 113 thousand CYP per year in 2003 and 2005 to about 147 thousand CYP per year in 2005–2006.

APPENDIX 6

CORRELATIONS OF LSAT, LIAT, AND CPR

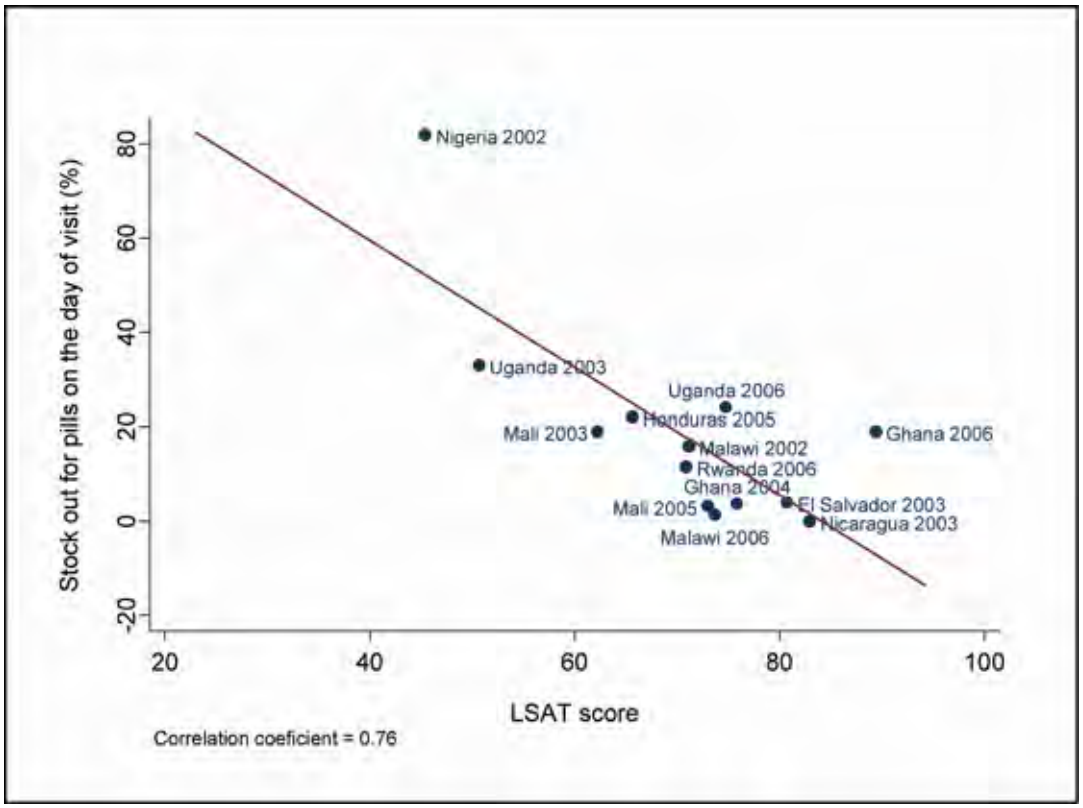
The DELIVER project's mandate is supported by the theory that the use of modern contraception will increase when health logistics systems are strengthened and a choice of several contraceptive methods is readily available in health facilities. Although this has intuitively been assumed in the past, analysis of DELIVER assessment data for 11 countries provides evidence confirming this hypothesis: a strong quantitative relationship exists between product availability, logistics system performance, and CPR. The analysis shows that as the performance of the health logistics system (i.e., LSAT) improves, product availability (i.e., LIAT) improves, and family planning use (i.e., CPR) increases.

Correlation between product availability and LSAT score



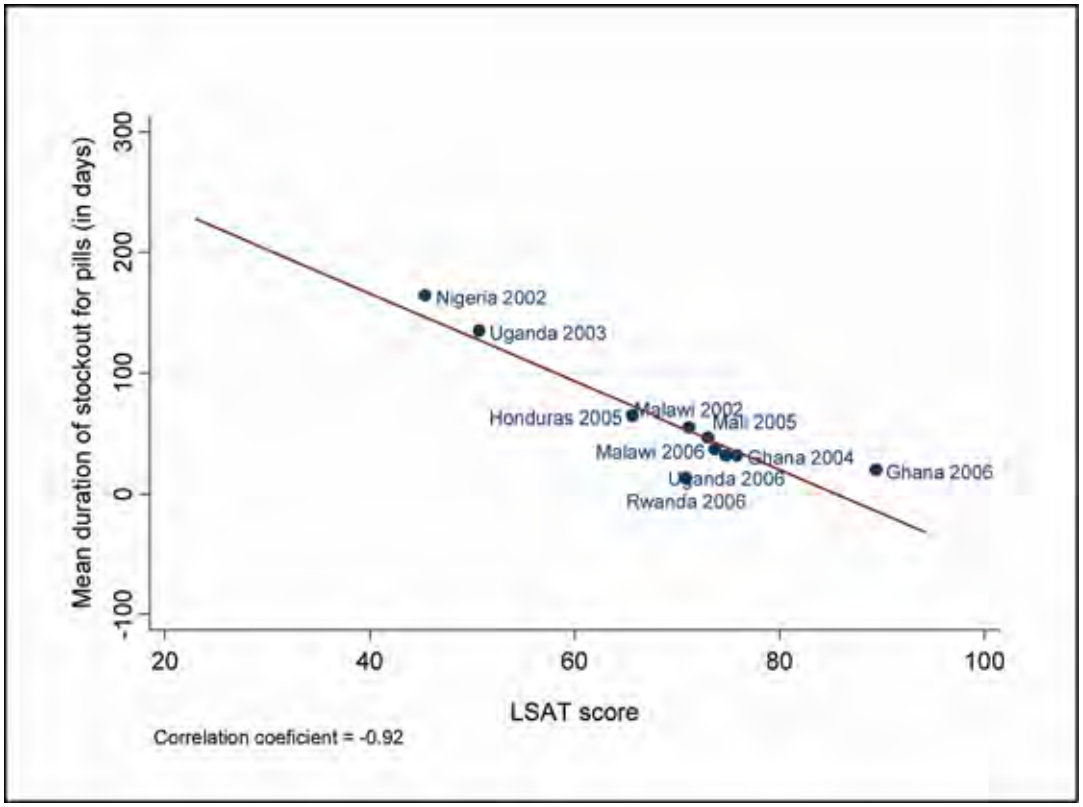
- Strong relationship between the availability of three contraceptive methods (condoms, pills, and injectables) and the overall system performance (i.e., LSAT) score
- As logistics performance improves, the availability of a mix of contraceptive methods also improves
- With a strengthened logistics system, pills, condoms and injectables are more available in health facilities.

Correlation between stockout for pills and LSAT score



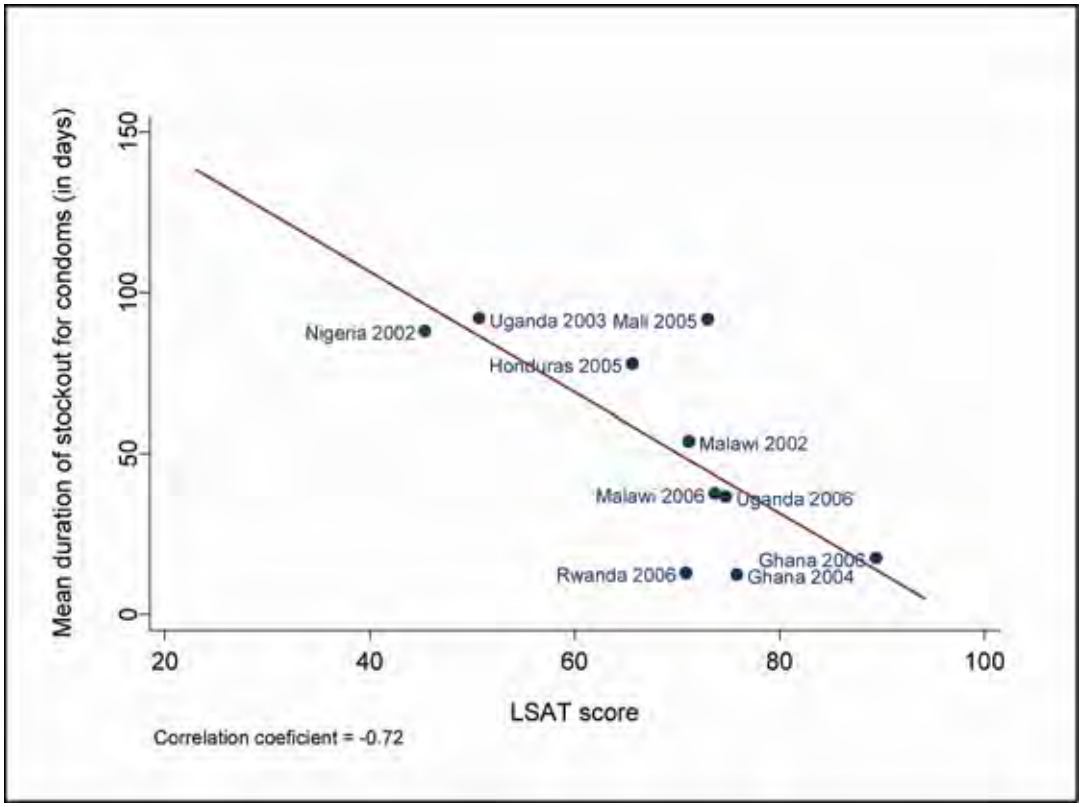
- Strong relationship between the stockout rate of pills and the overall system performance, i.e., LSAT score
- As logistics performance improves, stockout rates of pills declines
- With a strengthened logistics system, stockouts of pills in health facilities decline.

Correlation between mean duration of stockout and LSAT score



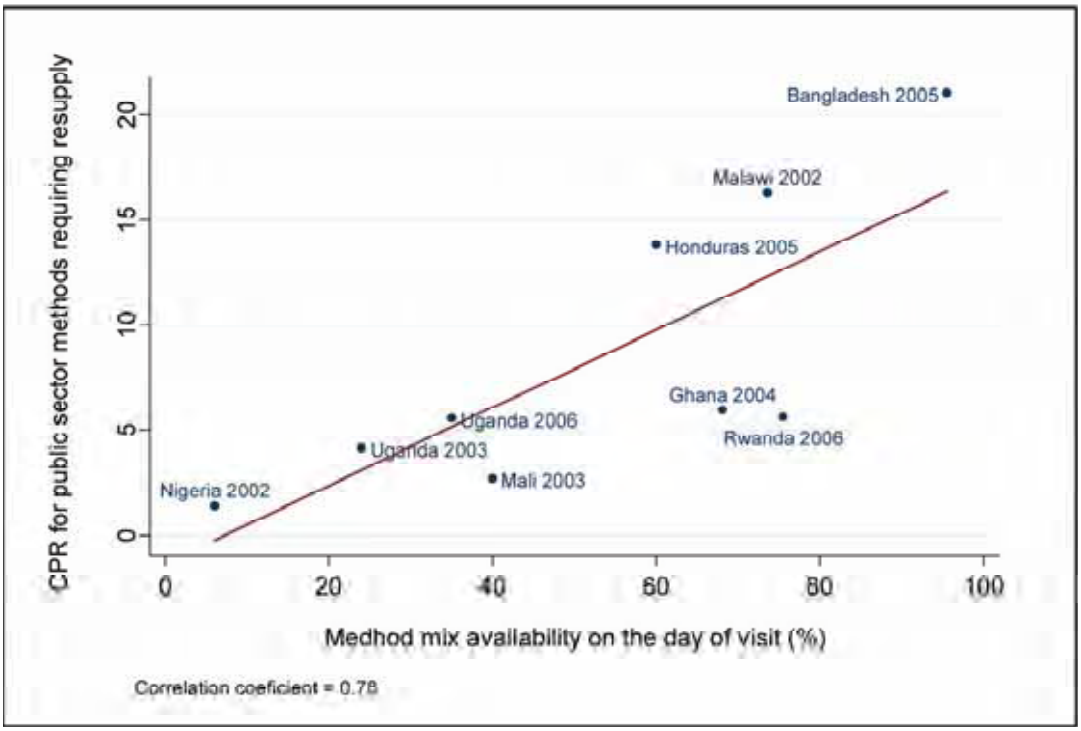
- Strong relationship between the mean duration of stockout of pills and the overall LSAT score
- As logistics performance improves, the average duration of stockout of pills over a six month period declines
- With a strengthened logistics system, stockouts of pills in health facilities decline.

Correlation between condom stockout and LSAT score



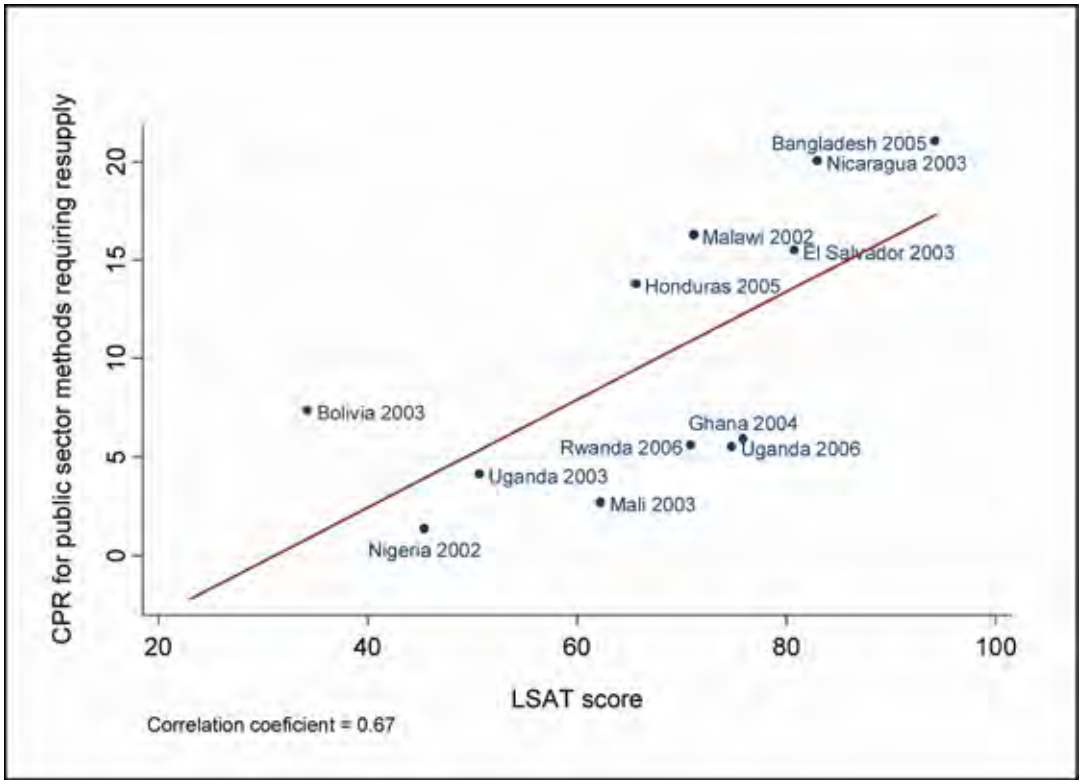
- Strong relationship between the mean duration of stockout of condoms and the overall LSAT score
- As logistics performance improves, the average duration of stockout of condoms over a six month period declines
- With a strengthened logistics system, stockouts of condoms in health facilities decline.

Correlation between contraceptive prevalence rate (CPR) and product availability



- Strong relationship between the availability of three contraceptive methods (condoms, pills, and injectables) and the CPR for the public sector
- As product availability of a mix of contraceptive methods improves, the CPR for the public sector increases
- When there is a choice of temporary contraceptive methods (pills, condoms, and injectables) available in health facilities, more women use contraception.

Correlation between LSAT score and CPR



- Strong relationship between the overall LSAT score and the CPR for the public sector
- As the overall LSAT score increases, the CPR for the public sector increases
- When logistics systems are strengthened, more women use contraception.

METHODOLOGICAL NOTE

Product availability is measured using results from the Logistics Indicators Assessment Tool (LIAT). The indicators used from the LIAT are stockout on day of visit based on physical inventory, the duration of stockouts over the six months preceding the assessment, and the availability of a mix of methods (pills, condoms, and injectables) on the day of visit based on physical inventory.

Logistics performance is measured using scores from the Logistics System Assessment Tool (LSAT). The LSAT has 11 components, 8 of which were consistently measured in the countries analyzed. The scores from these 8 components were averaged to produce an overall LSAT score.

CPR is taken from the most recent Demographic Health Surveys (DHS). The graphs above show only the CPR for the public sector, since most of the LIAT and LSAT data is from the public sector. CPR for the public sector is defined as the percentage of women of reproductive age who are currently using contraception from public sector sources.

Analysis was conducted on 11 DELIVER countries for which both LSAT and LIAT data was available. Seven of these countries had LSAT and LIAT data from two points in time, allowing for a comparative analysis that suggested that improvements in logistics systems were associated with improvements in product availability.

APPENDIX 7

COUNTRY PERFORMANCE/ACHIEVEMENT NOTES, DELIVER

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
Bangladesh **$10,747,286**	• The stockout for FP commodities in the SDPs remaining less than 5 percent during that period while the number of contraceptive users increased substantially. For condoms, pills, and injectables, and IUDs, product availability at the Upazila level was 95.5 percent in 2006.	• One hundred percent of warehouses and 70 percent of Upazila stores had stock cards, and up-to-date bin cards were available in 100 percent of warehouses and 60 percent of Upazila stores (2006). The percent of warehouses and Upazila stores with accurate stock cards was 95 and 90 percent respectively (2006), and 99 percent of facilities sent in LMIS forms (2006). • In the application of a LSAT in 2002 and 2004, overall scores increased from 79 percent to 93 percent, with improvements due mainly to improvements in the LMIS, forecasting, inventory control, and transport scores. • Designed procurement manual for contraceptives and trained MOH officers that led to improved procurement capacity for contraceptives for the public sector programs.	• Contraceptive security strategy developed. • Equity in modern method contraceptive use between rich and poor and between rural and urban areas improved. • The effectiveness of the public-private partnership in the contraceptive market of Bangladesh is improving; public sector clients who were in the richest quintile are gradually shifting to the private sector, while the public sector is continuing to expand its services among the poor.	• The number of married women in reproductive age who are using contracep-tives from public sector sources increased from 7.4 million in 2000 to 8.0 million in 2004
Philippines **$1,332,000**	• Although CPR for all methods increased by only two percentage points between 1998 and 2003, use of modern methods increased from 28	• Develop a phase-down allocation schedule for each province based on poverty incidence, LGU capacity/ readiness to adopt a reduction in contraceptive donations, CPR, and	• The public sector health system continues to be the major provider of family planning methods, with 67.2 percent of the share of CPR,	

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
	percent to 33 percent during the same period, showing a significant improvement in contraceptive use, probably due to the availability of these supplies throughout the government facilities	unmet need. • Modify the CDLMIS software at the Department of Health/Central Office (DOH CO), to help DOH manage the reduced allocations of donated contraceptives to provinces based on LGU classification (by wealth), and to allow LGUs to monitor locally procured supplies. • Train LGU, DOH/Centers for Health Development, and Population Commission (POPCOM) staff to address the contraceptive phaseout issues described under the CSR strategy, and the development and implementation of Policy Guidelines Formulation workshops for DOH, provincial, and LGU staff.	compared to 29.3 percent from the private sector, including 17.2 percent covered by pharmacies. Since 1970, the U.S. Government has been a major donor by providing assistance to the family planning program of the Philippines, and for the last 12 years, USAID contraceptive donations (pills, injectables, intrauterine devices [IUDs], and condoms) accounted for 80 percent of the country's total requirements. However, in 2003 USAID began phasing out its donations as part of a broader effort to encourage local ownership of the family planning program.	
Ethiopia **$5,684,000**	• The supply of contraceptives in Ethiopia, while still vulnerable, has improved considerably in 2006/2007. The 2006 LIAT survey found that less than a quarter of facilities sampled were stocked out of high demand products – DepoProvera (24%) and Microgynon (15%), while only 12% of facilities reported being stocked-out of condoms. Stock-outs were common during 2004 and 2005, particularly for injectables, the preferred method. Since 2005, several of the regions, led by SNNPR, have allocated funds for the procurement of contraceptives, and the FMOH also allocated a small amount in this year's budget.	• A significant milestone was reached when the Ministry of Health formally launched the new HCSS in October 2006. • 87% reported contraceptive dispensed-to-user data (quantities used), 76% reported on stock-on-hand, and 80% of all facilities reported one of these elements within the last month of the survey. The high rate of reporting on these logistics essential data elements was satisfying given the lack of a system in 2003.	• In July 2003, DELIVER, together with the POLICY Project, planned and facilitated a Reproductive Health Commodity Security. • In July 2006, with DELIVER's guidance, this committee organized a second national CS workshop. Key topics included reconciling targets with shortfalls in supply and developing regional forecasts. The Family Planning Technical Committee meets monthly.	

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
Kenya **$20,493,830 (TA)** **$1,473,170 (Com)**	• The 2006 Stock Status Assessment found that more then 95 percent of facilities had all tracer commodities in stock on the day of the visit with the exception of Diflucan and Nevirapine suspension. For family planning, 80 percent of all facilities and district stores had five methods in stock 9pills, injectables, IUDs, emergency contracptive pills and male condoms. Rapid HIV tests (Determine and Bioline) were found in 90 percent of health facilities and 80 percent of the district stores. • Fewer contraceptive stockouts were found in 2006 in the Eastern South DELIVER pilot province than in the rest of the country	• There were marked improvements in logistics system performance in the DELIVER pilot region in the areas of reporting rates, LMIS, inventory control, supervision and the presence of trained personnel. • Other: In addition to the logistics system for family planning commodities, which was developed under FPLM III and the first year of DELIVER, systems for TB, STI drugs, ARVs and blood safety reagents and tests were developed. By the end of DELIVER partial systems were developed for laboratory supplies and malaria commodities. • Changes to the LMIS system (Clarion-based to Oracle-based) resulted in better reports and a consumption-based system for determining resupplies of contraceptives to health facilities. This system handles approximately 400 commodities from RH, TB, HIV/AIDS,STI, malaria and laboratory programs. It uniquely combines an inventory control system, a logistics data information system and a distribution information system in one package for more than 4,000 health facilities.		

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
Malawi **$4,028,385**	• Compared to the 2004 baseline, the frequency and duration of stockouts had declined by 2006. With only a few exceptions, STI drugs were stocked at appropriate levels at health facilities throughout the country.	• The reproductive health logistics system has been strengthened by establishing a Logistics Unit in the MOH to facilitate the design of the Malawi Health Commodities Logistics Management System (MHCLMS), nationwide roll-out of the redesigned MHCLMS in 2003-04, development of new CLMS forms and handbooks with and nationwide training of logistics staff. • The use of stock cards in facilities improved between 2004 and 2006. In addition, logistics system performance as measured by LSAT improved in DELIVER focus areas of LMIS, forecasting and inventory control procedures. Following recommendations from DELIVER the regional medical stores, who are responsible for delivery of commodities to health facilities, secured vehicles sufficient to complete these activities.		• There has been a rapid growth in CPR with temporary methods (injectables, condoms and pills) making up 78% of the method mix. The average public sector contraceptive consumption increased by 40 percent from about 376 thousand CYP per year during 2000–2002 to about 526 thousand CYP per year during 2004–2005.
Rwanda **$1,766,193**	• The Rwanda 2005 DHS results show an increase of the CPR from 4% in 2000 to 10.3% in 2005. While this point to an increased level of service provision overall, it would not be possible without a parallel increase in the availability of the commodities needed to provide those services.	• DELIVER Assisted the GOR for the development of standard operating procedures, the capacity building of stock managers. The project trained all stock managers at central, regional and district level. Even tough the country faces a turn over of trained staff, 60% of visited facilities have trained personnel for warehouse and facilities stock management. At the end of the project and the reduction of stockouts at all levels are effective. • Improved storage conditions: The LIAT reported that 100% of SDP and warehouses are meeting more than 75% of storage conditions in 2006		• The consumption of the public sector contraceptives increased radically by 2.4 times from an average of about 53 thousand CYP per year in 2002 and 2004 to an average of about 124 thousand CYP per year in 2005–2006.

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
		compare to less than 62 % in 2002 and 92 % in 2004; the study also report more than 90% reporting rate, therefore ensuring the availability of the 3 essential data for decision making.		
Tanzania **$7,834,330 (TA)** **$7,823,950 (Com)**	• Stockout on the day of the visit for family planning commodities was higher (22%) in the ILS pilot regions in 2005 compared to the national average (9%) estimated two years earlier; nevertheless stock-outs for essential drugs and HIV test kits on the day of visit was lower (7% and 8%, respectively) in the ILS regions compared to the national averages (15% and 13% for essential drugs and HIV test kits, respectively)	• Designed and implemented ILS to replace indent, vertical, and kit system in seven regions of Tanzania covering 34 percent of the population. The evaluation of the pilot ILS indicates that about 72% of the staff in the ILS pilot regions felt confident in their ability to implement ILS; and, almost all (99%) of the staff preferred the ILS to the previous vertical systems. • The logistics system performance as measured by LSAT improved in the ILS regions. The average LSAT score for essential drugs in the ILS regions in 2004 was higher (31%) compared to the national average (25%) in 2002; the improvement in the supply chain functionality for essential drugs in the ILS regions as determined by the LSAT scores is associated with the improvement in product availability for those commodities in those regions observed from the facility surveys. The average LSAT score for STI commodities in the ILS regions was also higher (53%) compared to the national average (16%) three years earlier. The LSAT scores for family planning commodities was 77% in 2004 for the ILS regions	• Contraceptive security forum established. In June 2005 the contraceptive security forum identified imminent stockout for contraceptives due to delays in funding which was responded by USAID, a member of the forum, by providing emergency funds.	• The average public sector contraceptive consumption increased by 24 percent from about 1.04 million CYP per year during 2000–2002 to about 1.29 million CYP per year during 2004–2006.
Uganda	• 2006 survey showed increase in product availability in every	• System Strengthening: Trained over 8,600 health personnel. Over 70% of	• Public sector expenditures on health commodities increased	• The average public sector

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
$9,402,434	product category. • Increased ARV-supplied sites nearly ten-fold, from 24 ('04) to 222 ('06). • MOH facilities providing TB drugs increased 75%. ; PMTCT services by 300%.; EPI coverage increased from 63% to 89%.	facilities are adhering to storage guidelines ('06) • System Design: Increased the throughput of the supply chain five-fold (based on value). • Implemented new supply chains for lab supplies, TB drugs, HIV/AIDS products.	from US$.90/capita to US$4.60/capita.	contraceptive consumption increased by 14 percent from about 534 thousand CYP per year during 2000–2002 to about 611 thousand CYP per year during 2004–2006.
Zimbabwe **$6,508,000 (TA) $929,000 (Com)**	• Stockout rates have been maintained below 5 percent for male condoms, Depo-Provera, Lo-Femenal, and Ovrette in both 2005 and 2006. There was 98 percent distribution coverage in 2006 and 100 percent reporting nationwide in 2006 as well.	• In 2002, an assessment revealed that critical HIV/AIDS condoms and contraceptives were not reaching service delivery points and in response, the Delivery Team Topping-Up (DTTU) system was designed, delivering these commodities directly from the central level to all service delivery points nationwide. The DTTU system was piloted in 2003 and implemented nationwide in 2004. • An automated logistics management information system is maintained at the central level. In 2006, new TOP UP software was designed and installed in early 2007 to improve system quality and reporting. Summary delivery Reports are produced after each trimester delivery and disseminated through the system to key stakeholders. • LSAT assessments conducted in 2004 and 2007 indicate improvements in almost all of the components, with LMIS, product selection, obtaining supplies and procurement, transport and distribution, and product use achieving a score of 100 percent		• The average annual consumption of public sector contraceptives increased from about 1.13 million CYP per year during 2000–2001 to about 1.36 million CYP per year during 2002–2003 then decreased to about 1.27 million CYP per year during 2005–2006. Nevertheless, the average annual contraceptive consumption in 2005–2006 was 13 percent higher than what it was during 2000–2001. The decline in contraceptive consumption between 2002-2003 and 2005-

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
		each.		2006 could be reflecting decrease in losses and adjustments due to improved inventory system rather than decrease in actual consumption of contraceptives.
West Africa Initiative **$950,000** **WARP** **$1,872,000**			• Activities carried out included forecasts of contraceptive requirements in Burkina, Cameroon, Togo, and Sierra Leone. The forecasts are conducted in response to USAID needs to purchase the required supplies for the countries being assisted. Contraceptive procurement tables are produced to inform UNFPA, MOH and other provider procurement plans. DELIVER, in collaboration with the AWARE-RH and POLICY II projects, has assisted country MOH's to develop contraceptive security strategic plans in Burkina, Cameroon, Togo and Sierra Leone. On the basis of these strategic plans, the countries are mobilizing necessary resources to ensure CS. • DELIVER conducted workshops to build capacity of institutions and individual professionals on CS and HIV /AIDS logistics. The paramount regional activity remains DELIVER technical assistance to WAHO, As a result of this support, and other forms	

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
			of technical assistance provided by DELIVER, WAHO was able to develop a strategic plan for reproductive health commodity security (RHCS) and begin work on a CIB system in the sub-region. The CIB receives funding and technical support from USAID. The sub regional strategic plan is supported by a number of funding agencies including USAID and UNFPA.	
Ghana **$3,841,000**	• The 2006 Logistics Indicator Assessment Tool results show that, on average, 21 percent and 26 percent of facilities were out of stock during the day of the visit, respectively, for contraceptives and essential medicines (EM). During the last six months, 38 percent of health facilities (hospital and health centers) had experienced a stockout of at least one of the sample list of 12 tracer medicines. Thirty-four percent of health facilities (hospitals and health centers) had experienced a stockout of at least one of the three popular contraceptives in Ghana (Lo-Femenal, Depo-Provera, male condom) during the past six months. For EM and contraceptives, stockouts normally occurred once, irrespective of the product or institution. These data now serve as a baseline for further work. • In April/May of 2006 Lo-Femenal was available in 81 percent of facilities (hospitals and health centers) on the day	• A major development of DELIVER's intervention is the new integrated supply chain system operationalized in 2002 to augment the previous vertical chains for contraceptives, medical consumables, and essential drugs. Standard operating procedures (SOPs) and a logistics management information system (LMIS) system were developed to facilitate implementation of the new system and by July 2006 1,055 people had been trained nationwide, including 33 trainers. The SOPs describe key activities in the stores and supply operations, with responsibilities for personnel at the regional and service delivery point levels. • There are policies, guidelines, and structures to ensure proper inventory control, and training programs are frequently conducted by the Stores, Supplies, and Drug Management (SSDM) and Pharmacy Units of the GHS to ensure their use. All of the warehouses have been reorganized and equipped to support the integrated supply and scheduled	• DELIVER, together with the various stakeholders in reproductive health commodity distribution, annually prepares forecasts of the various commodities required in the country and corresponding procurement plans (contraceptive procurement tables) for these commodities. DELIVER and the stakeholders, through the Inter-Agency Coordination Committee/Contraceptive Security (ICC/CS), present the results to the partners to obtain their financial commitments.	• The use of modern methods of contraception reached 19 percent in 2003, compared with 13 percent in 1998; The public sector contraceptive consumption increased by 28 percent from an average of about 329 thousand CYP per year during 2000–2002 to an average of about 420 thousand CYP per year during 2004–2006.

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
	of the visit, Depo-Provera was available in 76 percent of the facilities and male condoms were available in 79 percent of the facilities. • In general, the availability of contraceptives was is better than that of essential medicines at the facilities. An average of 21 percent of the health facilities were out of stock for contraceptives during the day of the visit, while 26 percent of health facilities were out of stock for essential medicines and 17 percent of testing sites were stocked out of test kits.	delivery systems (which were put in place with DELIVER's assistance), and there are policies, guidelines, and coordinating bodies in place for financing and donor coordination.		
Mali **$3,066,697**	• Most contraceptive products were also showing availability in over 80 percent of facilities in 2005. For example, condom availability at health facilities on the day of visit increased two-fold in 2005 to approximately 82%	• DELIVER assisted Mali MOH to design and implement a national integrated logistics management system for health commodities. The project helped to standardized procedures and forms at central, regional, districts and SDP levels. • To make it functional an organizational strengthening approach were implemented. All key staff from central and regional level has been trained to complete LMIS forms correctly and submit them, according to schedule. In 2005, over 70 percent of facilities reported sending their logistics management reports within the previous two months, and approximately 66 percent of facilities were using the reports to manage contraceptives and STI treatment drugs. • In addition to the LMIS data, twice a year, the project conducted a		• The average annual public sector contraceptive consumption increased by 32 percent from about 74 thousand CYP per year during 2001–2002 to about 98 thousand CYP per year during 2005–2006.

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
		nationwide stock status evaluation to gather accurate and reliable logistics essential data for forecasting, procurement planning, securing stakeholder commitment to the procurement plan, and submitting timely and accurate CPTs annually.		
Nigeria **$5,603,000**	• Compared to the 2002 baseline assessment, product availability in 2005 for Noristerat, Exluton, Depo-Provera, and male condoms significantly increased 31 percent, 57 percent, 19 percent, and 68 percent respectively. In addition, there were modest increases in Lo-Femenal (6 percent) and Microgynon (15 percent) during the same time period.	• The reproductive health logistics system has been strengthened through a redesign of the contraceptive logistics management system (CLMS), nationwide roll-out of the redesigned CLMS in 2003-04, development of new CLMS forms and handbooks with and nationwide training of logistics staff. • Stock card availability improved for all contraceptive commodities between 2002 and 2005, with increases of 17 percent for Lo-Femenal and Microgynon; 18 percent for Noristerat and Depo-Provera; 30 percent for Exluton; and 54 percent for male condoms. The percentage of facilities with updated stock cards also improved for all commodities between 2002 and 2005, increasing 38 percent for Lo-Femenal; 23 percent for Microgynon; 44 percent for Noristerat; 50 percent for Exluton, Male condoms, and IUCD; and 57 percent for Depo-Provera. • Storage conditions improved for twelve storage condition markers, with the most significant improvements in maintaining the storeroom in good condition (increase of 11 percent), storing products separately from insecticides and chemicals (increase of 9 percent), and separating damaged or expired products (increase of 8 percent).	• An assessment of Nigeria's CS situation was conducted in 2002 using the Strategic Pathway to reproductive Health Commodity Security (SPARHCS) tool and the results have been instrumental in advancing CS in Nigeria since. Results include the establishment of a national committee and working group for reproductive health CS and the development of a National Strategic Plan for Reproductive Health Commodity Security.	

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
El Salvador **$1,020,000**	• 84% of facilities had resupply methods available continuously over 6 month period sampled ('06) compared to 58% in '05	• LMIS is now automated at district level as well as central • >80% of facilities' record-keeping is accurate ('06).	• There is an active contraceptive security committee and there is a annual funding for contraceptive procurement. • With USAID assistance, the MOH has set up an agreement with UNFPA to serve as a contraceptive procurement agent for El Salvador, thereby gaining access to economies of scale and high-quality contraceptives. • Funding: In 2005, the MOH financed nearly 80 percent of its total contraceptive needs through UNFPA; it spent U.S.$1 million and saved almost U.S.$2.5 million over local prices. While the lack of a specific government budget line item for contraceptives and the announcement of the government's austerity budget in 2006 lead the MOH to only have funds to procure 53 percent of its annual contraceptive needs, it intends to absorb responsibility for 100 percent of its contraceptive needs by 2010. Total budget for contraceptive procurement is $1 million per year.	• The average public sector contraceptive consumption increased by nearly 50 percent from about 117 thousand CYP per year during 2000–2002 to about 174 thousand CYP per year during 2004–2006.
Honduras **$1,065,000**	• 80% of facilities had all methods available on the day of visit.	• Personnel responsible for management of contraceptive supplies in the regional and central warehouses were trained in the automated inventory control program. • The SOH has increased public sector coverage in recent years, from 35	• In 2000, the Honduran Congress passed Legislative Decree 34-2000, the Equal Opportunities for Women Law, which requires the government to guarantee every woman the right to exercise her reproductive rights and freely	

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
		percent in 1996 to 41 percent in 2001. This increase in coverage has mostly served women in the lowest socioeconomic segments of the population. • System Design: The LMIS has been automated at the central and regional levels.	decide the number and birth spacing of her children. The law also focuses on preventing adolescent pregnancies through enhanced sexual and reproductive health IEC programs and provision of FP counseling services. • In 2002, the National Institute of Women (INAM), a governmental institution, developed an unprecedented policy titled The National Policy for Women, which includes the First National Plan for Equal Opportunities, 2002−2007. This is the first public policy ever approved that requires the government to expand and strengthen FP services and counseling in order to guarantee that men and women can fully exercise their reproductive rights. This policy and plan, made official by the president through Executive Decree 15-2002, requires the government to reduce maternal and child mortality rates as well as transmission of HIV. Moreover, in June 2006, INAM signed a cooperative agreement with the SOH to implement health actions described in the National Policy for Women. • There is an active contraceptive security committee that is supported by Ministerial Decree. • Funding: By 2002, both the	

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
			Secretariat of Health and ASHONPLAFA, the national IPPF affiliate, had covered 38 percent of their contraceptive needs. In 2004, the SOH procured approximately $300,000 worth of injectables, and financed and procured more contraceptives in 2005. In 2006, the SOH budgeted U.S.$1 million, which covers nearly 100 percent of its estimated contraceptive needs, and are planning to procure 100 percent of all needs in 2007.	
	Other (e.g., organizational strengthening, local organizations, etc.): Within the NGO sector, the Honduran Family Planning Association (ASHONPLAFA) is the main provider of FP services—covering a substantial 29 percent of all FP users. This NGO operates 24 clinics and has a well-developed, successful community outreach program with 1,631 community service distribution points. ASHONPLAFA also provides social marketing services and distributes contraceptives to hundreds of traditional commercial outlets. Through well-established social marketing programs, ASHONPLAFA and another major NGO player, the Pan American Social Marketing Organization (PASMO), have been vital in allowing access to affordable contraceptives in pharmacies and other traditional outlets.			
Nicaragua **$1,031,000**	• Product availability increased from 8% to 94% from ’01 to ’05.	• System Strengthening: 100% of facilities received their requested quantity in ’05 (up from 79%). 100% of the 17 regional levels accurately aggregate logistics data. • System Design: A well functioning supply chain for contraceptives exists in Nicaragua. In 2005, contraceptives and essential drugs became part of an integrated supply chain.	• The Nicaraguan Constitution explicitly guarantees the right to reproductive health and universal access to basic health services. The National Health Plan (2004–2015) calls for reducing unmet need for FP and includes unmet need as a performance indicator. The new National Sexual and Reproductive Health Program document will serve as a guide for the future delivery of quality RH services. This document is being published during a period of health sector reform; it can help protect FP resources and priorities in the face of expected structural	• The average public sector contraceptive consumption increased by 10 percent from about 215 thousand CYP per year during 2000–2002 to about 238 thousand CYP per year during 2003–2005.

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
			changes throughout the MOH. In addition, the Maternal Mortality Commission and the Contraceptive Security (CS) Committee actively address CS issues. • USAID and UNFPA are the main donors of contraceptives to the country and to the MOH. In 2006, for the first time, the MOH agreed to purchase U.S.$9,000 worth of condoms, which will be bid and procured locally; USAID and UNFPA will provide 69 percent and 31 percent of the remaining contraceptive needs, respectively. These organizations are planning to donate contraceptives to cover demand through at least the first quarter of 2008 (UNFPA) and possibly through the end of 2008 (USAID). • Using a draft phase-down plan which will be completed shortly, the MOH will begin to procure contraceptives—2 percent in 2006, 16 percent in both 2007, 19 percent in 2008, and 20 percent in 2009—depending on the total USAID contributions per year. The phase-down plan will help prepare the country for the decline in donations and for sustained contraceptive availability after 2008.	
	Other (e.g., organizational strengthening, local organizations, etc.): The Nicaraguan Social Security Institute (SSI), which is one of the most innovative social security schemes in the Latin American and Caribbean region, covers 10 percent of all primary health care needs through its provision of health services to its beneficiaries, most of whom live in urban areas. SSI contracts with private medical providers known as			

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
	provisional medical companies (EMPs). The EMPs function as private businesses and are located in both private and public health facilities that provide maternal and child health care to beneficiaries who receive FP during their reproductive years.			
Paraguay **$732,455**	• Availability of all resupply methods at least 94% from '01 to '05.	• As of 2006, 92 percent of SDP's were utilizing stock cards for record keeping. Recordkeeping accuracy increased from 9% ('05) to 48% ('06). • In May 2006, the MOH signed an agreement with UNFPA that set up a procurement mechanism for contraceptives with Government of Paraguay (GOP) funds. Another memorandum of understanding will also be signed shortly between the GOP, USAID, and UNFPA that commits the GOP to gradually assume full financial responsibility for contraceptive procurement by 2009.		• Established budget line item for contraceptives. • The Contraceptive Security Strategy and Implementation Plan (2006– 2010), which was approved by the National Council for Reproductive Health in May 2006. This plan includes various indicators that will help monitor and evaluate progress toward achieving sustained CS in Paraguay. • Funding: In May 2006 Paraguay's Congress sanctioned a new law entitled Funding of Reproductive Health Commodities and Safe Birth Kits, which directly earmarks funds to procure reproductive health commodities, including contraceptives. This groundbreaking law guarantees full funding for all MOH reproductive health and FP supplies on the basis of

Country & $ spent	Product Availability	Logistics Systems Performance/ Systems Design/Strengthening	Commodity Security	Contraceptive Consumption
				projections of future needs; this goes further than most other countries in the LAC region toward sustaining contraceptive availability by ensuring funding even when the demand for contraceptives continues to grow.
	Other (e.g., organizational strengthening, local organizations, etc.): The 2004 Reproductive Health Survey revealed that the private sector plays a predominant role in Paraguay's contraceptive market. Private-sector provision accounted for 61 percent of the market in 2004, with pharmacies serving 50 percent of contraceptive users. Paraguay's pharmacies offer commercial and social marketing brands spanning a wide price range, making them affordable for most consumers. The presence of social marketing brands has been possible in part through USAID's support to PROMESA, an NGO working in FP, and more recently, PSI/Paraguay, which provides a wide range of contraceptives in private pharmacies.			

APPENDIX 8

SUMMARY OF HIV/AIDS SUPPLY CHAIN INTERVENTIONS IN NINE SUB-SAHARAN AFRICAN COUNTRIES

Summary of Supply Chain Interventions for HIV/AIDS Commodities in Nine Sub-Saharan African Countries

Country	Assessments / M&E	Product Selection	Forecasting Quantification	Procurement	Warehouse Mgmt	Logistics System Design, LMIS & ICS Imple-mentation	Policy & CS	Performance Improvement
Kenya	▪ Site Readiness for ART ▪ LSAT ▪ LIAT	▪ HIV tests ▪ Lab supplies	▪ HIV tests ▪ ARV drugs ▪ Lab supplies ▪ STI/OI/TB drugs	▪ HIV tests ▪ Lab supplies	▪ Manage HIV tests, STI/TB drugs ▪ Support for ARV/OI drugs	▪ HIV tests ▪ ARV drugs ▪ TB drugs ▪ OI drugs	ART National Policy	SOP development and TOTs for HIV test, ARV and TB drug systems rollouts
Nigeria	▪ Site Readiness for ART ▪ LSAT		▪ HIV tests ▪ ARV drugs			▪ HIV tests ▪ ARV drugs		
Tanzania	▪ Site Readiness for PMTCT and ART ▪ LSAT ▪ LIAT		▪ HIV tests ▪ ARV drugs ▪ STI drugs	▪ HIV tests ▪ ARV drugs	▪ Support for all HIV/AIDS commodities	▪ HIV tests ▪ ARV drugs ▪ TB, OI, STI drugs through ILS		TOTs for Integrated Logistics system rollout in pilot provinces
Uganda	▪ Site Readiness for ART ▪ LSAT	▪ HIV tests ▪ ARV drugs ▪ Lab supplies	▪ HIV tests ▪ ARV drugs ▪ Lab supplies ▪ STI/OI/TB drugs		▪ Support for all HIV/AIDS commodities	▪ HIV tests ▪ ARV drugs ▪ TB drugs	National HIV Testing & Counseling Policy	Development of SOPs for HIV tests and ARVs and support for system rollout

Country	Assessments / M&E	Product Selection	Forecasting Quantification	Procurement	Warehouse Mgmt	Logistics System Design, LMIS & ICS Implementation	Policy & CS	Performance Improvement
Zambia	▪ Mini-LIAT	▪ HIV tests ▪ ARV drugs ▪ Lab supplies	▪ HIV tests ▪ ARV drugs ▪ Lab supplies	▪ HIV tests ▪ ARV drugs	▪ Support for all HIV/AIDS commodities	▪ HIV tests ▪ ARV drugs		SOP development and TOTs for HIV test, ARV drug system rollouts
Zimbabwe	▪ Site Readiness for ART ▪ LSAT ▪ LIAT		▪ HIV tests ▪ ARV drugs	▪ ARV drugs	▪ Outsource and support HIV tests and ARV drugs	▪ HIV tests ▪ ARV drugs ▪ OI drugs		Suppport for training on pilot system rollout for HIV tests and ARV drugs
Ghana	▪ Site Readiness for ART		▪ HIV tests ▪ ARV drugs			▪ HIV tests ▪ ARV drugs		SOP development and TOTs for HIV test, ARV drug systems rollouts
Malawi	▪ LIAT					▪ HIV tests		SOP development and TOTs for HIV test system rollouts
Mozambique			▪ ARV drugs	▪ ARV drugs	▪ Support for ARVs			

For more information, please visit deliver.jsi.com.

DELIVER

John Snow, Inc.

1616 Fort Myer Drive, 11th Floor

Arlington, VA 22209 USA

Phone: 703-528-7474

Fax: 703-528-7480

deliver.jsi.com