



USAID | DELIVER PROJECT

Task Order I Project Completion Report: October 2006–March 2012



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USAID | DELIVER PROJECT, Task Order 1

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Cover Photo: A logistics worker checks inventory at a health facility in Nepal, where the USAID | DELIVER PROJECT has provided technical assistance to improve supply chain systems.

USAID | DELIVER PROJECT

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Contents

- Acronyms..... v
- Executive Summary ix
- System Improvements Increase Data Visibility and Product Availability..... xi
- Task Order I Overview 1
 - New Business Model..... 2
- Improve and Strengthen In-Country Supply Systems 5
 - Supply Chain Strengthening..... 5
 - Human Resource Development..... 9
 - Strengthening In-Country Commodity Security 11
 - Improving Advocacy and Collaboration..... 15
 - Knowledge Management..... 19
 - Improve USAID’s Provision of Commodities for Programs 21
 - Continuation and Sustainability 25
- Appendices
 - A. Performance Monitoring and Evaluation Plan..... 27
 - B. Detailed Discussion of Select Indicators..... 34
 - C. Task Order I Commodity Distribution 44
 - D. Task Order I Presence Countries 50
 - E. Task Order I Partners 52
 - F. Task Order I Local Partnerships 56
 - G. Task Order I List of Publications 58
- Figures
 - 1. Percentage of Facilities in Presence Countries Reporting during FY2007–2011 6
 - 2. Stockout Rates for Injectables, FY2007 to FY2011 7
 - 3. Project-Presence Countries Including Contraceptives on Their National Essential Medicines List..... 12
 - 4. Percentage of Facilities Reporting, FY2007–FY2011 38
 - 5. Stockout Rates for Oral Pills, Injectables, and Male Condoms, FY2007–FY2011 39
- Tables
 - 1. USAID | DELIVER PROJECT Contraceptive Security Tools and Analyses 17
 - 2. Range of Medical Equipment Procured under TO I 22
 - 3. Summary of On-Time Shipments over Time 23
 - 4. Forecast Error Rates by Product, 2007–2010, Measured in Mean Absolute Percent Error (MAPE) 35
 - 5. Forecast Error Rates in Ten USAID | DELIVER PROJECT Countries 36
 - 6. Number of People Trained by Country, FY2007–FY2011 41
 - 7. Trainings by Level, All Reporting Countries Combined, FY2007–FY2011* 42

8. Project's Partners and Activities	52
9. In-Country Partnerships.....	56

Acronyms

AIDS	acquired immunodeficiency syndrome
ALAN	American Logistics Aid Network
APHA	American Public Health Association
ASHONPLAFA	<i>Asociación Hondureña de Planificación de Familia</i>
ASTMH	American Society of Tropical Medicine and Hygiene
CAR	countries-at-risk
CARhs	Coordinated Assistance for Reproductive Health Supplies
CAUSA	Crown Agents USA, Inc.
CCB	Change Control Board
CCP	Central Contraceptive Procurement
CPT	Contraceptive Procurement Table
CS	contraceptive security
CSCMP	Council of Supply Chain Management Professionals
CSL	Commodities Security and Logistics Division (USAID)
CYP	couple-years of protection
DEC	Development Experience Clearinghouse (USAID)
DFID	Department for International Development (UK)
DLI	Development Leadership Initiative
DTTU	Delivery Team Topping Up
EDI	electronic data interchange
EML	essential medicines list
ERP	Enterprise Resource Planning
ESAMI	Eastern and Southern African Management Institute
EUV	End-use verification
FMOH	Federal Ministry of Health
FY	fiscal year
G8	Group of Eight
GFATM	Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria

GIS	geographic information system
HIPNet	Health Information and Publications Network
HIV	human immunodeficiency virus
HPI	Health Policy Initiative
HSC	Health Science College
HUTAP	Howard University Technical Assistance Project
IAPHL	International Association of Public Health Logisticians
IFHP	Integrated Family Health Programs
ILS	Integrated Logistics System
IPPF	International Planned Parenthood Federation
IQC	Indefinite Quantity Contract
IUD	intrauterine device
JSI	John Snow, Inc.
LAC	Latin America and the Caribbean
LIAT	Logistics Indicators Assessment Tool
LMIS	logistics management information system
LQAS	Lot Quality Assurance Sampling
LSAT	Logistics System Assessment Tool
MAPE	median absolute percent error
MDG	Millennium Development Goal
MIS	management information system
MIT	Massachusetts Institute of Technology
MOH	Ministry of Health
MOHFW	Ministry of Health and Family Welfare
MSH	Management Sciences for Health
NEML	National Essential Medicines List
NEWVERN	(USAID previous automated ordering, processing, and financial tracking system)
NGO	nongovernmental organization
OJT	on-the-job training
PAI	Population Action International
PASMO	Pan-American Social Marketing Organization
PATH	(acronym only)

PEPFAR	President’s Emergency Plan for AIDS Relief
PMI	President’s Malaria Initiative
PMP	Performance Monitoring & Evaluation Plan
PMTCT	preventing mother-to-child transmission
PPMR	Procurement Planning and Monitoring Report
PPMRm	Procurement Planning and Monitoring Report malaria
PRISMA	<i>Proyectos en Informática Salud Medicina y Agricultura</i> (Peru)
PSZ	Pan-American Social Marketing Organization
RFP	Request for Proposal
RH	reproductive health
RHCS	reproductive health commodity security
RHI	Reproductive Health Interchange
RHSC	Reproductive Health Supplies Coalition
RIDI	Regional Institution Development Initiative
PSZ	Population Services Zimbabwe
RTT	Ralit Total Transportation
SCCT	Supply Chain Costing Tool
SCM	supply chain management
SCMS	Supply Chain Management Systems (project)
SDP	service delivery point
SOP	standard operating procedure
SPARHCS	Strategic Pathway to Reproductive Health Commodity Security
STTA	short-term technical assistance
TO	task order
TOC	Technical Oversight Committee
UNAN	National University of Nicaragua
UNFPA	United Nations Population Fund
USAID	U.S. Agency for International Development
USG	United States Government
WHO	World Health Organization

Executive Summary

From 2006 to 2012, the USAID | DELIVER PROJECT, through its work under Task Order 1 (TO1), improved the availability of essential health supplies in USAID-supported countries. To accomplish this, the project used global and regional advocacy; in-country system strengthening; and procurement and delivery of contraceptives, condoms, and other health supplies. The project's international advocacy helped bring commodity security to the forefront of reproductive health commodity donor discussions. TO1's work contributed to narrowing the gap in financing available for reproductive health supplies; and improved the efficiency of supply chains that deliver these life-saving products, making commodity logistics part of any serious discussion of program sustainability and success. Country-level logistics system improvement and commodity security strides bolstered data visibility and product availability, helping health programs meet the needs of the clients. On behalf of USAID, the project established a state-of-the-art procurement and distribution operation that manages the supply chain for USAID-funded contraceptives and other essential health products, improving their availability in countries throughout the world.

During Task Order 1, the project received U.S.\$7.8 million¹ in core funds and \$31.1 million in field funds. The project used these to provide technical support to 22 countries and to operate offices in 17 countries. With USAID's continued investment and commitment, the availability of family planning commodities and essential medicines improved in all these countries. System strengthening efforts used innovations in data capture and management to foster greater visibility down to the service delivery point.

More effective coordination between global partners and host country ministries of health helped to increase the funds available for procurement, which applied greater pressure to improve supply chain performance and reduce product stockouts. In addition to technical assistance funding, USAID provided funds to establish and run the global supply chain for contraceptives and other health supplies.

As a result, USAID, John Snow, Inc., and the USAID | DELIVER PROJECT are recognized as global technical leaders in public health supply chain strengthening and commodity security. The project has become the go-to organization for public health supply chain expertise and for information and technical support to drive decisionmaking. This technical leadership has been a catalyst for change and has made a lasting impact on the international agenda for reproductive health and contraceptive security.

¹ In this document, all dollar amounts are in U.S. dollars.

System Improvements Increase Data Visibility and Product Availability

Through TO1, USAID's investments in system design and implementation, application of appropriate innovations, and continuous project support to in-country programs helped sustain improvements in reporting systems and overall product availability, down to the last mile. Impressive improvements in data availability increased supply chain visibility down to the service delivery point in Rwanda, Malawi, Zambia, Ethiopia, and Zimbabwe—all these countries significantly improved their product availability. Innovative supply chain solutions, such as Zimbabwe's Delivery Team Topping Up (DTTU), have had a positive impact locally and have produced models that are being replicated in other countries. To promote sustainability, Tanzania's Integrated Logistics System (ILS) Gateway shows the value of planning on a national scale, from the beginning. In Paraguay, focused technical assistance promoted product availability, supporting the increase in the use of modern family planning methods by ten percent in four years.

At the global level, the project's Procurement Planning and Monitoring Report aided donor decisionmaking by providing data and analysis of stock status in 22 countries, driving over 90 interventions to address critical stock needs. Many of these successful approaches in family planning were applied to other product categories, illustrating the leadership role of family planning logistics.

Human Resource Development

Task Order 1 successfully implemented far-reaching programs that improved and strengthened in-country supply systems, applied innovations, and built human resource capacity to improve data visibility and product availability. The project helped countries design or redesign supply chains, taking into account their human resource capacity; strengthened human resource capacity through pre-service and in-service training and other complementary interventions; and supported commodity security by training and mentoring national counterparts and creating logistics management units. In addition to these critical country-specific interventions, the project made significant gains in creating and fostering international networks of public health logisticians, such as the International Association of Public Health Logisticians (IAPHL), furthering the professionalization of logistics management, and building a network of regional training providers that will remain active long after the project ends.

Commodity Security: From the Back Room to the Board Room

By strategically engaging global and regional partners in conversations about contraceptive security, the project encouraged the inclusion of contraceptive security (CS) on the agendas of major international donors and other technical partners, bringing the subject of logistics management from the *back room to the board room*. The project brought CS to the attention of decisionmakers by collaborating on research, participating in working groups, gathering and sharing data through the

Procurement Planning and Monitoring Report (PPMR) to inform donor supply decisions, and working at the country level to implement CS interventions and demonstrate results. The project encouraged the sharing of technical concepts at international conferences and the dissemination of many of the project's tools, concept papers, and other materials, with partners throughout the globe. At the country level, to maximize sustainability, the project supported and strengthened policy environments to promote CS, engaging stakeholders and working closely with local partners to develop a specific approach for each country.

Improved Availability of USAID-funded Public Health Commodities

The award of TO1 marked the first time that USAID had outsourced the procurement of contraceptives to a private or nongovernmental organization; they trusted JSI to conduct international competitive tenders, and to award and manage vendor contracts on their behalf. This decision was validated when JSI helped USAID increase the products available to end users, resulting in a 50 percent increase in the value of commodities procured and shipped during the life of the task order—in five years, shipping more than \$419 million in commodities to 42 countries. In addition to this increase in volume, the number and types of items procured expanded beyond contraceptives, to include a wide range of public health products: from essential medicines, to vaccines, to hospital equipment. In 2009, the project showed flexibility and responsiveness when asked to be responsible for warehousing and freight forwarding services, enabling the project to more effectively manage and coordinate all aspects of the supply chain.

Looking to the Future

Overall, TO1 achieved lasting impacts on global commodity security, generating data and analysis that promoted donor- and country-level decisions to improve product availability. Commodity logistics and product availability are recognized as critical elements for any public health program success. Country-level gains in data visibility led to improved product availability, demonstrating the key role of logistics management systems.

Despite these gains, challenges remain:

- locate new quality-assured suppliers of contraceptives
- streamline USAID's supply chain
- improve countries' ability to use their own or donors resources to forecast and source high-quality contraceptives, condoms, and other essential public health products
- strengthen a commitment to supply chain performance and accountability that helps countries identify and use public, private, and nongovernmental resources to meet those commitments.

Going forward, under the new Task Orders 4 and 5, the project will build on the work of TO1 to address these challenges.

Task Order 1 Overview

This USAID | DELIVER PROJECT, Task Order 1 (TO1), project completion report covers October 2006 to March 2012. This report describes the project's activities and the progress made to achieve its objectives; it also describes how the project, to support the agency's Global Health Initiative, is implementing USAID's vision for improving public health commodity availability.

The overall objective and component objectives for TO1 reflect those of the wider Indefinite Quantity Contract (IQC). The overall task order objective is to increase the availability of essential health supplies in public and private services.

The component objectives include—

- Improve and strengthen in-country supply systems (with a particular emphasis on last mile delivery).
- Improve advocacy and collaboration with global and regional partners for commodity security.
- Improve USAID's provision of commodities to programs.

To meet these objectives, the project noticeably improved product availability in project-supported countries and improved data visibility throughout the supply chain by emphasizing design and implementation of logistics management information systems (LMIS) and increasing reporting rates and data accuracy. More reliable data improves availability and the ability of systems to quickly respond to any problem. These improvements were seen at both the national level in countries that include Rwanda, Ethiopia, and Zambia; and, at the international level, through the 90-plus donor interventions resulting from the project's Procurement Planning and Monitoring Report (PPMR). System-wide human resource capacity increased in all the project intervention countries, as did critical partnerships with local government, and non-profit and private sector stakeholders. Strengthened international partnerships brought focused attention to commodity security, consolidating previous advocacy successes and positioning the global community for continued achievements in ensuring contraceptive security (CS) for reproductive health supplies. Recipient countries depended on the availability of USAID-funded contraceptives and other health supplies procured and distributed by the project.

Over the life of the project, Task Order 1 received \$7,811,074 in core funds and \$31,129,640 in field funds. In September 2010, USAID awarded Task Orders 4 and 5 to JSI; TO4 focuses on technical assistance for improved commodity security, and TO5 manages USAID's global supply chain for public health commodity procurement and distribution. Because of an overlap in timing, mandate, and funding for TO1 and TOs 4 and 5, several activities in the first year TO4 workplan were implemented with the remaining funding from TO1. In addition, changes in the approach to management, procurement, warehousing, and freight forwarding—mandated under TO5—were implemented and supported by TO1 funding during its last year.

New Business Model

During TO1, the project aligned its work under several general principles, called a *new business model*. These principles—using innovative approaches, using local hires for implementation, strengthening local capacity through partnerships, and building on the successes of family planning—support the overall sustainability of the project’s system strengthening and commodity security work. This approach, well aligned with USAID’s Global Health Initiative, ensured a smooth transition to that framework after it was announced.

The project continued to introduce new ideas when supporting in-country supply chain system strengthening. Examples of project innovations include the newest applications of mobile phone technology; integrated automated LMIS; and, in several countries, new applications of tried and tested paper-based LMISs. It also includes the adaptation and application of commercial best practices for supply chain management for the public health setting, such as network optimization and supply chain integration, both as project *firsts* and as a roll-out of previously developed innovations. Many of these innovations focus on promoting data-based decisionmaking along the entire supply chain.

The project demonstrated its commitment to sustainability by strengthening local and regional capacity through partnerships with local organizations and building the capacity of its local staff. In addition to partnering with regional training institutes, the project established pre-service training programs in several countries; collaborated with local nongovernmental organizations (NGOs) in designing and implementing improved logistics systems; sought inputs on critical research; and worked with local organizations to advocate for commodity security. In addition to civil society partnerships, the project increasingly engaged private-sector partners in program implementation. In addition, one of the great strengths highlighted in USAID’s mid-term evaluation of TO1 was the project’s success in mentoring and developing its local professionals. The project employed many host- and developing-country nationals in the field as country directors and key technical staff. During the project, the number of technical national staff in each office increased, reducing the need for short-term technical-assistance (STTA) from the U.S.

The project leveraged subcontractor capacities, through both on-site staff and STTA. TO1 often used subcontractor expertise for specific projects and assignments. Abt Associates assisted in developing the supply chain costing tool; and with application of the tool in Zambia, Zimbabwe, and Nigeria. PATH and Crown Agents USA, Inc. (CAUSA) seconded to the Procurement team senior procurement staff for ongoing leadership and technical expertise. The Manoff Group, Inc., working onsite, supported the project’s knowledge management group. Staff from 3i Infotech, also working onsite, helped develop and maintain the management information system (MIS) software. PATH worked with the project offices in Bangladesh and Pakistan, providing technical assistance for contraceptive procurement. Llamasoft was responsible for the Supply Chain 2020 work; Ralit Total Transportation (RTT) and Transaid assisted with the warehousing and transport, and VillageReach provided input for the last mile distribution analysis and data capture.

The project also applied many of the tools and approaches developed during years of working in the family planning sector to new technical areas and products. The success of the PPMR led to the launch of the Procurement Planning and Monitoring Report for malaria (PPMRm), which gives international donors, in the malaria world, the same visibility into product supply trends as those in the reproductive health world. The analysis showing the savings generated by the Delivery Team Topping Up (DTTU) for family planning products in Zimbabwe resulted in an expanded model for

other commodities to combat malaria and tuberculosis and to provide primary health care. Through these, and other examples, the project continued to *lead from family planning*.

The following sections describe the project's efforts to meet the objectives of the contract and the requirements of the new business model. Several key indicators of program success address overall system performance and capacity building through human resource strengthening. For the project's complete Performance Monitoring Plan, see appendix A.

Improve and Strengthen In-Country Supply Systems

Task Order 1 successfully implemented far-reaching programs to improve and strengthen in-country supply systems by building human resource capacity to improve product availability. All project technical assistance centered on two system strengthening goals: (1) improve the country's ability to forecast, finance, procure, and deliver a range of essential public health supplies; and (2) strengthen local capacity to design, operate, and manage logistics systems; effect policy change; ensure the quality of supplies; and monitor and evaluate logistics system performance. Our interventions covered all aspects of the supply chain, including forecasting, financing, procurement, storage, distribution, inventory control, LMIS, and the disposal of medical waste; it also included the policy environment in which health commodity supply chains operate. Core-funded interventions focused on innovation, promoting data-based decisionmaking, and strengthening local capacity.

Project technical assistance helped countries design or redesign supply chains; strengthen human resource capacity through training and other complementary interventions; and support commodity security, particularly at the last mile. In addition to these critical country-specific interventions, the project made significant gains in creating and fostering international networks of public health logisticians, furthering the professionalization of logistics management, and elevating the practice to new heights. The project supported and strengthened policy environments to promote country-level commodity security, engaged critical stakeholders; and, to maximize sustainability, worked closely with local partners to develop a specific approach for each country. This technical assistance included work in reproductive health, family planning, HIV and AIDS, and laboratory supply chains.

The project's interventions yielded impressive results in product availability and increased local capacity to manage the complex logistics systems needed to ensure commodity security. Through TO1, USAID's investments in system design and implementation, application of appropriate innovations, and continuous project support to in-country programs helped sustain improvements in reporting systems and overall product availability down to the last mile.

Supply Chain Strengthening

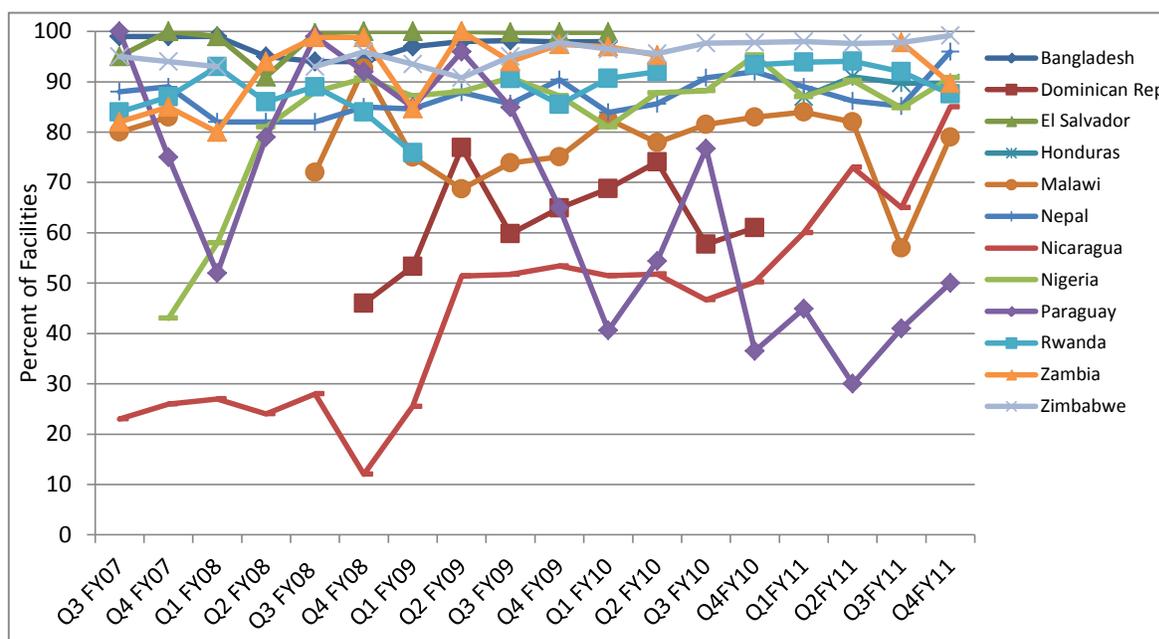
Data Visibility and Product Availability

Being able to access data on the supply status throughout the supply chain helps managers make timely decisions that can improve the flexibility and agility of public health supply chains, ultimately improving product availability for all health programs. The project supported USAID focus countries by promoting policies and programs that foster product availability for a range of commodities, particularly contraceptive security. TO1 country teams worked directly with counterparts at ministries of health and other key partners to provide ongoing technical assistance for national forecasting efforts, encouraging the collection and use of logistics data to inform procurement planning. As shown in figure 1, logistics data reporting rates in most countries increased or remained high—above 85 percent. However, in Paraguay, reporting rates dropped

dramatically at the end of fiscal year (FY) 2009 after contraceptives were integrated with other health commodities; rates have remained low.

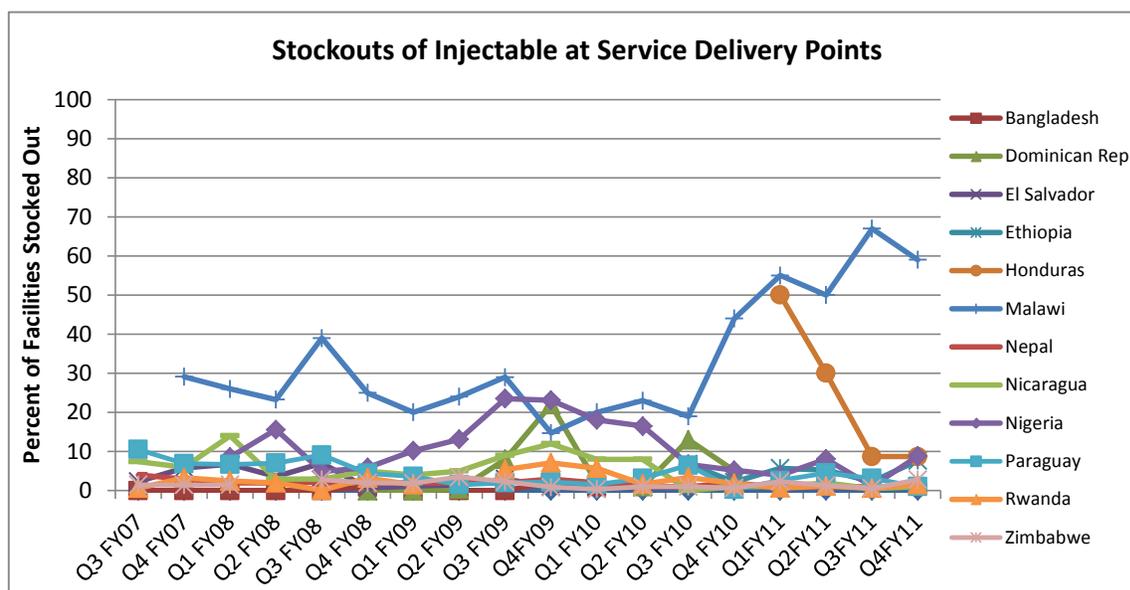
The project also saw an increase in countries routinely reporting on data from their service delivery points. Project support to countries often required collaboration with and mentoring of the Ministry of Health (MOH) counterparts on a daily basis; sometimes project staff were seconded to central-level MOH offices. This support to in-country supply chains—the logistics data availability and rationalized distribution networks—provided improved visibility throughout the supply chain; this led to increased accuracy of data for national-level planning (see appendix B). TO1 country assistance continuously advocated for contraceptive security and the technical assistance to support best practices and to sustain results.

Figure I. Percentage of Facilities in Presence Countries Reporting during FY2007–2011



Using service delivery–level data from the in-country LMIS, contraceptive stockout rates were routinely monitored in the 12 project–presence countries under TO1. These data are presented in appendix B for combined oral contraceptives, injectables, and male condoms from the middle of FY2007 to FY2011. These three high-demand resupply methods need a continuous, reliable supply to meet clients’ needs. In reporting countries, these methods are routinely available to clients at service delivery points (SDPs); for most of the methods during this time, stockout rates were at or below 10 percent for a minimum of seven out of nine countries. The data on injectables should be noted (see figure 2); they represent significant contributions to couple-years of protection (CYP) over the life of the project. Malawi, however, had high stockout rates for injectables because of continuing financing and policy issues.

Figure 2. Stockout Rates for Injectables, FY2007 to FY2011



N.B. Nigeria data represent availability in project focus states only (Bauchi, Kano, and Sokoto); the Bangladesh, Dominican Republic, and El Salvador field offices closed under TOI and data are no longer available.

In Rwanda, the project used geographic information system (GIS) spatial analysis to identify, map, and analyze stockout data throughout the country. This analysis showed that, although stockouts were occurring, increased access to SDP-level data enabled decisionmakers to quickly address problems. SDPs in Tanzania can use the ILS Gateway to transmit logistics data via mobile phone; they can also access the information through a controlled website. The automated system holds data that can be used to analyze district and zonal functionality, commodity availability, and reporting rates. Decisionmakers at all levels can now prevent the widespread emergency ordering that was a problem under other reporting systems. The project also began collecting a snap-shot of commodity availability by regularly applying the innovative End-use verification (EUV) data collection tool. The EUV tool, developed under the President’s Malaria Initiative (PMI), was originally used to monitor the availability of malaria commodities. However, in project-presence countries—including Ghana, Malawi, Mozambique, Tanzania, and Zambia—data collection teams added contraceptives to the list of tracer commodities to be tracked, allowing limited visibility into downstream supply availability.

Supply Chain Strengthening and Last Mile Delivery

The project’s work over the past years has focused on in-country supply chain systems strengthening, with an emphasis on last mile distribution. Project efforts at the field level and central level are working to strengthen this segment, finding new and innovative ways to do so, and engaging new partners in these activities, whenever possible. The increase in product availability summarized above reflects the outcome of project work in sustaining improvements in public sector supply chains.

Historically, the project has concentrated its limited resources at the central level, because without central-level policies, reliable national forecasts and procurements, quality system designs, and a well-functioning central warehouse, it is impossible to achieve contraceptive security. However,

contraceptive security starts with the client; therefore, where resources allowed, the project extended its activities down the supply chain to the end user. This complements the move toward decentralization, where lower levels have an increased role in decisionmaking.

With interventions ranging from direct delivery in Zimbabwe, to working with condom coordinators in Uganda to ensure products are available for high-risk groups, to using GIS analysis to identify and develop solutions to last mile challenges in Latin America and the Caribbean (LAC), the project consistently strengthened product availability at the last mile. In Malawi, when the public sector supply chain failed to deliver family planning and malaria supplies, the project was asked to set up a parallel supply chain, allowing products to reliably flow to health centers. In this case, taking a non-traditional approach made the difference in ensuring product availability.

In addition, innovative use of technology has played a critical role in last mile interventions in many countries—from using mobile phone technologies for data collection and coordination, to introducing an automated LMIS at district levels—the availability and management of commodities throughout health system were transformed. Bringing these and other innovations to scale in places like Bangladesh, Tanzania, Paraguay, and Zambia helps sustain the system improvements.

Text Box 1

Zimbabwe's Delivery Team Topping Up System: Improved Data Visibility Drives Product Availability

The Delivery Team Topping Up (DTTU) approach uses mobile warehouses (trucks) to routinely deliver directly from the central level to 1,400+ service delivery points (SDPs), topping them up with condoms, contraceptives, and selected HIV and AIDS commodities. With the DTTU system service delivery points (SDPs) do not place orders, but they are ensured low stockout rates. Stocks can be redistributed and SDPs can be supervised while high coverage and reporting rates are maintained because logistics reports are generated during delivery runs. Because they aren't required to calculate supply needs, health workers can focus on their clients.

Despite the tragic economic instability in Zimbabwe, the DTTU system in Zimbabwe is highly effective and has maintained stockout rates below 5 percent for all commodities in full supply. Before DTTU, stockout rates were more than 40 percent for most commodities. After the DTTU system started, many improvements were made, including the following:

- SDPs have consistently achieved >95 percent coverage. In the past, not all SDPs were covered, due, in part, to underreporting and transport bottlenecks.
- The success of the DTTU, especially the reliability of the management information system (MIS) data, has increased donor commitment to supporting the system for the next several years.
- The system has less training burden compared to conventional pull systems. Only 40 delivery team leaders are required to conduct deliveries across the entire country, compared with conventional pull systems that require at least two trained staff per health facility, for up to 1,400+ facilities.
- The process reduces the burden for SDP staff because they do not need to place orders for condoms and contraceptives. This gives clinical staff at SDPs more time to focus on their core responsibility of serving clients.

As a result of the DTTU and improved product availability, the contraceptive prevalence rate is rising; 58 percent of currently married women report using a modern method. Government-sponsored facilities are still the main providers of contraceptive methods; 68 percent of users are obtaining methods from the public sector, which is served by the DTTU system. From 1998 to 2005/2006, the fertility rate decreased from 5.4 to 3.8 births per woman. (ZDHS 2005–2006). The increased availability of contraceptives through the DTTU system directly contributed to this success.

Based on this successful intervention, the approach has been expanded to other commodity groups. In addition to condoms and contraceptives, the DTTU system now delivers preventing mother-to-child transmission antiretrovirals, HIV and syphilis rapid test kits, early infant diagnosis, and CD4 point of care reagent cartridges and consumables. This approach has also been replicated for tuberculosis and malaria products. This is a good example of how improvements achieved by the family planning system have facilitated further achievements by USAID for the President's Emergency Plan for HIV & AIDS Relief.

Human Resource Development

Task Order 1 activities strengthened human resource capacity throughout public health supply chains, working at all levels of the system, using a variety of capacity building techniques. More than 61,000 health workers and program staff in 17 project countries participated in country-specific supply chain management (SCM) training activities. The project also worked with USAID Missions and Commodities Security and Logistics (CSL) Division to support regional training institutions and to hold central-level trainings; using a combination of core and field funding, the project made the material accessible to a broader geographic audience. The project worked with host country counterparts to streamline processes and systems, if needed, and to build human resource capacity to ensure that these systems work.

Overall, the project used many different capacity building techniques to ensure lasting impact from the interventions for different target audiences and at different levels of the health commodity supply chain. Training was combined with other complementary approaches, including supportive supervision, pre-service training, and promoting the use of data for decisionmaking. The project trained more people at the service delivery level than at any other level.

In-Country Capacity Building

In-country capacity building took many forms. The key aspects are summarized below:

Logistics system design and rollout: TO1 worked with several countries to design or redesign their supply chains so they could support various public health programs. A major step in implementing a system design is to ensure that key staff can perform the new tasks specific to the new system. In countries like Tanzania, Nicaragua, Zimbabwe, and Zambia, newly designed health systems that were rolled out to all levels, required training of staff from central levels all the way down to storeroom clerks and health providers at the lowest levels.

Targeting a range of stakeholders in capacity building efforts: To support complex, multifaceted, commodity logistics systems for all our partner countries, the project engaged a variety of stakeholders—various types of health workers, logistics staff, policymakers, and others. Participants in capacity building activities included physicians and nurses in Tanzania, health promoters in El Salvador, mid-level program managers in Ghana, health assistants and district storekeepers in Nepal, MOH procurement staff in Bangladesh, and lecturers from the College of Health Sciences in Malawi.

Pre-service training: To make supply chain training more sustainable for future generations of nurses, pharmacists, and pharmacy technicians, the project worked with ministries of health and schools of health in Ethiopia, Malawi, Rwanda, and Zambia to integrate supply chain curricula into their programs. By the end of TO1, two colleges in Ethiopia, one college in Rwanda, and one college in Zambia had added the curricula.

Forecasting and procurement planning training: The project conducted quantification, forecasting, and procurement planning training activities in nine countries. In Ghana, supply chain professionals and policymakers were trained to use logistics data to quantify commodity needs and to inform procurement planning. Simulations and hands-on working sessions encouraged participants to learn from each other and to work together to ensure product availability in family planning and HIV and AIDS programs.

Logistics implications of health reform: The project also guided countries to better understand and manage the logistics implications of health reform. In Paraguay, seven MOHs, United Nations Population

Fund (UNFPA), USAID, and project staff were trained to use logistics for health reform. In countries like Nepal, procurement is a decentralized function—the project supported procurement training for district-level staff. In the Dominican Republic, the project and the MOH trained community health workers in how to integrate HIV and family planning.

On-the-job training: Throughout the system, the project used on-the-job training (OJT) for staff to help countries reinforce critical logistics management skills and concepts. In Bangladesh, upazilla and SDP-level logistics officers received periodic on-site refresher training on the web-based LMIS and other logistics management topics. This was an opportunity to regularly share important feedback on staff performance. In Zambia, the project supported ongoing OJT and supportive supervision through its provincial-level offices. This approach to capacity building builds motivation and promotes job satisfaction.

Staffing support to lower levels of the system: To maximize impact and build capacity at the lower levels of the health supply chain, the project seconded staff to regional and district levels in Bangladesh, Ethiopia, Nigeria, Rwanda, Zambia, and Zimbabwe. During this activity, the project mentored and coached government employees in effective monitoring and supervision practices, and assisted in data collection on the availability of products at the SDP level.

Distance learning tools: To reduce obstacles to some logisticians' participation in training courses—lack of funding, timing conflicts, and inability to travel or be out of the workplace—the project developed five sessions on SCM basics; they are available online and on a CD. Since the release in 2009, more than 940 CDs have been distributed; the website had more than 500 hits, which expanded access and reached a broader audience than traditional approaches.

Regional Institution Development Initiative

The Regional Institution Development Initiative (RIDI) improved the logistics practices of public health logisticians around the world by increasing the number of regional training institutions and improving their ability to design and deliver capacity building programs. For participants in this initiative, the project identified two regions—LAC and sub-Saharan Africa—and three organizations—*Proyectos en Informática Salud Medicina y Agricultura* (Peru) (PRISMA), a Peruvian nongovernmental organization (NGO); the Eastern and Southern African Management Institute (ESAMI) in Tanzania; and Bioforce, a Francophone training institution in Burkina Faso.

These institutions worked with the project to improve their training and technical skills, enabling them to teach the project's primary courses in supply chain management. Because of the initiative's success, the project was able to reduce the number of TO1-sponsored international courses. During the last year of the project, the project did not deliver any courses. As a direct result of the RIDI work, 427 people from many countries across both regions received training in English, French, and Spanish. The level of TO1 and USAID support required, both technical and financial, decreased over time, illustrating the success of the RIDI capacity transfer. Funding from non-USAID sources (course fees and other sponsor organizations) has increased. When the project ended, these institutions did not need core funding. Notably, by the end of the project, the organizations could conduct most modules without co-facilitation.

Fostering an International Community of Logistics Management Professionals

To expand the logistics professionals' ability to support improved product availability, the project used innovative approaches to develop an international community of public health logisticians, who work at global and country levels. The project's extensive interventions included a range of stakeholders and broadened the impact of project technical leadership in logistics management for public health commodity security.

Creating the IAPHL, an online community of practice, enabled logistics management professionals to develop lasting virtual relationships and was a vehicle for meaningful south-to-south technical exchange. These networks, a forum for identifying problems and generating solutions, further develops the skills and confidence of this important worldwide cadre of professionals. By the end of TO1, the IAPHL grew from 100 members to more than 700 members, in approximately 100 countries. The project, and partner organizations—including the World Health Organization (WHO), Project Optimize, Marie Stopes International, and USAID—provided technical expertise to the steering committee of *People that Deliver*, a collaborative initiative dedicated to the professionalization of the public health supply chain workforce in developing countries.

In addition, the project held 18 core-funded training events during the five years of TO1. The project developed four week-long modules on SCM and commodity security. Project staff conducted five international courses and four in-country courses. The project also held eight courses in Washington, DC, for 55 new USAID professional staff who were part of the Development Leadership Initiative (DLI) program and 57 USAID-Washington and mission staff. The courses, oriented toward contraceptive security, specifically covered the responsibilities of USAID health officers.

Strengthening In-Country Commodity Security

A key focus of the project's work was to strengthen in-country commodity security; and to promote the ability of every individual to choose, obtain, and use quality health commodities, such as contraceptives, whenever they need them. The project used a range of interventions to support enhanced government planning and implementation capacity.

To complement the system strengthening work described earlier, the project coordinated and advocated for local and donor partners to ensure that financing and policies were in place to meet the forecasted demand for contraceptives. The project also improved commodity security by making health logistics systems in all target countries more efficient.

Policy Environment

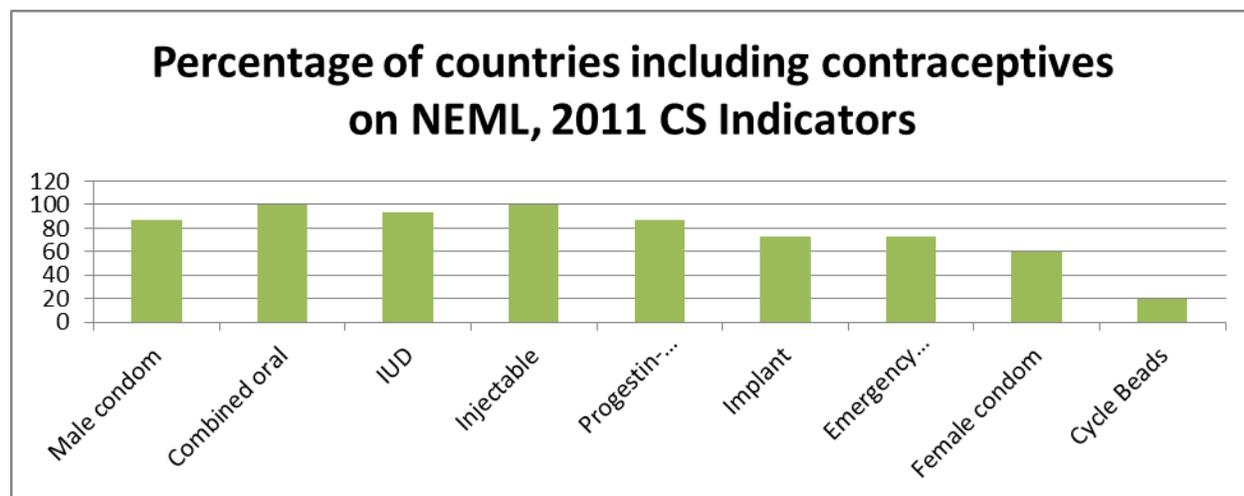
The project worked on many fronts to encourage a positive policy environment for contraceptive security. Country coordinating groups are one of the most effective mechanisms for developing CS strategies; they help generate essential commodity information that can be used for critical decisions on resource allocation, forecasting, procurement, and routine monitoring.

Of the countries where TO1 worked, except Pakistan and Nigeria, all have an in-country coordinating mechanism that met at least once during the last year of the project (most met three times or more). Furthermore, several countries are adapting the CS model for other commodities or other contextual factors, such as decentralized systems. For example, three countries—Ghana, Nepal, and Zambia—have strategies for HIV and AIDS commodity security.

Other efforts to foster a more enabling policy environment have focused on policies for procurement and essential medicines. In Paraguay, the project supported efforts to formalize a law that would help ensure a smooth transfer of funds from the MOH to UNFPA for procuring contraceptives. In Bangladesh, the project helped reduce a bureaucratic barrier related to pre-shipment inspection by proposing that suppliers conduct the pre-shipment inspection rather than requiring the Ministry of Health and Family Welfare (MOHFW) to do so. The project also assisted in drafting legislation that pertains to different aspects of drug policy and other aspects associated with the supply chain.

In Ghana, the project was a major contributor to a study of a proposal to include contraceptives in the National Health Insurance Plan, participating in stakeholder briefings, providing quantitative data about contraceptives, reviewing other data, and suggesting the inclusion of long-term methods. In addition, project in-country staff provided input for preparing and updating the Essential Medicines Lists (EML). Including contraceptives on national EMLs is a critical first step to ensure that family planning commodities are prioritized for procurement. According to the *Contraceptive Security Indicators*, the project-presence countries reported an average of seven out of nine methods on their National Essential Medicines Lists (NEML). Three countries (Liberia, Rwanda, and Zimbabwe) reported including all nine methods on their NEML (see figure 3).

Figure 3. Project-Presence Countries Including Contraceptives on Their National Essential Medicines List



Sharing Resources, Coordinating Funding, and Filling Gaps

Throughout its five years, TO1 identified opportunities to strengthen contraceptive security by mobilizing available resources. This included—

- identifying new sources of funding, such as the Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria (GFATM)
- reconfiguring existing sources of funding for new purposes
- facilitating stock transfers between countries to balance stock levels

- assisting when procurement responsibility transitioned to another source, including the government.

Text Box 2

Reliable Family Planning Supply Chain Delivers Better Health and Prosperity to Ethiopian Families

Family planning empowers couples to plan and maintain healthier families. In Ethiopia, the Ministry of Health is committed to improving access to family planning through programs that have, thus far, produced significant results, benefiting countless women and families. During the past six years, Ethiopia has seen a rapid increase in contraceptive use and a decline in the average number of births. Data shows that, in Ethiopia, between 2005 and 2011, the use of contraceptives by women of reproductive age almost doubled—from 15 to 29 percent. In the same period, the average number of children born to Ethiopian women declined from 5.4 to 4.8. Several other maternal and child health indicators showed significant improvements, as well.

Programs that support the supply chain, such as the USAID | DELIVER PROJECT, play an important role in ensuring continuous availability and a broader mix of family planning commodities. The project's efforts to support regional-level contraceptive security working groups throughout the country, and their critical role in the design and implementation of the Pharmaceutical Logistics Master Plan, contributed needed advocacy and hard data to ensure a robust supply chain for family planning commodities. With improvements in the supply chain, health facility stockouts of the most popular form of birth control (an injectable contraceptive that lasts three months) declined from 30 percent in 2006 to just 4 percent in 2010.

Task Order 1 supports the Ministry of Health in strengthening supply chain management and reducing stockouts, thus ensuring the availability of quality contraceptives for those who need them. The impact of a stronger supply chain is clear to Nurse Haileshet Bekele at Tulla Health Center in southern Ethiopia: "... I can say that in recent years, for example last year, we did not have any major stockout of contraceptives. We regularly monitor our stock in the facility and request supplies from the district health office on a regular basis for resupply... Because of a regular supply of contraceptive commodities, women are happy to get the service in their nearby health facility. It also improves service quality that clients can choose from different methods."

Without strong, well-managed logistics systems, delivery of needed health commodities would be greatly compromised—in some cases, impossible.

In Bangladesh, the project facilitated a six million-piece emergency USAID shipment of condoms through the Social Marketing Company to the MOHFW—expediting the shipment from a manufacturer in India and then helping to resolve a contractual violation issue between the MOHFW and their supplier. The project worked with the CS committee in Nicaragua to ensure an MOH budget line item for contraceptives, and supported decisionmaking by developing cost scenarios to help ensure future contraceptive purchases after donor support ended. In Ghana, TO1 helped USAID | Accra address an impending shortage of condoms by providing 21 million no-logo condoms to fill the gap, and worked with partners to secure long-term commitments and develop a Financial Sustainability Plan for contraceptive procurement.

In 2008, in a significant step for both contraceptive security and HIV prevention in Rwanda, local Global Fund stakeholders decided to fund contraceptives by providing a three-year commitment worth more than U.S.\$2.4 million from Round 7 funds. Global Fund financing had been used in the past to finance condoms in many countries; but, it is believed, Rwanda is the first country to fund contraceptives as part of its efforts to fight HIV and AIDS. This action results from advocacy at both the international level and the national level in Rwanda. At the national level, support for this

financing came from the highest levels in the MOH. The ministry—with support from the USAID | DELIVER PROJECT—has reliable estimates of financing needs for contraceptives, and this clearly identified a future funding gap, making the Global Fund support vital.

Measuring Contraceptive Security Progress in Countries

After many years of experience implementing CS strategies, monitoring progress at the country level was identified as a critical need. In support of and to help respond to this need, the project developed a set of standard CS indicators that have been collected annually since 2009; they measure the current state of CS in at least 35 countries. *Contraceptive Security Indicators* assess various contributors to contraceptive security, including financing for procurement, commodities offered, policies, coordination and leadership, and the supply chain. These indicators simultaneously highlight areas for intervention and draw attention to successes. For example, the Guttmacher Institute referenced CS Indicator findings in the article, “Benefits of Meeting the Contraceptive Needs of Ethiopian Women,” as well as in their International Perspectives in Sexual and Reproductive Health article, “Maximizing the Effectiveness of Sexual and Reproductive Health Funding Provided by Seven European Governments.”

In addition to the *Contraceptive Security Indicators*, the LAC region has also institutionalized a way to routinely measure contraceptive security. Initially, a set of indicators were developed, piloted, and then modified for application throughout the region. To facilitate ease of data collection and use by host country counterparts, without outside technical assistance, the project developed a guideline for how to collect and analyze these data to support decisionmaking. To date, data have been collected from Bolivia, Paraguay, Peru, Dominican Republic, Nicaragua, and Guatemala.

Improve Advocacy and Collaboration with Global and Regional Partners for Contraceptive Security

Throughout the life of the project, TO1 showed technical leadership, actively coordinating with global and regional partners to improve contraceptive security. By strategically engaging these partners in conversations about contraceptive security, the project helped elevate and ensure that contraceptive security (CS) was included on the agendas of major international donors and other technical partners. The project collaborated on research and participated in working groups, gathering and sharing data to inform donor supply decisions. In addition, the project provided partners with a much-needed reality-based perspective of country experiences, best practices, and continued challenges. The project built a strong knowledge management capacity, fostering the sharing of technical concepts at international conferences and disseminating with partners throughout the globe many of the project’s tools, concept papers, and other materials. To strengthen CS in non-presence countries or where funding was limited, TO1 disseminated information and best practices, and leveraged the project’s work to ensure the broadest impact of program interventions.

As a result, the USAID | DELIVER PROJECT is recognized as a global technical leader and the go-to organization for public health supply chain and commodity security expertise, and for information and technical support to drive decisionmaking. This technical leadership has been a catalyst for change and has made a lasting impact on the international agenda for reproductive health and contraceptive security.

Improving Advocacy and Collaboration

Supporting and Collaborating with Other Partners

The project successfully developed strong partnerships at the global, regional, and national levels to develop the skills and build the systems needed to effectively empower contraceptive security leaders. These alliances help shape and improve approaches to CS and improved commodity availability. Appendix E lists the partners and activities engaged in and supported by the project. In addition, the project's approach to CS, technical expertise, and materials continue to be relied upon and incorporated into numerous partners' trainings, advocacy efforts, and strategies.

Based on the project's understanding of the country context, the timely data it collects, and its ability to use the supply chain as a window into other issues that affect commodity security, numerous partners consider the project the primary source for information and evidence to drive advocacy and influence CS efforts. At the international level, the project can leverage the extensive work it does in-country and can translate it into policy and financial requirements, lessons learned, and best practices. This enables the project to be a powerful advocate on behalf of country programs and, ultimately, for end users. Several examples of improved advocacy and collaboration are presented below.

Reproductive Health Supplies Coalition

Throughout TO1, the project provided significant support to the coalition, participating in working groups, providing technical input and strategic guidance, and supporting the coalition's workplan and objectives. The project supported the coalition's conference, "Access for All: Supplying a New Decade for Reproductive Health," for more than 350 participants from 56 countries. The conference raised the international profile of reproductive health commodity security and marked the 10th anniversary of the 2001 Istanbul Conference, "Meeting the Challenge," which many credit with launching today's reproductive health commodity security movement. The USAID | DELIVER PROJECT is an important partner in these efforts; the project's activities and resources (*Contraceptive Security Indicators*, *Contraceptive Security Index*, Procurement Planning and Monitoring Report (PPMR), country examples) featured prominently in the conference and were the basis for numerous Reproductive Health Supplies Coalition (RHSC) activities. For example, the RHSC relied on *Contraceptive Security Indicators* data to inform the country pages and as part of their panel presentation on, "Access to Reproductive Health Supplies—Challenges, Barriers and Opportunities in Developing Countries," at the DSW Symposium at the World Health Summit 2011. In addition, project data provided much of the evidence for the coalition's report, *Reproductive Health Commodity Security: Leading from Behind to Forge a Global Movement*. The project also provided key data for the country pages, which are currently on the coalition's website. Through the PPMR, the project provided the data for the key Coordinated Assistance for Reproductive health supplies (CARh) decisions (see text box 3).

Text Box 3

Procurement Planning and Monitoring Report (PPMR) Data Supports Donor Response to Critical Stock Needs

The Procurement Planning and Monitoring Report (PPMR) is a critical tool that provides visibility into country-level stock issues for 22 countries. Designed as an early warning system to improve donor planning decisions, the report offers timely evidence to inform global donor coordination through the Coordinated Assistance for Reproductive health supplies (CARhs) group, which is dedicated to addressing country-level contraceptive stockouts and other stock crises. Data from the PPMR has resulted in 90 interventions by the CARhs to address critical stock needs in key countries. For example, when USAID in FY2011 responded to current or pending stockouts, the CARhs group used information in the PPMR to create 10 new shipments and expedite nine existing shipments. In addition, CARhs postponed or canceled four shipments (to avoid overstocking), and provided policy advice and technical assistance to two countries.

Information in the PPMR under Task Order 1 also resulted in stock transfers between countries, facilitated by CARhs members USAID and UNFPA. In FY2011, a transfer of 80,000 pieces of Jadelle implants (valued at approximately \$1.6 million) occurred between Rwanda and Burkina Faso, facilitated by UNFPA. The transfer alleviated large overstocks in the originating countries (which might have resulted in expiry of product without action), and helped to relieve or prevent stockout in the receiving countries.

Following the success of the PPMR under Task Order 1, the President's Malaria Initiative (PMI) facilitated the creation of a PPMR for ACTs under the USAID | DELIVER PROJECT Task Order 3. The new report became known as the PPMRm (malaria), and highlighted the leading role that family planning continues to play in developing innovative tools for other product categories.

RHInterchange

TO1 hosted the operation of the RHInterchange (RHI) from April 2010 until the RHI went live at United Nations Population Fund (UNFPA) in mid-January 2011. Since its creation in 2011, the project participated on the AccessRH Project Board, which helped support the focus on users and generated benefits for them; and provided structured and ad hoc critical user feedback on the RHI, which helped improve the service for all users. For example, the project helped UNFPA respond to a donor's interest in finding ways to reduce lead times through strategic support in forecasting and management decision support tools.

The project also provided advisory services on implementing the AccessRH concept, particularly related to business and the software development process and the focus on user needs and the importance of data visibility.

Project field offices gave both direct assistance and/or guidance to the RHI team for in-country data collection in Ghana, Ethiopia, Rwanda, Nepal, Honduras, Guatemala, and Burkina Faso. Drawing on established relationships, the project team organized technical meetings, provided background information, and participated as one of many interviewers for the RHI team. As a result, the RHI data helps the project with its commodity management activities, while enhancing donor collaboration and CS in these countries. In addition, project staff often identify errors or issues that enable RHI staff to approach the data provider, supporting improved information management and sharing by the data providers to the RHI.

United Nations Population Fund

As part of its new global strategy, the United Nations Population Fund (UNFPA) is undertaking reproductive health commodity security (RHCS) assessments and strategic planning in a number of conflict-affected countries—Angola, Rwanda, Haiti, Sudan, Liberia, Sierra Leone, Democratic Republic of Congo, and Senegal. The assessments have used a combined tool, based on the project's Logistics System Assessment Tool (LSAT) tool; and the Strategic Pathway to Reproductive Health

Commodity Security (SPARHCS) tool, which was jointly developed by the project and other partners. JSI staff have, to a large extent, carried out the work under a separate UNFPA contract, drawing on and disseminating project best practices for RHCS and strengthening coordination with USAID activities in-country. For instance, in Liberia, the UNFPA-funded assessment focused on other reproductive health commodities and built on an earlier USAID-funded assessment for contraceptives. In Mozambique, the JSI teams working with UNFPA improved coordination in-country with other partners, including the project office. Using USAID funding, the project also supported UNFPA by strengthening their approach to market segmentation and helping to update their general RHCS supply chain management overview training. These activities illustrate how USAID’s investment in commodity security leadership is generating additional dividends by agencies, such as UNFPA-funded activities that are based on and use USAID-developed technical resources to advance global contraceptive security.

World Health Organization

The project enjoyed successful collaboration with WHO on a pooled procurement study that resulted in other areas of technical cooperation, including recognition of similar strategic approaches to CS; work to jointly promote a set of standardized supply chain assessment tools for contraceptives, HIV and AIDS commodities, and other essential medicines; and enhanced country-level program coordination, notably in Zambia and Mozambique. The project also continued to represent the supply chain and CS perspective, as part of the WHO Implementing Best Practices Initiative. In addition, project staff traveled to Geneva to present to WHO and Global Fund staff a prototype costing tool—developed jointly by USAID, the project, the World Bank, and WHO—which analyzes the cost of the current logistics system and compares it to a number of system options for warehousing, transport, and inventory, taking into account customer service levels.

In recognition of the project’s work in developing supply chain costing tools and approaches, WHO asked TO1 to develop a methodology that could estimate the supply chain inputs required to achieve Millennium Development Goal (MDG) 5 in 49 low-income countries by 2015. Specifically, WHO asked the project for technical input in estimating the recurrent and capital cost requirements for the supply chain investments needed. The project developed a brief that WHO posted in the *WHO Bulletin*, as part of their advocacy in preparing for the July 2009 Group of Eight (G8) summit. A global supply chain cost of \$13 billion was estimated from 2009–2015 to support product availability, representing 5 percent of the total cost of attaining the MDG.

Generating Key Data through Tools and Analysis

To support collaborating partners, the project produced several tools and analyzes that have been applied widely to address issues or inform decisions. Table 1 describes these valuable contributions to global contraceptive security.

Table 1. USAID | DELIVER PROJECT Contraceptive Security Tools and Analyses

<p>Contraceptive Security Indicators</p>	<p>The project’s contraceptive security (CS) indicators are used by program managers, advocates, and decisionmakers as they track country progress toward CS. These indicators simultaneously highlight areas for intervention and draw attention to successes. The set of indicators offer a timely picture of the CS situation in a country, and the countries can routinely update them. The indicators and the data collected on the indicators from approximately 35 countries in 2009, 2010, and 2011 are on the project website.</p>
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Contraceptive Security Index	The project's <i>Contraceptive Security Index</i> is a powerful tool for information about CS and the interrelationships between program components, different sectors, and program outcomes. The index was first calculated and presented in 2003, then again in 2006; the <i>Contraceptive Security Index 2009</i> presents the latest update of those findings. A total of 64 countries are represented in the 2009 index; 50 countries have scores for all three indices to date.
Supply Chain Costing Tool	Beginning in 2009, to help countries better gauge supply chain costs, the project spearheaded an effort to standardize costing by developing a costing approach—the Supply Chain Costing Tool (SCCT). Thus far, the project has used the tool to cost supply chains in Zambia (2009), Zimbabwe (2009), and Nigeria (2010). To ensure long-term product availability, the supply chain costing tool provides critical data to help stakeholders advocate for investing in the supply chain.
SPARHCS Tool and SPARHCS Process Guide	The Strategic Pathway to Reproductive Health Commodity Security (SPARHCS) guide, published in 2005, is one of the most widely requested and used CS documents. It includes a framework for reproductive health commodity security and an assessment tool. The <i>SPARHCS Process Guide</i> was created after the project identified the need for a companion piece for the tool. It is a how-to manual that guides the reader on how to use a multi-stakeholder, collaborative process to implement SPARHCS in-country. The guide is widely used by partners to further their commodity security goals.
Global Information System Mapping of Contraceptive Security Data	By offering a visual display of data items, such as government financing for contraceptives and contraceptive methods offered, the maps are intended to encourage informed advocacy and decisionmaking. They present data in a way that stakeholders can easily identify their advocacy messages and programmatic needs.

Identifying Trends in Contraceptive Security

The project supports advocacy for improved product availability and commodity security by constantly monitoring the environment at the global and country level to identify new trends and to understand their consequences on product availability and commodity security.

Identifying key CS trends by analyzing CS indices: A longitudinal analysis of results from three rounds of the *Contraceptive Security Index* (2003, 2006, 2009) shows global-level improvements in all five components: health environment, logistics management, financing, contraceptive access, and contraceptive use. Most regions also improved their scores from 2003 to 2009. Of special significance, the lowest scoring countries from 2003 made the most progress in total scores by 2009, with the largest increases in sub-Saharan African countries.

Data driven advocacy and raising awareness: The project's strength in developing specific, topical, and timely advocacy messages that partners at the country, regional, and global levels can use is evident in the policy briefs produced periodically by the project. These include a series of briefs on using the Global Fund to help increase and diversify funding for contraceptives and condoms; this helped country stakeholders understand and maneuver the steps needed to leverage Global Funds and also encouraged global advocates to strengthen linkages between GFATM and contraceptive funding. The project used blogs—for example, the blog hosted by the Population Media Center—and listserves—like those through the Coalition—to encourage advocates to continue promoting the use of GFATM funding for contraceptive procurements. Other policy brief topics included one on Burkina Faso's use of multiple financing sources, in tandem, to fill gaps and level contraceptive funding; this was intended to encourage other countries to model its successes. A brief on CS for hormonal implants discussed trends in the demand for implants in selected countries, the cost of

implants compared with other methods, and possible issues for the supply chain management of implants.

Building a south-to-south exchange network in Latin America and the Caribbean: The project published several different types of publications to document eight years of USAID's Regional Contraceptive Security in Latin America. In 2003, USAID's Bureau for Latin America and the Caribbean (LAC) launched the LAC Contraceptive Security Regional Initiative to strengthen CS and to build a south-to-south exchange network that would help sustain countries where USAID donations and family planning technical assistance were being phased out. Today, the Regional Initiative brings countries together to share lessons and solutions, which are then translated into results nationally.

Organizing forums to strategize investment: The project contributed to the support of global advocacy and collaboration by helping to organize several high-profile events:

- Helped organize the “State of the Practice: Contraceptive Security in Latin America and the Caribbean,” held in Washington, DC, in October 2006.
- For managers and reproductive health staff, the project sponsored an eight-country regional interactive workshop on logistics in times of health reform.
- To widely disseminate best practices, the project developed panel presentations, poster presentations, and informational literature for the American Public Health Association (APHA) Conference, the President's Emergency Plan for AIDS Relief (PEPFAR) Implementer's Meeting, the Global Health Council Conference, the UAPS Conference in Arusha, and the XVI International AIDS Conference.

Knowledge Management

Over the life of TO1, the project's commodity security and supply chain management work evolved and became more complex, encompassing more products, more funders, and increased technical content. To support these changes, effective communications became a critical element for success. Through various channels, the project shared new ideas and fostered an exchange of ideas among policymakers, logistics professionals, and the broader public health community interested in the critical issues of CS and product availability for public health programs.

The project communications strategy emphasized the dissemination of the current methodological advances, best practices, and lessons learned. As the project engaged other donors and funders to mobilize resources for global RHCS, innovative approaches and technologies were well-documented to facilitate replication. The project website is a primary method for sharing and disseminating information. To share current and cutting-edge logistics information and practices from the commercial sector and academia, the USAID | DELIVER PROJECT publishes the supply chain management e-newsletter every quarter. The newsletter contains articles about the project's research and other up-to-date information about issues commonly faced by international public health supply chains, as well as highlights from innovations tried in other countries. In addition, the project actively participated in HIPNet by sharing resources and job aids related to branding and marking, editing, and translating documents.

Regional and Global Events

The project organized a stakeholders' meeting in Washington, DC, in November 2007, to outline the scope of a new update to the 2001 contraceptive funding gap analysis, which is widely used in

international CS advocacy efforts. In 2008–2009, the project contracted the Futures Institute, with input from other RHSC members, to update the gap analysis. In March 2009, the project finalized *Contraceptive Projections and the Donor Gap: Meeting the Challenges*. The project highlighted the findings at the June 2009 RHSC meeting in London and at the 2011 “Access for All” conference in Addis Ababa. To engage new donors and strengthen the commitment of existing donors, this helped raise awareness and highlight the shortfall between public sector demand for contraceptive supplies and the availability of donor resources to procure them.

At its Global Conference, held in Denver, Colorado, from October 5–8, 2008, the Council of Supply Chain Management Professionals (CSCMP), for the first time in its history, dedicated a full track to international public health and humanitarian supply chains. Entitled, “Matching Supply and Need in Resource-Constrained Settings,” this track was co-led by the USAID | DELIVER PROJECT and the Massachusetts Institute of Technology (MIT)-Zaragoza International Logistics Program. The conference was attended by more than 3,000 supply chain professionals, from 42 countries, and included more than 200 educational sessions, divided into 25 focus-area tracks.

Of particular note, on October 6, 2010, the project hosted “Critical Issues Series: Strengthening Human Resources for Supply Chain Management of Health Commodities.” This event brought together 19 speakers from 10 different organizations, including the CSCMP, Management Sciences for Health (MSH), MIT-Zaragoza Logistics Center, Georgia Institute of Technology, American Logistics Aid Network (ALAN), and PRISMA. Panels addressed optimizing policies and plans, strengthening workforce development, and increasing workforce effectiveness.

Improve USAID’s Provision of Commodities for Programs

Commodity availability is at the heart of the USAID | DELIVER PROJECT. The award of TO1 marked the first time that USAID had outsourced the procurement of contraceptives to a private or nongovernmental organization; they trusted JSI to conduct international competitive tenders, and to award and manage vendor contracts on their behalf. Independent reports validated the USAID decision to outsource, noting the success of the project’s procurement systems and the cost-saving and efficiencies it provides for the agency. The movement to outsource was transformative for USAID, representing a new way of doing business; the project designed its central procurement and supply operations services to achieve USAID’s vision. As a result, over the life of the project, the value of USAID commodity provision through TO1 increased approximately 50 percent—from \$78 million in FY2007 to over \$116 million in FY2011. This increase was due, in large part, to the expanded range of items procured, in addition to contraceptives; including products ranging from essential medicines, to vaccines, to hospital equipment. Through TO1, over the life of the project, more than \$419 million in commodities were shipped to 42 countries. See appendix C for detailed maps showing the TO1 commodity distribution.

When USAID needed emergency warehousing and freight forwarding services following the abrupt termination of its long-time freight forwarding contract, the project provided seamless services for the interim period. This was so successful that USAID asked the project to continue providing this service under TO5. TO1’s flexibility and responsiveness was a value-added service—managing the USAID contraceptive supply chain from end-to-end—enabling the project to effectively manage and coordinate all aspects of the supply chain. Close communication and collaboration with USAID gave the agency the visibility it needed to effectively oversee these procurement and distribution activities.

Support to USAID’s Central Contraceptive Procurement System

The project provided expertise in all aspects of procurement:

- managing procurement processes
- interacting with clients in the development of product specifications
- developing and evaluating Request for Proposals (RFPs) and negotiating with vendors
- meeting all USAID and United States Government (USG) requirements
- ensuring that the right product was purchased for the right price and under the right terms.

To complement these procurement services, the project’s Supply Operations team supported USAID’s Central Contraceptive Procurement (CCP) by processing orders for contraceptives and other public health commodities. Throughout the life of TO1, the team was responsible for issuing shipping instructions and release orders. They worked with manufacturers and the shipper on transactional reports, barcode label formats, and procedures. As another value-added service, the project managed funds, accounts, and invoices for both USAID and project contracts.

Direct Procurement Services

During the past five years, on behalf of USAID, the project issued RFPs for central procurement Indefinite Quantity Contract (IQC) for contraceptives. Other contracts were issued for a wide

variety of products—from hospital beds, to nutritional supplements, to sharps boxes—for a total value of over \$419 million for all product categories. Because USAID had the flexibility to outsource procurement services to the project for a wide range of health products, the project was able to increase the annual value procured, resulting in greater USAID support to public health programs worldwide. Table 2 illustrates the range of non-contraceptive items procured under TO1.

Table 2. Range of Medical Equipment Procured under TO1

Crib, infant warmer	Set, instruments for caesarean
Fetal Doppler, ultrasound	Surgical suction pump, electric
Reverse Osmosis System	Sphygmomanometer, pediatric
Stethoscope, adult, stainless	Bed, hospital, examination
Table, hospital, dissection	Electrocardiograph, Digital
Freezer, hospital, blood bank	Nebulizer, ultrasonic, aerosol

Procurement Excellence

Working with USAID, the project established a procurement excellence group to document strategies and best practices for contraceptive procurement for TO1.

Beginning in 2008, the project convened several experts' meetings on market analyses and procurement strategies for injectable contraceptives and oral contraceptives (including product specifications, quality assurance and standards, testing, and contract terms and conditions).

Participants included experts from USAID, PATH, FHI, UNFPA, industry groups, and manufacturers and other partner organizations with significant procurement and programmatic experience with key products. The project used the findings from these meetings to develop and finalize procurement strategies for the various central CSL commodities.

The project also worked with CSL and PATH to establish a Technical Oversight Committee (TOC) for procurement. The first of three TOC meetings for procurement was held in January 2010; participants included members from the public and private sectors with procurement expertise, and USAID and project staff. During these meetings, the group reviewed the staff qualifications, standard operating procedures (SOPs), and performance metrics used by the project; they then suggested ways to improve them. As a result, the project completed its own internal quality assurance audit. Based on this internal audit, the project revised its SOPs and work instructions, modified some of its work flows, and worked with USAID to implement a revised set of performance metrics. In addition, the TOC reviewed the particular challenges of procurement in our environment. The project and USAID are following up on recommendations for procuring non-standard items and supplier management.

On-Time Shipments

A timely response to requests for contraceptive assistance is an important measure of success for the CCP system. The project monitors responsiveness to clients by measuring on-time shipment rates, which are defined as shipments arriving within 30 days of the desired receipt date. Over the course of the project, the annual on-time shipment rate increased from 60 percent in 2005 to 77 percent in 2011 (see table 3).

During the project, all shipment or production challenges—such as contract or production issues, inventory availability, or product registration issues—were an opportunity to incorporate the lessons

learned at a strategic level, informing USAID’s and the project’s relationships with manufacturers and freight-forwarders.

Strategic approaches included—

- seeking multiply supply sources
- providing forecasting reports to suppliers for their production planning
- establishing an oral contraceptive registration task force
- evaluating target inventory levels
- evaluating emergency order patterns.

The project commissioned a report from a PhD candidate from Georgia Institute of Technology to recommend optimal inventory-level modeling and planning. In addition, the project’s procurement excellence activities addressed the issues of product supply, which included sourcing strategies to maximize product availability. In the early years of TO1, late shipments related to freight forwarding were operational challenges for the project. After the project was in control of the freight forwarding and warehousing elements of the supply chain, the project was better able to closely track all shipments in transit; and, monitor and regularly update shipping lead times. This helped to minimize the effects to on-time deliveries. See table 3.

Table 3. Summary of On-Time Shipments over Time

On-Time Shipments Summary*	
Fiscal Year	On-Time Shipments (%)
2005	60
2006	57
2007	73
2008	68
2009	62
2010	73
2011	77

* Until FY2008, on-time shipments were calculated by comparing the desired ship date to the actual ship date. In FY2008, shipments through the end of March were calculated that way; subsequent on-time rates have been calculated by comparing the desired receipt date to the actual receipt date.

Management Information System

Through the management information system (MIS), the project provided information that was used to coordinate the management of the commodity supply chain, including procurement, inventory management, order management, and shipping. Over the life of the project, TO1 developed, implemented, and maintained a complex MIS; making program data, procurement and shipping data, and financial information available to USAID around the clock. While there were challenges in the initial implementation of the MIS because of the conversion to an Enterprise Resource Planning (ERP) system; by mid-project, the MIS included all historical shipment data and current data. USAID/Washington and missions were given up-to-date information on commodity

shipments; promoting rational program planning and implementation, based on enhanced supply chain visibility.

The MIS has the following major building blocks:

The primary access point for worldwide access to information is the website and web-based reporting system (<http://deliver.jsi.com>); it includes access to the current and historical information about shipments of health supplies; information about the commodity security status of USAID-supported countries; reference materials on commodity security and logistics; as well as an intranet with numerous resources, tools, and templates that project staff use every day. The permission-based structure is appropriate for various audiences, including USAID/Washington, missions, project and procurement staff, recipients, affiliates, and the general public.

The underlying processing component, the ORION ERP system from 3i Infotech, is the foundation of the supply chain management system; it stores procurement and shipping data and is the essential tool box for the procurement and supply operations teams to collect, process, and distribute data related to the supply chain, including in-country delivery to the port or central warehouse.

The data warehouse combines historical shipment and order data with the current data from the ORION ERP and provides the data in support of the web-based reporting system.

The electronic data interchanges (EDI), with the Reproductive Health Interchange (RHI), and UPS share shipment data for coordinating aid and facilitating shipping with the freight-forwarder. This data is incorporated with other data to provide an accurate and thorough picture of the shipment status of an order.

After the MIS was established, the Change Control Board (CCB) met regularly to focus on day-to-day systems operations, status reports, bug fixes, and minor enhancements to ensure that accurate and timely information was available for decisionmaking. The CCB process ensured that USAID and other stakeholders could assess the business impact of individual issues and prioritize them to ensure that the most critical problems and enhancements were addressed first.

Continuation and Sustainability

As a direct result of USAID's investment in Task Order 1, the project has made a lasting impact on global commodity security. By generating the data and analyses that informed donor and country-level decisions, product availability improved—making contraceptives and other essential health commodities available for procurement and distribution. Commodity logistics and product availability are recognized as critical elements for a successful public health program. The gains that countries made in product availability and contraceptive security showed the key role of logistics management systems in promoting positive health outcomes.

While progress has been made in improved product availability during the past five years, much remains to be done. Procurement bottlenecks, distribution system failings, and supply chain integrity represent continuing challenges. The private sector needs to be more engaged and the appropriate technology needs to be leveraged to scale.

Moving forward, under Task Orders 4 and 5, the project will continue to address these challenges. The strategic approach to addressing human resource constraints implemented in TO1 will be expanded under Task Order 4; it will be continually reviewed to ensure that interventions keep up with the needs of evolving systems.

Energized by the “Access for All” conference on reproductive health commodity security, the project will continue to advocate for donor investments in improved logistics management systems that support commodity security; this will put critical health commodities into the hands of end users. Procurement and distribution systems developed under TO1 will be further streamlined under Task Order 5, with all aspects of procurement, order management, and distribution of USAID-funded commodities maintained under the task order. Strategies to mitigate the risk of supply chain disruptions are integrated in TO5's approach, with the goal of maximizing contraceptive availability for all recipients of USAID-funded products.

Appendix A

Performance Monitoring and Evaluation Plan

**Performance Monitoring and Evaluation Plan (PMP), USAID | DELIVER PROJECT, Task Order I
April 23, 2009**

Outcome	Desired Result	Performance Indicator	Source	Reporting Frequency	Comments	
Objective I: Improve and strengthen in-country supply systems.						
Subcomponent I: Systems strengthening for selected countries						
I.1.1	Strengthen local systems' ability to forecast, finance, procure, and deliver a range of essential public health supplies	Accurate in-country commodity forecasts prepared	Forecast accuracy for contraceptives	Annual forecast accuracy study based on Contraceptive Procurement Tables (CPTs)	Annual	Countries included will depend on data availability.
		Local distribution networks improved at the central/regional/district/ service delivery point (SDP) level	Stockouts at all levels of the system the project serves	<ul style="list-style-type: none"> Logistics management information system (LMIS) Program reports (QR.A) and Procurement Planning and Monitoring Report (PPMR) Logistics Indicators Assessment Tool (LIAT) Lot Quality Assurance 	Semi-annual	Countries included will depend on data availability.

Outcome		Desired Result	Performance Indicator	Source	Reporting Frequency	Comments
				Sampling (LQAS)		
		In-country data management system developed	Reporting rates	<ul style="list-style-type: none"> • LMIS • Program reports • QR.A • LIAT 	Semi-annual	Countries included will depend on data availability.
		Procurement plans developed, implemented, and monitored	Countries with procurement plans reviewed and updated semi-annually for an agreed list of commodities	Program Report [QR.H]	Annual	
1.1.2	Strengthen local capacity to design, operate and manage logistics systems, affect policy change, assure the quality of supplies, and monitor and evaluate logistics system performance	Technical training to local staff in supply chain management skills provided	Number of in-country staff trained compared to expected	Program Reports [QR.E]	Annual	
		Capacity of local institutions to provide training and technical assistance services in supply chain management strengthened	Presence countries where the project partners with local/regional institutions; including the private sector and nongovernmental organizations (NGOs) for system strengthening, research, training, or supply chain services	Program Reports [QR.I]	Semi-annual	

Outcome		Desired Result	Performance Indicator	Source	Reporting Frequency	Comments
			Number of Reproductive Health Supplies Coalition (SCM) course module trainings conducted by regional institution training partners	OS team records	Annual	
			Percentage of funding for regional institution training partners' SCM course modules provided by USAID core funds	OS team records	Annual	
Subcomponent 2: Enabling environments						
1.2.1	Promote a policy environment that strengthens commitment to the improved availability of contraceptives, pharmaceuticals, diagnostics, and other essential health supplies through public and private sources over the long term	Technical support for commodity security assessments, planning, implementation, and monitoring and evaluation provided	Presence countries with commodity security strategies in development and/or implementation	Program Reports [AR.C]	Annual	Countries may have CS included in broader strategies, e.g., a reproductive health strategy with a CS section. Does not have to be a stand-alone CS strategy.
		Coordinating mechanisms established and technical support to ensure their continued operations provided	Presence countries with active CS coordinating mechanisms in place	Program reports [AR.E] [QR.C]	Annual	Working group or committee

Outcome		Desired Result	Performance Indicator	Source	Reporting Frequency	Comments
1.2.2	Mobilize resources from a variety of sources to meet commodity and logistics system needs	Assist countries to leverage additional support for improvements in the supply chain or procurement (plans/proposals)	Presence countries where the project assisted local organizations in developing proposals for supply chain improvement or commodity procurement	Program reports [QR.I]	Semi-annual	This also supports objective 2.
1.2.3	Improve data management and decision making	Updated USAID DELIVER PROJECT monitoring and evaluation data ²	Quarterly and Procurement Planning and Monitoring Report (PPMR) reporting rates	Program reports	Annual	

Objective 2: Improve advocacy and collaboration with global and regional partners for commodity security.

2.1	Increase awareness of and generate/disseminate knowledge about commodity security among international and regional partners.	Analytical support to and collaboration with partners to influence policies and programs of organizations with global and regional reach provided	Qualitative account of key instances where input or support provided to international organizations or global/regional partners to promote CS	Policy team section of monthly updates Notes from countries-at-risk (CAR) meetings	Annual	
		Generate and disseminate pertinent technical information and tools	On-time submission of CS-related publications to Development Experience Clearinghouse (DEC.org)	Communications team records	Annual	
			Number of downloads	Management	Annual	

² Desired result has been modified from its original form, which was “updated USAID DELIVER MIS.”

Outcome		Desired Result	Performance Indicator	Source	Reporting Frequency	Comments
			and order fulfillment for project materials	information system (MIS) server logs Communications team order fulfillment records		
			Number of regional/global events convened or attended by project staff	QR.M Technical team and communications team records Travel database	Annual	
		Coordinate with other international and regional partners to ensure country commodity needs are met	Number of countries that submit reports to the PPMR on a quarterly basis	Program reports	Annual	This indicator is similar to the Quarterly and PPMR reporting rates indicator (1.2.3)

Objective 3: Improve USAID's provision of commodities to programs

Subcomponent I: Support to USAID's central procurement systems

3.1.1	Conduct regular performance review	Operations system scorecard implemented	Operations system scorecard implemented	MIS, operations documentation	Semi-annual	
3.1.2	Support USAID central commodity procurement system	Orders received on time	Orders received on time	MIS, operations documentation	Semi-annual	
		Delivery notes issued on time	Delivery notes issued on time	MIS	Semi-annual	
		Release orders issued on time	Release orders issued on time (for USAID contracts)	MIS	Semi-annual	

Outcome		Desired Result	Performance Indicator	Source	Reporting Frequency	Comments
3.1.3	Transition to new USAID MIS contract	<ul style="list-style-type: none"> • Work plan developed • Reports developed • Standard operating procedures (SOPs) developed • NEWVERN data transferred • Parallel processing transferred • Transition successfully completed 	CSL informed of transition progress, approves key reports from new MIS	Management reports	As required	
			New SOPs approved and staff trained	Management reports	As required	
			Sample reports, data validated in new MIS	Management reports	As required	
			NEWVERN and MIS results match	Management reports	As required	
			New MIS in use for routine operations	Management reports	As required	
Subcomponent 2: Direct procurement service						
3.2.1	Establish an effective, competitive, transparent capability to procure required commodities compliant with United States Government (USG) regulations	Commodities procured at a highly competitive cost	Percent of new procurements involving market analysis	Supply Operations team records	Annual	
			Suppliers deliver ordered commodities to satisfy contractual requirements	Contract process from Request for Proposals (RFP) announcement to contract signing is <250 calendar days for new procurement	Supply Operations team records	Annual

Appendix B

Detailed Discussion of Select Indicators

Forecast Accuracy for Contraceptives³

Over the course of the past four to five years, forecast accuracy for contraceptives in the TO1 focus countries dramatically increased. Accurately forecasting contraceptive requirements maximizes the efficient use of scarce public health resources by avoiding wastage when surplus products expire; avoiding program failure, including an increase in unmet need and unintended pregnancies that may result from stockouts; and efficiently planning contraceptive procurements to account for storage and distribution capacity, as well as funding schedules.

To assess contraceptive forecast accuracy in project countries, the forecasted monthly consumption of a contraceptive is compared to actual consumption recorded at the end of the year. Procurement plans for the report year are updated based on the forecast conducted at that time, which is based on the more reliable projections of requirements for the rest of the year. The median difference between the actual and forecasted quantities over one year determines forecast accuracy for each product. The absolute median error across all products forecasted in a country determines the contraceptive forecast accuracy for that country. This measure is called Median Absolute Percent Error (MAPE).

Optimum forecast error (i.e., the absolute percentage variation between forecasted and actual consumption of a contraceptive) should be 25 percent or less. The smaller the percentage, the better the forecast accuracy, which is consistent with the benchmark set by Smith (1997) for U.S.-based commercial industries⁴

The average mean absolute percentage error across the six most common products⁵ in 10 countries increased during Task Order 1; however, it has stayed consistently within the project's benchmark of 25 percent error or less.

Analysis of forecast error rates, by product, showed that forecast error has declined for intrauterine devices (IUDs), combined orals, and progestin-only orals (see table 4). However, it more than doubled for male condoms and implants, which was the result of over-forecasting needs. Of the 10 countries forecasting for male condoms, 70 percent over-forecasted in 2010. Seventy percent of the

³ As in the previous three years, to make comparisons easier and provide a larger body of data, these data are analyzed for methods common across most USAID | DELIVER PROJECT countries. Less often used methods, such as female condoms and cyclebeads, are not included here because only one or two countries carry them. This analysis includes male condoms, IUDs, Depo-Provera, combined oral contraceptives, progestin-only oral contraceptives, and implants.

⁴ Smith, B. T. 1997. *Focus Forecasting*. Fredericksburg, Va.: BookCrafters.

⁵ The six common products are combined oral pills, Depo-Provera, implants, IUDs, male condoms, and progestin-only pills.

seven countries forecasting for implants also over-forecasted. For male condoms, other errors may be related to combined forecasting for HIV and AIDS and family planning program condoms, and confusion about how much should be ordered to cover both products. For implants, new initiatives to train providers and educate them about the method may not have been implemented as quickly as initially expected.

Table 4. Forecast Error Rates by Product, 2007–2010, Measured in Mean Absolute Percent Error (MAPE)

	2007 MAPE (%)	2008 MAPE (%)	2009 MAPE (%)	2010 MAPE (%)
Male condoms	21	21	16	35
IUDs	24	72	37	24
Depo-Provera	16	30	17	25
All combined orals	4	16	17	13
Progestin-only orals	16	22	31	26
Implants	73	36	30	63
Overall	16	21	23	25

Data for the 10 countries analyzed in 2010 included, for the first time, Pakistan and Zimbabwe⁶. By 2010, there was a significant rise in error in four countries' forecasts: Liberia, Malawi, Mozambique, and Zambia. In Malawi and Mozambique, significant supply chain disruptions have impacted data availability and the forecast process, which may have led to large increases in errors. Liberia and Zambia have less forecasting history than most of the other countries in the analysis and, therefore, less data on historical trends to assist in developing their forecasts. Paraguay, Rwanda, and Tanzania (that already had low error rates) reduced their error rates further by 2010. Forecast error rates are shown, by country, in table 5.

⁶ Although the USAID | DELIVER PROJECT had an office in Zimbabwe for many years, USAID does not provide contraceptives to Zimbabwe, except condoms for HIV prevention. The Department for International Development (DFID) provided all contraceptives. For this reason, historically, Zimbabwe has not been included in this analysis.

Table 5. Forecast Error Rates in Ten USAID | DELIVER PROJECT Countries

Country	2006 Median (%)	2007 Median (%)	2008 Median (%)	2009 Median (%)	2010 Median (%)
Ghana	33	63	34	28	33
Liberia				57	80
Malawi	21	207	30	49	97
Mozambique	151	15	15	18	102
Pakistan					11
Paraguay	10	13	16	12	8
Rwanda	17	12	8	3	7
Tanzania	22	13	30	35	21
Zambia			70	40	59
Zimbabwe					10

These analyses show factors that may improve forecast accuracy in the 10 countries. Countries with the most accurate forecasts represented here have logistics data from lower levels of the supply chain, and they use it for forecasting (with the exception of Pakistan). Countries with the highest error rates are characterized by poor logistics data (often available from the central level only), or heavy reliance on older demographic data for forecasting. In addition, over-forecasting is a common problem for products with high error rates. Three of the four countries with the highest error rates consistently over-forecasted in 2010, by large margins, for all products, except IUDs. The exception is Zambia. Although Zambia over-forecasted for all methods, the errors are large only for IUDs, progestin-only pills, and implants. Countries with the lowest error rates show a mix of under- and over-forecasting across products, but individual product error rates are below 25 percent for most products in low-error countries.

Reporting Rates and Stockout Rates at All Levels of the System Served by the Project

The project has been routinely monitoring contraceptive availability at the central and facility levels in most of the countries that have a project presence and received TO1 funding. By FY2011, the number of countries reporting in the Procurement Planning and Monitoring Report (PPMR) had increased to 22 countries, despite the loss of two countries (the Dominican Republic and El Salvador) due to the reporting agencies' offices closing in FY2011. In both countries, the ministries of health were not interested in reporting themselves (neither country receives donated commodities). In FY2011, the PPMR gained Afghanistan, including reports from four separate projects (coordinated by Management Sciences for Health), and Honduras, a new USAID | DELIVER PROJECT country.

Of the reporting countries, 14 were project-presence countries. Of note, USAID/Lilongwe established a parallel supply chain in Malawi in early 2011, after which data from the Ministry of Health (MOH) were difficult to obtain. In addition, although not incorporated yet, the project is

working with USAID and UNFPA in West Africa to create a West Africa-based CARhs group and to incorporate countries from that region that are not currently reporting.

In FY2010 and FY2011, the following five countries did not have any stockouts at the central level: Ethiopia, Malawi, Nepal, Rwanda, and Zimbabwe. In addition, in FY2010 and FY2011, six of the 15 project-presence countries reported at least one stockout at the central level (Ghana, Liberia, Nicaragua, Nigeria, Tanzania, and Zambia). Data from FY2009 shows that Malawi, Mozambique, Rwanda, and Tanzania had one stockout. Paraguay did not have a stockout in FY2010 but did have one stockout in FY2011. Also, in FY2011, the Dominican Republic did not have any stockouts at the central level (the office has since closed). In project-presence countries, there were an average of seven individual product stockouts per month in FY2009, but only four individual product stockouts, on average, in both FY2010 and FY2011.

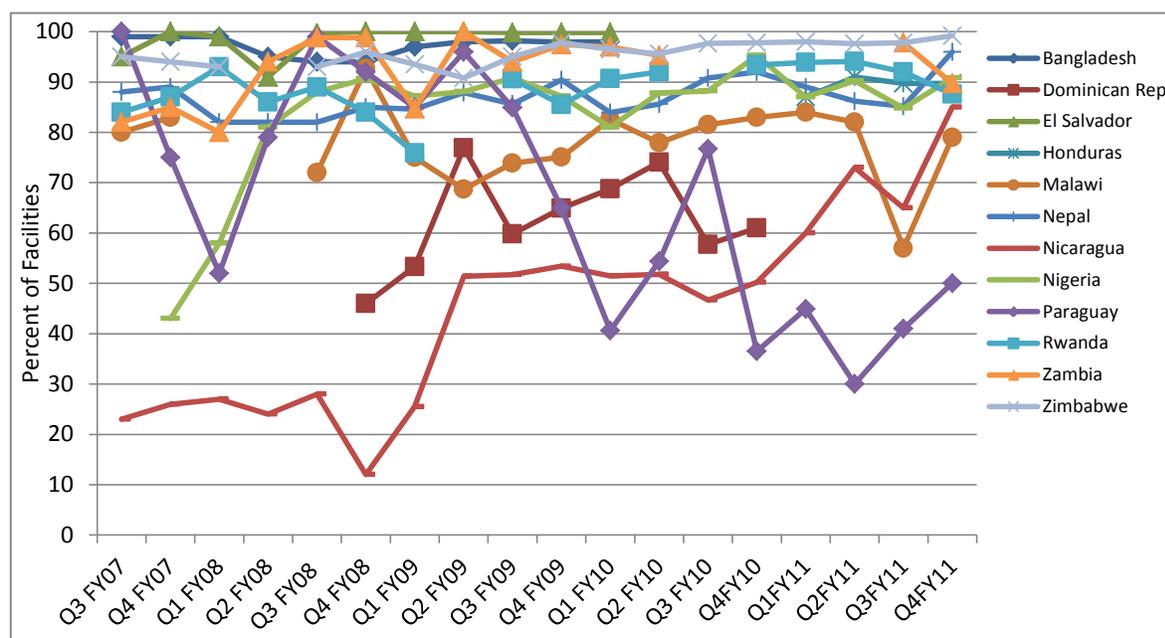
During the reporting period, the most common product to stockout was Depo-Provera. For example, in FY2009, the Dominican Republic had a continuous stockout of combined orals and Depo-Provera at the central level because the government did not release funding for them. In FY2010, 35 percent of stockouts were for Depo-Provera, which was subject to a product recall at the beginning of FY2010. Due to quality concerns, Pfizer had difficulty meeting existing Depo-Provera orders, which contributed directly to stockouts at the country level. Two countries (Dominican Republic and Nicaragua) were only stocked out of Depo-Provera. Just two countries with stockouts did not stock out of Depo-Provera. Also, in FY2010, Liberia, Mozambique, and Zambia had short-term (two months or less) stockouts of specific products, at the central level.

Similarly, in FY2011, 29 percent of all stockouts in FY2011 were for Depo-Provera; IUDs were the second most common product stocked out, accounting for 15 percent of all stockouts. In most months of this year, there were very few stockouts across these countries; in fact, in July 2011, there were no stockouts reported in any of these countries; and in January, May, and September, there was only one reported stockout across these countries.

However, in FY2011, the largest number of stockouts were in October 2010 (12 products stocked out across four countries). Ghana had the most stockouts during FY2011, while the remaining countries had very few during that year. For example, Paraguay only had one stockout all year—for emergency contraceptive pills. Nicaragua had a recurrent stockout over three months of Depo-Provera at the central level, in the first half of FY2011; however, no other products was stockout in FY2011. As noted, Ghana reported an extended central-level stockout of Depo-Provera in the social marketing program, as well as several months of stockouts of progestin-only pills at the MOH, among other limited stockouts.

In addition to these project-presence countries reporting to the PPMR, during TO1, 11 project-presence countries also routinely submitted quarterly figures for contraceptive availability from the service delivery point (SDP) level, which was available through each country's LMIS. Zambia reporting rates are also included in figure 3 for its LMIS for antiretroviral medicines. Figure 4 presents SDP-level reporting rates for these 12 countries from FY2007–FY2011, with some countries joining later than others (i.e., Dominican Republic, Honduras) and a few countries that closed before the end of TO1 (i.e., Bangladesh, Dominican Republic, El Salvador).

Figure 4. Percentage of Facilities Reporting, FY2007–FY2011



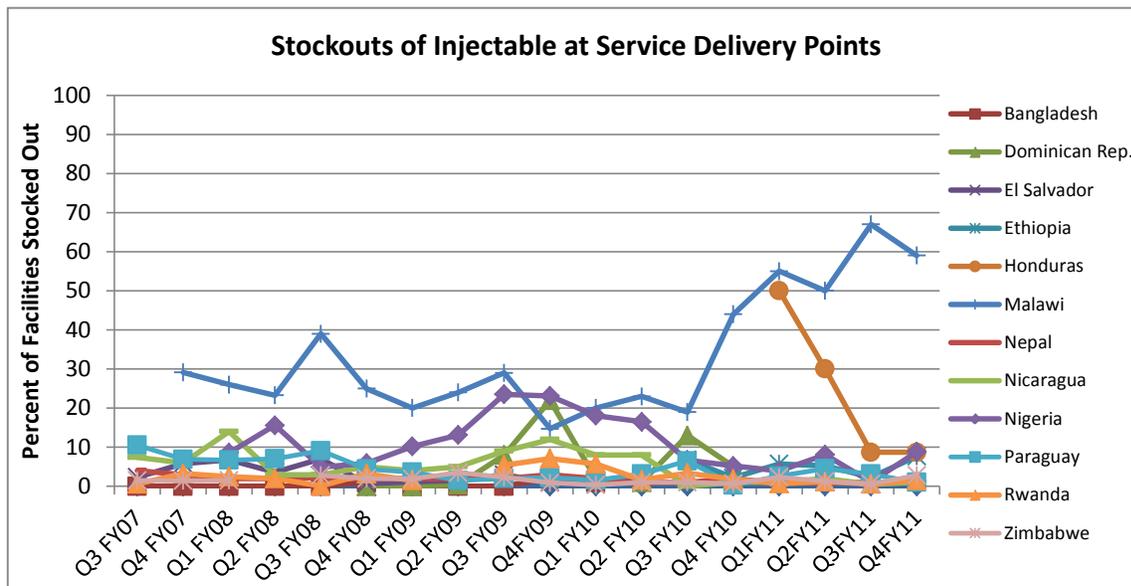
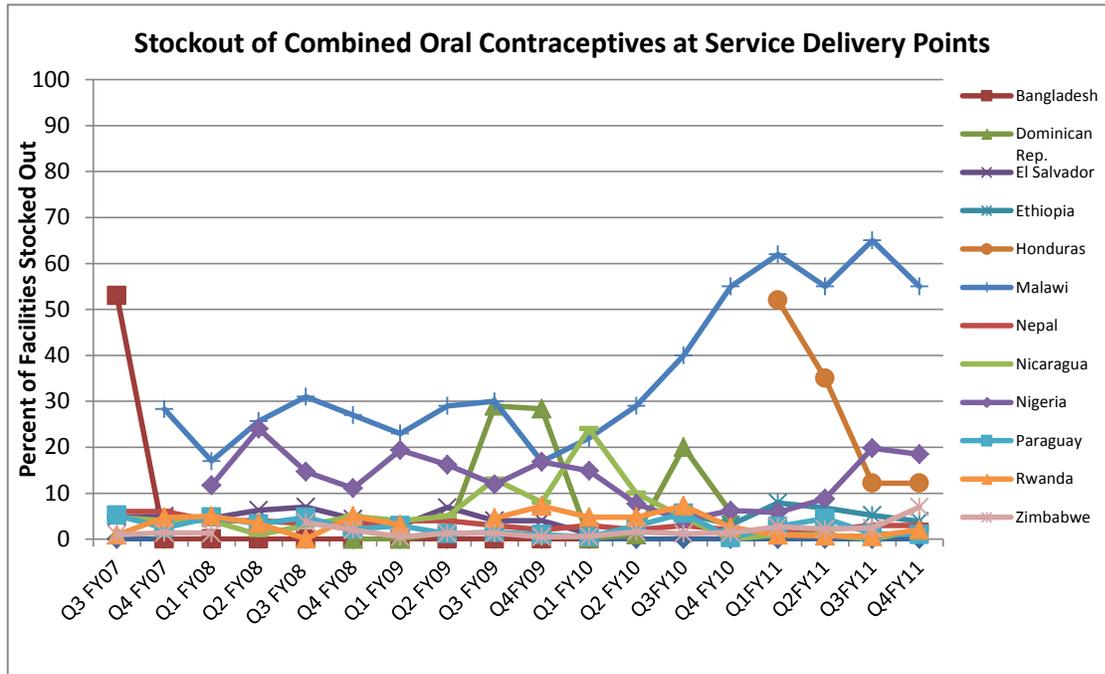
In most countries, reporting rates remained consistently high, averaging around or above 80 percent during each quarter. The majority (two-thirds) of all reporting countries maintained an average of 90 percent or greater reporting rates (Bangladesh, El Salvador, Honduras, Nepal, Nigeria, Rwanda, Zambia [for ARVs], and Zimbabwe).

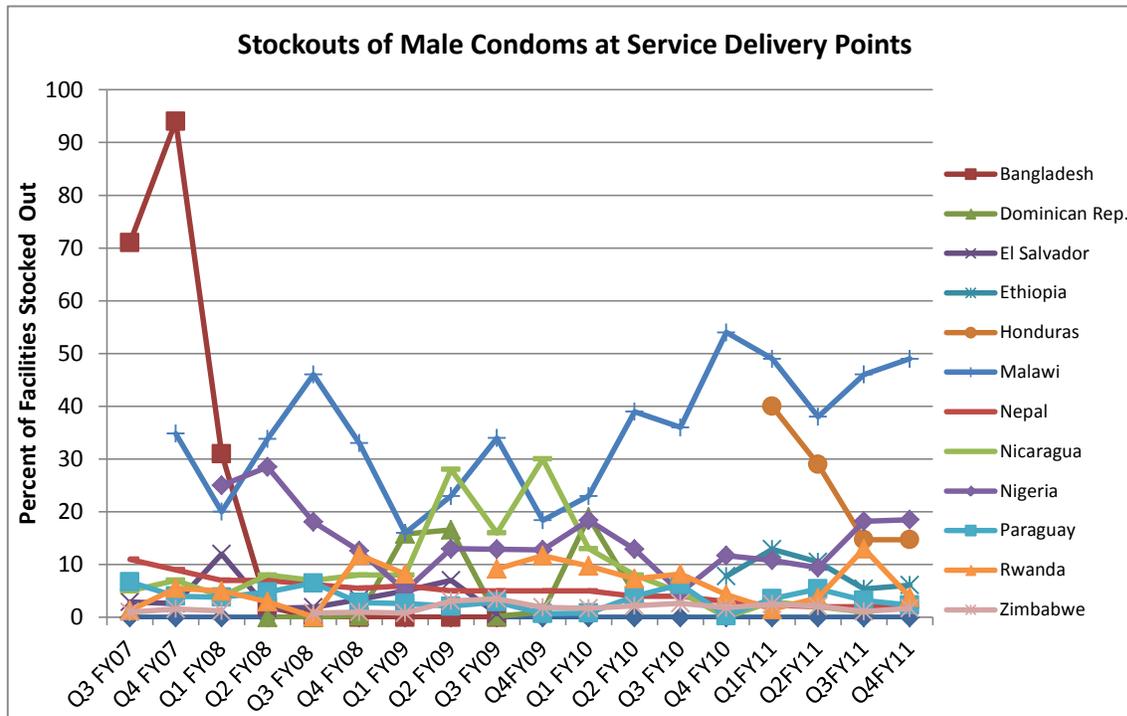
Nicaragua has been rolling out a national integrated LMIS and reporting rates have continued to rise over time, reaching an average of 71 percent by FY2011, as more facilities begin reporting stock status. In Paraguay, reporting rates dropped drastically at the end of FY2009 when contraceptives were integrated with other health commodities; rates have remained low since.

In addition to routine monitoring through the PPMR and countries' routine LMISs, the project has also begun collecting a snap-shot of commodity availability through the regular use of the End-use verification (EUV) data collection tool. The EUV tool, developed under the President's Malaria Initiative, was originally for monitoring availability of malaria commodities. However, in project-presence countries, data collection teams have added contraceptives to the list of tracer commodities to be tracked, allowing for limited visibility into downstream supply availability in countries that do not have a functioning national-level LMIS. This integration of efforts is occurring in presence countries that include Ghana, Mozambique, and Tanzania.

As noted above, using data from the in-country LMIS, contraceptive stockout rates were routinely monitored in 12 countries that had a project presence at some point under TO1. Stockout data for Ethiopia are presented here, although these data are based on a sample of sites visited during supportive supervision. These data are presented in figure 5 for combined oral contraceptives, injectables, and male condoms, from the middle of FY2007–FY2011.

Figure 5. Stockout Rates for Oral Pills, Injectables, and Male Condoms, FY2007–FY2011





N.B. Nigeria data represent availability in project focus states only (Bauchi, Kano, and Sokoto); Bangladesh, Dominican Republic, and El Salvador field offices closed under TO1 and data are no longer available.

These three high-demand resupply methods require a continuous and reliable supply to meet clients’ needs. Figure 5 shows that, in reporting countries, most of the time, these methods are routinely available to clients at SDPs; stockout rates were at or below 10 percent for at least seven out of nine countries, for most methods during this time period.

For combined oral pills almost all reporting countries have maintained impressively low stockout rates (well below 10 percent). In Nigeria, although stockout rates for oral pills have been consistently low during the past few years, there was a slight increase in the second half of FY2011; due to an uptake in demand following the elimination of cost recovery in the public sector, as well as delays in the Federal Ministry of Health’s delivery of products to states. In Honduras, although stockouts were initially high for both injectables and pills, rates fell to below 10 percent during the second two quarters of FY2011. Malawi had high stockout rates for oral pills because of continuing financing and policy issues.

Likewise for injectables, stockout rates have remained below 10 percent, on average, for most countries. Similar to oral pills, in Malawi, stockouts of injectables have remained comparatively high during TO1.

Finally, most countries presented here have also maintained very low stockout rates, at or below 15 percent, on average, for male condoms; with almost all these countries maintaining stockout rates of less than 10 percent, on average, since routine reporting began in 2007. Honduras only began reporting at the beginning of FY2011 and, although stockouts were initially higher, they have also remained low, at 15 percent for the second two quarters of FY2011. In Nicaragua, stockout rates for male condoms increased in FY2009 due to MOH procurement delays, but have since dropped below 10 percent, dropping to 1 percent by the fourth quarter of FY2011. Malawi continued to have

high rates of stockouts for male condoms due to financing and policy issues, in spite of the concerted efforts of project staff and MOH counterparts.

Countries with Procurement Plans Reviewed and Updated Annually

Starting in FY2008, the task order began tracking whether countries were reviewing and updating procurement plans regularly. Project countries are expected to review procurement plans semi-annually against current stock, and update the plans accordingly. During the task order, all reporting countries reviewed and updated their procurement plans at least one time during each reporting fiscal year.

Under Task Order 1, the reporting countries were Bangladesh (until the first quarter for FY2010), Dominican Republic (from April 2008 until FY2010), El Salvador (from October 2007 until the first quarter 2010), Ethiopia, Ghana, Liberia (starting in FY 2011), Malawi, Mozambique, Nepal, Nicaragua (from FY2009), Nigeria (from FY2009 on), Paraguay, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe (from FY2009 on).

In-Country Capacity Building

The project continues to demonstrate its commitment to strengthening local and regional capacity through country-specific and institutional training. Over the course of TO1, the project trained more than 61,000 health workers in 17 project countries. The total number of people trained in supply chain management underscores the importance the project places in building local capacity and ensuring sustainability at the country level. Tables 6 and 7 show the total number of people trained by country and level, respectively.

Table 6. Number of People Trained by Country, FY2007–FY2011

	FY2007 ²	FY2008	FY2009	FY2010	FY2011	Total
Bangladesh ³	192	5,399	2,001	5		7,597
Dominican Republic		518	1,430	747		2,695
El Salvador ³	434	1,945	1,079	64		2,095
Ethiopia	1,000	3,332	798	2,116	4,491	10,350
Ghana	41	459	510	219	2,424	6,526
Honduras					104	104
Liberia					379	379
Malawi		595	44	621	153	1,277
Mozambique			662	36	419	1,712
Nepal	766	835	5	1,635	1,104	4,345
Nicaragua		1,089	1,774	292	814	3,969
Nigeria		149	420	691	1,521	2,781
Pakistan		120	325	23	142	630
Paraguay	293	20	1,054	1,076	78	2,521
Rwanda		726	45	115	1,469	2,355

	FY2007²	FY2008	FY2009	FY2010	FY2011	Total
Tanzania		292	3,333	571	1,353	5,549
Uganda	185		234			419
Zambia	316	865	1,701	1,513	1,570	5,965
Zimbabwe	21	100	153	289	248	811
TOTAL OVERALL	3,248	16,444	15,568	10,013	16,269	61,542

1. The number of times an individual received training; one person may have received more than one training.
2. In 2007, countries were not required to report on the total number of people trained, so limited data are available.
3. For Bangladesh and El Salvador, the number of people trained in FY2010 represents only October–December 2009.

It is important to note that the total overall numbers trained should not be compared between countries or even over the years of the task order, as each country has its own strategy for building capacity and the necessity to train local counterparts is dependent on that strategy, the availability of funding, priorities in country, in-country needs, etc. Likewise for table 7 on trainings by level, although clearly there are more staff to be trained at the SDP level, training needs are determined on a country-by-country basis.

Table 7. Trainings by Level, All Reporting Countries Combined, FY2007–FY2011*

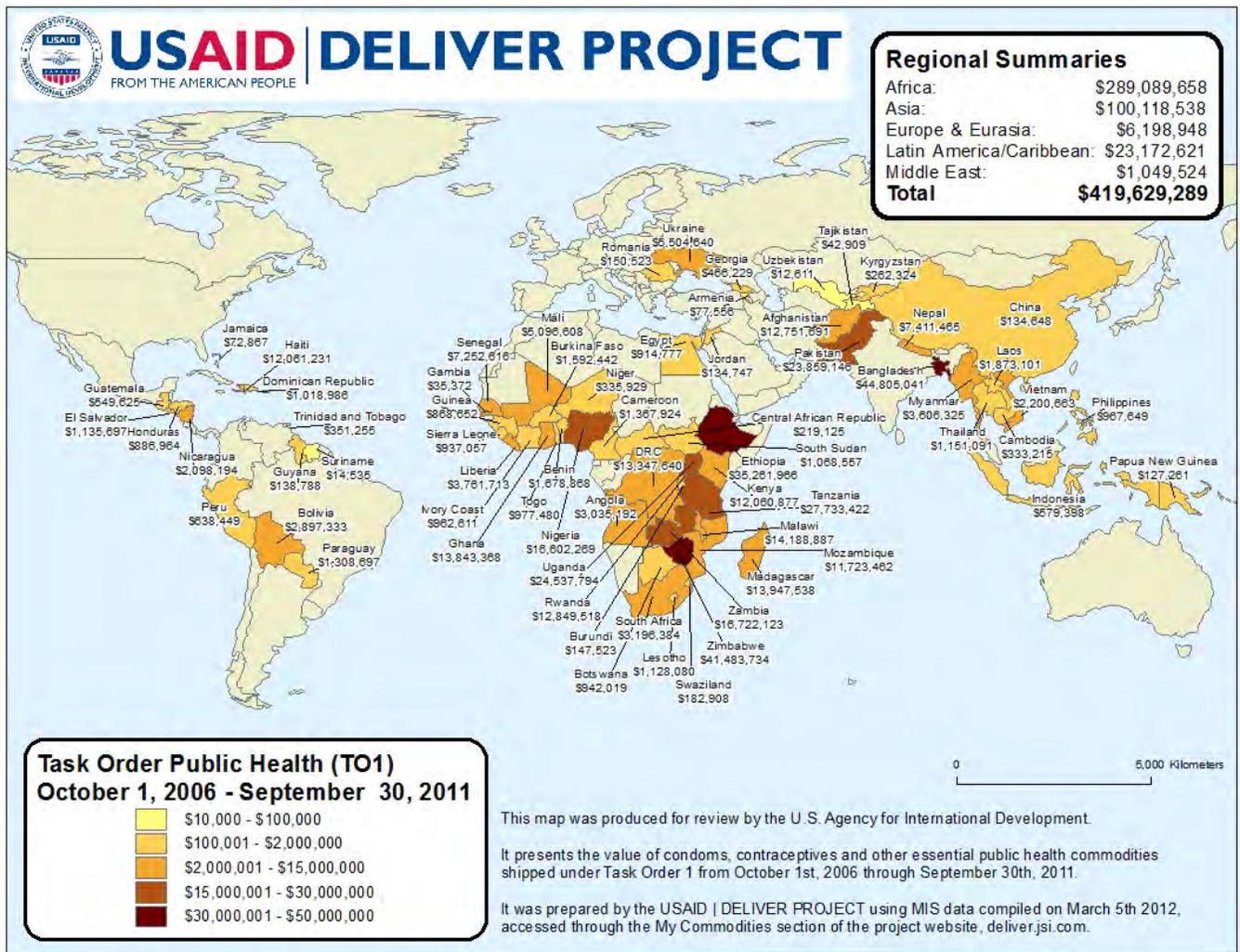
Level	FY2008	FY2009	FY2010	FY2011
Central	313	459	364	947
Regional	300	609	315	959
District	1,626	3,629	1,452	4,422
Service delivery point (SDP)	6,979	10,347	6,962	8,180
Other (community level, training institute, etc.)	2,178	524	920	1,761
TOTAL	11,396	15,568	10,013	16,269

Notes:

1. This includes all reporting countries, as listed in table 6 (trainings by country).
2. In 2007, countries were not required to report on the total number of people trained by level.
3. In 2008, Ethiopia and Ghana were not included in the percentage breakdown by level because their training expectations were not separated by level.

Appendix C

Task Order I Commodity Distribution



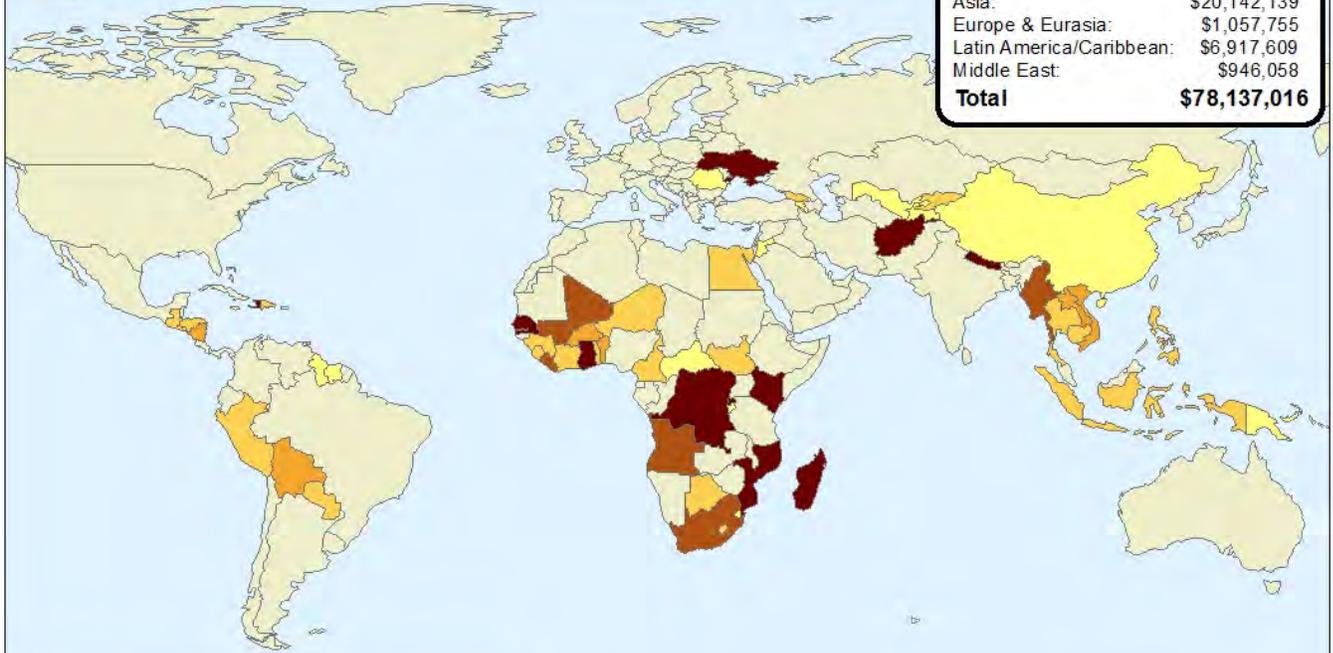


USAID | DELIVER PROJECT

FROM THE AMERICAN PEOPLE

Regional Summaries

Africa:	\$49,073,455
Asia:	\$20,142,139
Europe & Eurasia:	\$1,057,755
Latin America/Caribbean:	\$6,917,609
Middle East:	\$946,058
Total	\$78,137,016



Task Order Public Health (TO1) October 1, 2006 - September 30, 2007

Lightest Yellow	\$12,000 - \$260,000
Light Orange	\$260,001 - \$1,500,000
Orange	\$1,500,001 - \$3,000,000
Dark Orange	\$3,000,001 - \$5,500,000
Dark Red	\$5,500,001 - \$14,000,000

0 5,000 Kilometers

This map was produced for review by the U.S. Agency for International Development.

It presents the value of condoms, contraceptives and other essential public health commodities shipped during year one of Task Order 1. It was prepared by the USAID | DELIVER PROJECT using MIS data compiled on March 5th 2012, accessed through the My Commodities section of the project website, deliver.jsi.com.

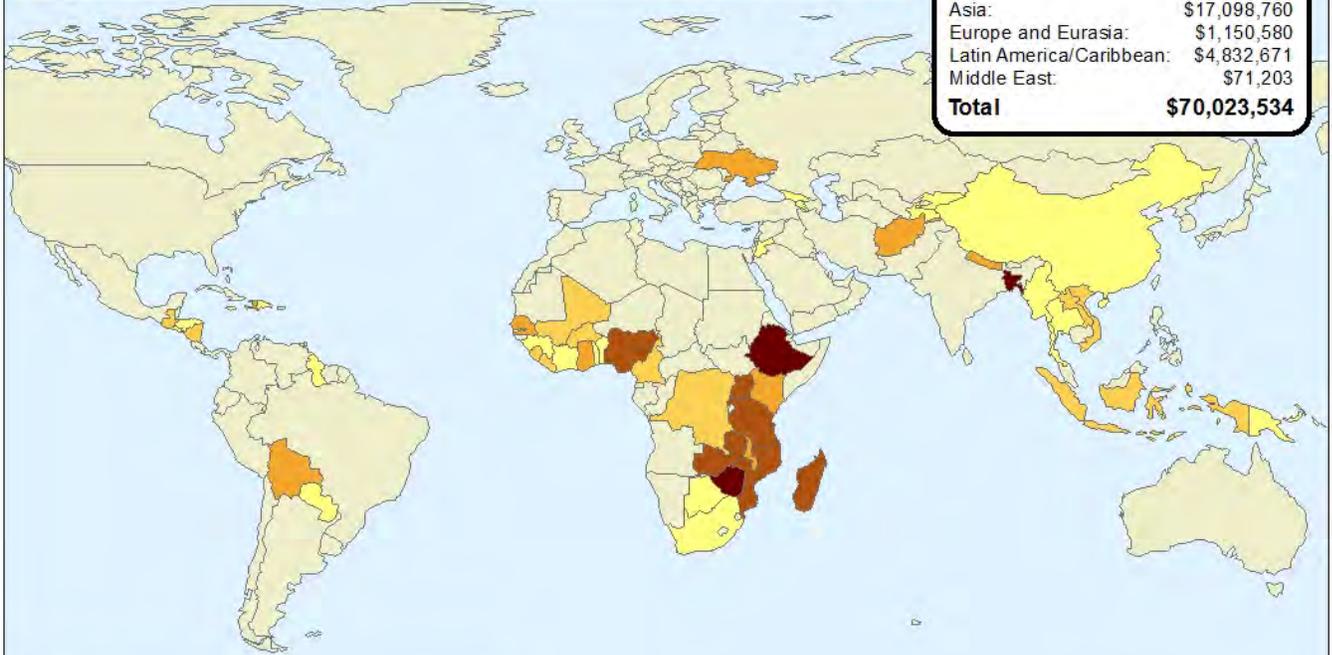


USAID | DELIVER PROJECT

FROM THE AMERICAN PEOPLE

Regional Summaries

Africa:	\$46,870,320
Asia:	\$17,098,760
Europe and Eurasia:	\$1,150,580
Latin America/Caribbean:	\$4,832,671
Middle East:	\$71,203
Total	\$70,023,534



Task Order Public Health (TO1) October 1, 2007 - September 30, 2008

Light Yellow	\$1,000 - \$350,000
Yellow-Orange	\$350,001 - \$900,000
Orange	\$900,001 - \$2,000,000
Brown-Orange	\$2,000,001 - \$5,000,000
Dark Brown	\$5,000,001 - \$12,000,000

0 5,000 Kilometers

This map was produced for review by the U.S. Agency for International Development.

It presents the value of condoms, contraceptives and other essential public health commodities shipped during year two of Task Order 1. It was prepared by the USAID | DELIVER PROJECT using MIS data compiled on March 5th 2012, accessed through the My Commodities section of the project website, deliver.jsi.com.

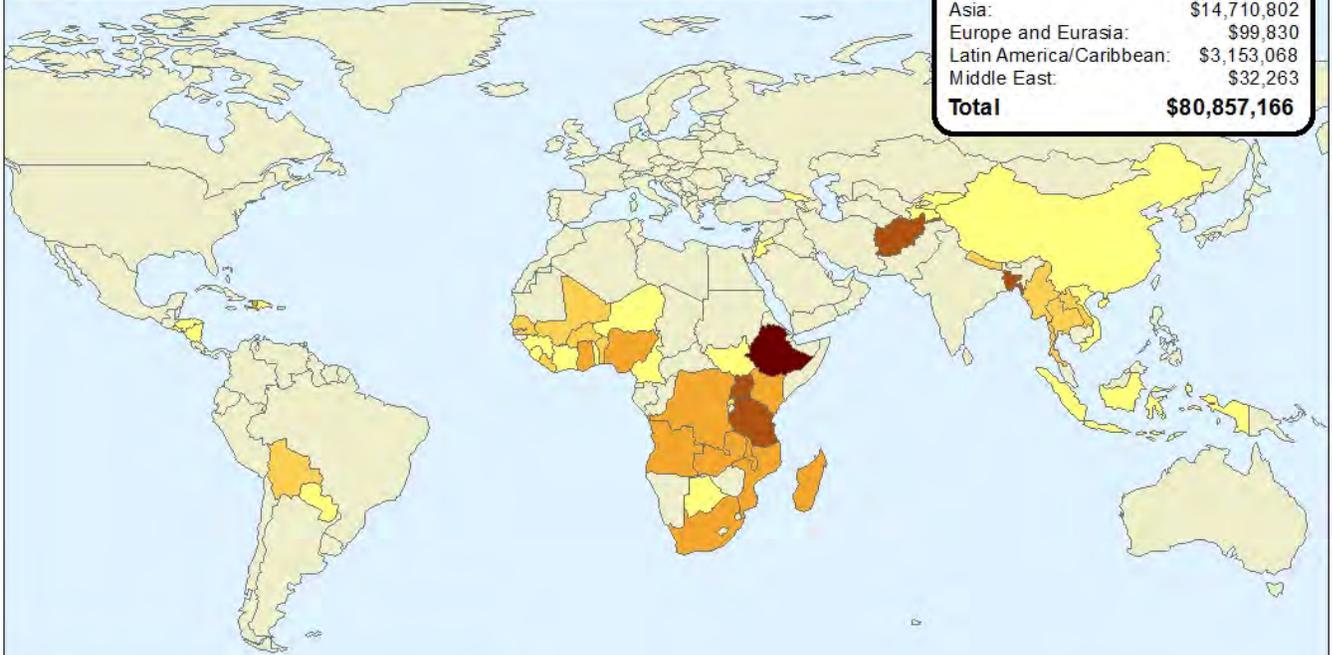


USAID | DELIVER PROJECT

FROM THE AMERICAN PEOPLE

Regional Summaries

Africa:	\$62,861,203
Asia:	\$14,710,802
Europe and Eurasia:	\$99,830
Latin America/Caribbean:	\$3,153,068
Middle East:	\$32,263
Total	\$80,857,166



Task Order Public Health (TO1) October 1, 2008 - September 30, 2009

Light Yellow	\$800 - \$350,000
Yellow-Orange	\$350,001 - \$1,225,000
Orange	\$1,225,001 - \$4,000,000
Brown	\$4,000,001 - \$7,500,000
Dark Red	\$7,500,001 - \$12,500,000

0 5,000 Kilometers

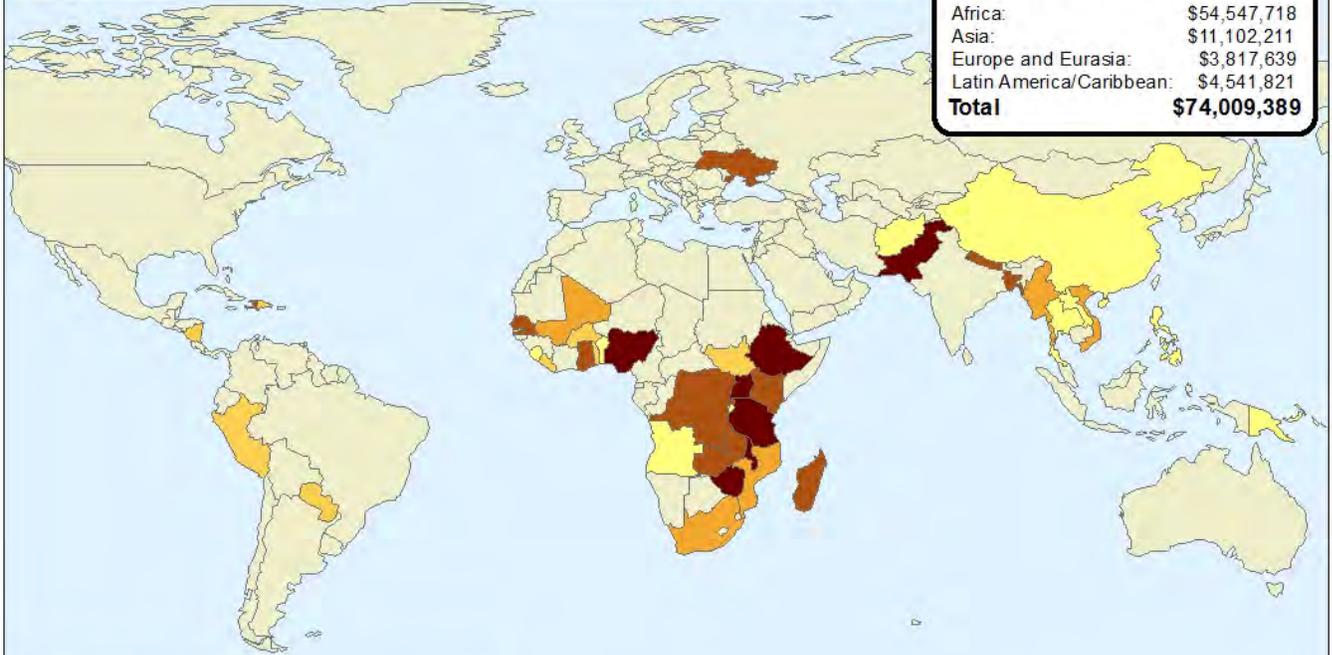
This map was produced for review by the U.S. Agency for International Development.

It presents the value of condoms, contraceptives and other essential public health commodities shipped during year three of Task Order 1. It was prepared by the USAID | DELIVER PROJECT using MIS data compiled on March 5th 2012, accessed through the My Commodities section of the project website, deliver.jsi.com.



USAID | DELIVER PROJECT

FROM THE AMERICAN PEOPLE



Regional Summaries	
Africa:	\$54,547,718
Asia:	\$11,102,211
Europe and Eurasia:	\$3,817,639
Latin America/Caribbean:	\$4,541,821
Total	\$74,009,389

Task Order Public Health (TO1) October 1, 2010 - September 30, 2011	
	\$28,000 - \$200,000
	\$200,001 - \$650,000
	\$650,001 - \$1,400,000
	\$1,400,001 - \$4,000,000
	\$4,000,001 - \$5,550,000

0 5,000 Kilometers

This map was produced for review by the U.S. Agency for International Development.

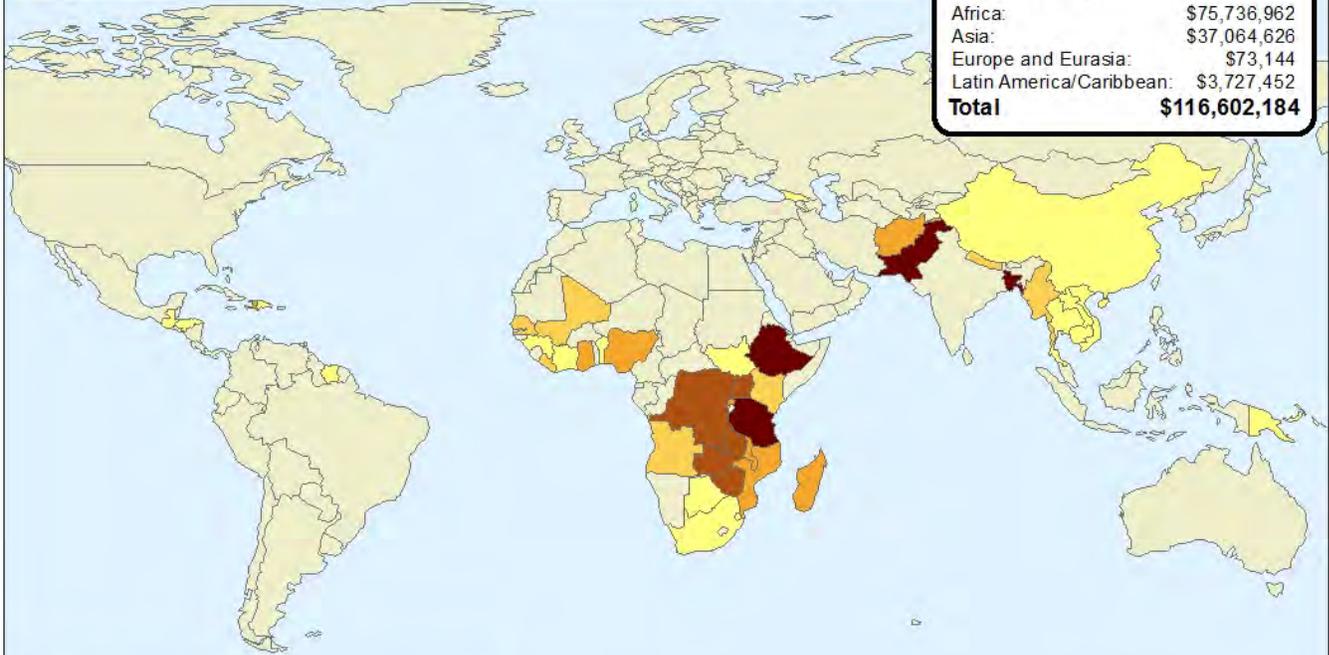
It presents the value of condoms, contraceptives and other essential public health commodities shipped during year four of Task Order 1. It was prepared by the USAID | DELIVER PROJECT using MIS data compiled on March 5th 2012, accessed through the My Commodities section of the project website, deliver.jsi.com.



USAID | DELIVER PROJECT

FROM THE AMERICAN PEOPLE

Africa:	\$75,736,962
Asia:	\$37,064,626
Europe and Eurasia:	\$73,144
Latin America/Caribbean:	\$3,727,452
Total	\$116,602,184



**Task Order Public Health (TO1)
October 1, 2010 - September 30, 2011**

Light Yellow	\$10,000 - \$500,000
Yellow	\$500,001 - \$2,250,000
Orange	\$2,250,001 - \$4,000,000
Brown	\$4,000,001 - \$9,500,000
Dark Red	\$9,500,001 - \$19,500,000

0 5,000 Kilometers

This map was produced for review by the U.S. Agency for International Development.

It presents the value of condoms, contraceptives and other essential public health commodities shipped during year five of Task Order 1. It was prepared by the USAID | DELIVER PROJECT using MIS data compiled on March 5th 2012, accessed through the My Commodities section of the project website, deliver.jsi.com.

Appendix D

Task Order I Presence Countries

Africa	Asia/Near East	Latin America and the Caribbean
Burkina Faso Ethiopia Ghana Liberia Madagascar Malawi Mozambique Nigeria Rwanda South Africa Tanzania Uganda Zambia Zimbabwe	Bangladesh Indonesia Nepal Pakistan	Dominican Republic El Salvador Honduras Nicaragua Paraguay

Appendix E

Task Order I Partners

The USAID | DELIVER PROJECT developed strong partnerships at the global, regional, and national levels to increase the skills and systems needed for empowering contraceptive security leaders, and to help shape and improve approaches to contraceptive security (CS) and improved commodity availability. In addition, the project’s approach to CS, technical expertise, and materials continue to be relied upon and incorporated into numerous partners’ trainings, advocacy efforts, and strategies. Table 8 lists the partners and activities engaged in and supported by the project.

Table 8. Project’s Partners and Activities

Organization	Activity
Reproductive Health Supplies Coalition (RHSC)	<ul style="list-style-type: none"> • Provided routine support; was a resource for the RHSC Secretariat; participated in working groups by providing the country perspective. • Participated in Coordinated Assistance for Reproductive health supplies (CARh) discussions; including Procurement Planning and Monitoring Report (PPMR) data, country context, and follow-up actions. • Commissioned and supported consultant to document the evolution of CS and the RHSC. • Participated in an Istanbul +10 Task Force to help inform and support the Secretariat in framing this initiative. • Supported the development of and provided key data to inform country pages. • Co-branded brief on <i>Reducing Contraceptive Stockouts through Data and Partnerships</i>.
RHInterchange	Supported RHInterchange efforts to promote use and expand data, including in-country work in several countries.
World Health Organization	<ul style="list-style-type: none"> • Participated in revising <i>The Male Latex Condom Specification and Guidelines for Condom Procurement</i>, developed by WHO/UNFPA/FHI. • Supported development of and provided resources to the <i>Reproductive Health Essential Medicines Knowledge Exchange</i> (www.who.int/rhem). This resource portal highlights key information about reproductive health essential medicines; it is produced by our partners to meet identified information needs. • Participated in annual AIDS Medicines and Diagnostics Toolbox meeting and contributed approximately 15 new tools and documents to the site. (Amsterdam, November 2010) • Presented on quantification at regional Procurement and Supply Management workshop (Burkina Faso, February 2010). • Presented on “Automation in the Supply Chain” at AIDS Medicines and Diagnostics Partner meeting (Kuala Lumpur, March 2010).
United Nations Population Fund (UNFPA)	<ul style="list-style-type: none"> • Provided technical support to UNFPA in conducting market segmentation analysis. • Supported revision and strengthening of training curriculum on RHCS and supply chain management.
Georgia Institute of Technology	Participated in a panel at the Georgia Institute of Technology Health and Humanitarian Logistics workshop. This led to their participation in the project annual meeting; also,

Organization	Activity
	a PhD student was seconded to work on inventory modeling.
LLamasoft, Inc.	<ul style="list-style-type: none"> Contracted with LLamasoft to do the 2020 modeling work; as a result, WHO also worked with them on some similar activities. To estimate cost, modeled 14 potential transportation scenarios for the direct delivery of essential medicines to district-level facilities.
Transaid	Contracted Transaid to undertake work on a transport management manual.
Massachusetts Institute of Technology	Panel participant in the Second Public Health Logistics Conference in Zaragoza. Also, involved them in the procurement excellence Technical Advisory Group.
EngenderHealth	<ul style="list-style-type: none"> Co-drafted a technical brief on <i>Quantification: A Supply Chain Management Best Practice to Support Introduction and Expansion of Long-Acting and Permanent Methods (LAPM) of Contraception</i>. Reviewed Reality Check software for forecasting LAPM.
Futures	Partnered with the USAID Health Policy Initiative (HPI) to develop resource that could help countries identify operational policies affecting financing and procurement of contraceptives.
Abt Associates	Conducted review of pharmaceutical management component of a health systems assessment tool used in Zimbabwe.
Management Sciences for Health (MSH)	Facilitated MSH providing data for several countries for PPMR and Procurement Planning and Monitoring Report malaria (PPMRm).
PATH	Was a resource for Depo-SubQ in Uniject product introduction plan.
Supply Chain Management Systems (SCMS)	<ul style="list-style-type: none"> Provided ongoing linkages and information sharing to strengthen supply chain management initiatives in-country. Coordinated around formation of a joint Sustainability Technical Advisory Group.
Pathfinder	<ul style="list-style-type: none"> Collaborated in developing brief on the role of service providers in contraceptive security. Provided overview on CS at Regional Pathfinder meetings in South Africa and Vietnam.
Population Action International (PAI)	<ul style="list-style-type: none"> Was a resource for and participated in meetings on increasing access to maternal health supplies, organized by PAI. Participated in Sexual and Reproductive Health Advocacy and Research: Best Practices & Partnerships Meeting.
Clinton Foundation	With Supply Chain Management System (SCMS), collaborated in the review and development of a tool to quantify laboratory supply needs.
Council of Supply Chain Management Professionals (CSCMP)	Participated in the annual CSCMP conference.

Organization	Activity
International Association of Public Health Logisticians (IAPHL)	Membership in the IAPHL, a USAID-supported community of practice that promotes networking, knowledge sharing, and professionalization. Membership increased by 40 percent between July 2009 and June 2010. New countries represented in IAPHL include Australia, Cameroon, Canada, Guatemala, Liberia, Madagascar, Malaysia, and Yemen. As of July 2010, 535 members from 75 countries have joined IAPHL. Member-initiated discussions and postings on the IAPHL website and listserv have increased significantly (a sign of growing member ownership of IAPHL), and many are from supply chain practitioners in developing countries (versus donor or technical agency staff). A new “Gallery of Experts” gives members information about experts in specific logistics subject areas and announcements about professional development opportunities.
Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria (GFATM)	Provided technical input to the new country profile format for the Global Fund.
Regional training institutes	<ul style="list-style-type: none"> • Collaborated with ESAMI and PRISMA to build capacity and transfer skills for supply chain management short courses. • After three years of USAID support, minimal funding supported PRISMA when they offered six training modules for supply chain management and commodity security to participants from across the Latin American and Caribbean region. • After two years of USAID support, ESAMI is now offering high-quality training four times a year in two supply chain technical areas; course participants have given them high marks. • Drawing on experience with ESAMI and PRISMA, they support Francophone training in Africa, in collaboration with Bioforce.
International Planned Parenthood Federation	Trained staff from nine Anglophone International Planned Parenthood Federation (IPPF) member affiliates (MAs) in quantifying contraceptive requirements and linking quantifications to advocacy.
PhD	Subcontracted to provide a major update to the project’s warehousing guide (forthcoming).
PRB	Provided technical input to <i>Contraceptive Security: A Toolkit for Policy Audiences</i> .
MEASURE/Evaluation	Contributed suggested contraceptive security-related indicators to <i>Compendium of Indicators for Evaluating Reproductive Health Programs</i> .
American Public Health Association (APHA)	Participated in the APHA annual meeting.
Global Health Council	Participated in the Global Health Council annual conference.
American Society of Tropical Medicine and Hygiene (ASTMH)	Participated in the ASTMH annual meeting.

Appendix F

Task Order I Local Partnerships

The project routinely worked in close collaboration with local and regional partners in all the countries where we have field offices. As table 9 shows, the project worked with partners in the areas of reproductive health, family planning, HIV and AIDS, and laboratory. It focused mainly on systems strengthening through capacity building, particularly pre-service training and coordination. These partnerships were a critical element in keeping project activities sustainable.

Table 9. In-Country Partnerships

Countries	Project Partnerships
Burkina Faso	Provided assistance to Bioforce, a private professional training institute, to facilitate supply chain management courses.
Dominican Republic	<ul style="list-style-type: none"> Worked with <i>Eugenio Maria de Hostos University</i> to establish pre-service training in logistics for sexual and reproductive health supplies at the School of Nursing. To increase access, demand, and quality of services, planned and facilitated mini-workshops in HIV and family planning service integration for 102 community leaders. Coordinated this work with the Peace Corps.
Ethiopia	<ul style="list-style-type: none"> Held coordination meetings with Integrated Family Health Programs (IFHP) to define areas of collaboration between the projects and the local NGOs supported by IFHP. Collaborated with the Arba Minch Health Science College (HSC), Hosanna HSC, the Aman HSC, and Hawassa HSC to establish pre-service training. Logistics courses were added to the curriculum at two of the colleges.
Honduras	Provided assistance to <i>Asociación Hondureña de Planificación de Familia (ASHONPLAFA)</i> , an International Planned Parenthood Federation (IPPF) affiliate, to develop a marketing plan and to identify new procurement resources, especially for oral pills.
Malawi	The project, in collaboration with Howard University Technical Assistance Project (HUTAP), provided technical assistance to establish pre-service training at Malawi College of Health Sciences by including a supply chain component in the laboratory training curriculum.
Nepal	Contracted with two private sector companies—Yellow Digital Pvt. Ltd. and Information System Solutions Pvt. Ltd.—to complete the district-level orientation on the web-based logistics management information system (LMIS) and inventory management systems in all 75 districts.
Nicaragua	<ul style="list-style-type: none"> Collaborated with the National University of Nicaragua (UNAN) to include logistics in the Pharmacy School curriculum and shared the teaching methodology guides with the School of Medicine. Worked with PRISMA, a Peruvian NGO focused on sustainable development, to facilitate supply chain management courses and to coordinate efforts with national public health schools to hold regional workshops. Collaborated with Pan-American Social Marketing Organization (PASMO) Women's Health project to strengthen the coordination of family planning efforts.
Tanzania	<ul style="list-style-type: none"> Presented on advocacy for contraceptive funding to the Tanzania Midwives Association (the

Countries	Project Partnerships
	<p>meeting was attended by the permanent secretary and the chief medical officer).</p> <ul style="list-style-type: none"> • Provided assistance to Eastern and Southern African Management Institute (ESAMI), a private professional training institute, to facilitate supply chain management courses.
Zimbabwe	<ul style="list-style-type: none"> • Assisted Population Services Zimbabwe (PSZ), a Marie Stopes International affiliate, in quantifying Jadelle requirements for a start-up project. • Contracted with a local private sector company, WestChase Consultants, to develop and upgrade software that would automate deliveries and data encoding under the Delivery Team Topping Up system (DTTU).

Appendix G

Task Order I List of Publications

Accurately Forecasting Contraceptive Needs: Levels, Trends, and Determinants

A Day in the Life: Logistics Support Officers in Bangladesh

After Receiving USAID | DELIVER PROJECT Logistics Training, Access to Health Products Improves in Nepal

Análisis del Mercado de Anticonceptivos en Honduras
(This publication is only available in Spanish.)

Análisis del Mercado de Anticonceptivos en la República Dominicana

Análisis del Mercado de Anticonceptivos en Nicaragua

Analysis of the Operational Policies Related to Financing and Procuring Contraceptives in Madagascar

Analysis of the Operational Policy Barriers to Financing and Procuring Contraceptives in Malawi

Assessing Contraceptive Financing and Procurement Policies in Malawi

Assessing Policies and Practices That Affect Contraceptive Financing and Procurement

Assessment Tool for Laboratory Services and Supply Chains (ATLAS)

A Strong Supply Chain Responds to Increased Demand for Contraceptives in Rwanda

Bangladesh Averts a Stock Crisis with Help from the USAID | DELIVER PROJECT

Bangladesh: Contraceptive Procurement in Transition: How Context Can Affect Outcomes

Bangladesh: Family Planning Market Segmentation—Update of the 2003 Analysis

Bangladesh: Frequently Asked Questions Web-Based Logistics Management Information System

Bangladesh: Government of Bangladesh Contraceptive Procurement Bottleneck Study

Bangladesh Teams with the USAID | DELIVER PROJECT to Reduce Reporting Time

Bangladesh: Technical Manual for the Web-based Logistics Management Information System

Bangladesh Upazila Inventory Management System Brochure

Bangladesh: Upazila Inventory Management System User Guide

Bangladesh Web-Based Logistics Management Information System

Bangladesh: Web-Based Logistics Management Information System User Guide

Bangladesh: WIMS Technical Manual

Bangladesh: WIMS User Guide

Before & After: Dejunking of Dire Dawa Administration Warehouse Increases Storage Capacity by 240 Percent

Before & After: Heavy-Duty Shelves and Locators Dramatically Improve Warehouses in Bahir Dar

Before & After: Improved Warehousing in Amhara Region

Before & After: Reorganization in Harari Region Increases Storage Capacity by 120 Percent

Before & After: Solving Storage Challenges in Amhara Region

Building a Standard Laboratory Equipment List

Building Blocks for Logistics System Design for HIV Tests and ARV Drugs: Inventory Control Systems, Logistics Management Information Systems, and Storage and Distribution

Capacity Building in Supply Chain Management in Sierra Leone

Case Study: Harmonization of Laboratory Items in Zambia

Checklist for Maintaining a Supply Chain

Commodity Security for Essential Medicines: Challenges and Opportunities

Computerizing Logistics Management Information Systems for HIV Tests, Laboratory Supplies, and ARV Drugs: Lessons Learned from Kenya and Uganda

Continuous Financing Helps Advance Contraceptive Security in Burkina Faso

Contraceptive Commodity Disposal Guidelines

Contraceptive Financial Sustainability: A Primer

Contraceptive Financial Sustainability Sample Data File

Contraceptive Financial Sustainability Tool

Contraceptive Financial Sustainability Tool User's Manual

Contraceptive Forecasting Handbook for Family Planning and HIV/AIDS Prevention Programs

Contraceptive Security Brief: Engaging Service Delivery Providers in Contraceptive Security

Contraceptive Security Brief: Hormonal Implants

Contraceptive Security Index 2009- 11x17 Poster

Contraceptive Security Index 2009: A Tool for Priority Setting and Planning

Contraceptive Security Index Technical Manual

Contraceptive Security Indicators 2009

Contraceptive Security Indicators 2010

Contraceptive Security in Nigeria: Assessing Strengths and Weaknesses

Customs Clearance Issues Related to the Import of Goods for Public Health Programs

Data Entry Guidelines for the Logistics Indicators Assessment Tool (LIAT)

Delivering Family Planning One Village at a Time: 20 Years of Supply Chain Work in Bangladesh

Delivery Team Topping Up: Bringing About Reliable Distribution in Difficult Environments

Developing a Contraceptive Procurement Table in Pakistan

Dominican Republic: Family Planning Program at MOH Is a Logistics Model

Do Nurses Need to Know How Long Medical Supplies Will Last?

Emerging Trends in Supply Chain Management Outsourcing Public Health Logistics in Developing Countries

Ensuring Reproductive Health Commodity Security within a Sector Wide Approach

Estimating the Global In-Country Supply Chain Costs of Meeting the MDGs by 2015

Estudio de Casa: En Colombia los Precios de los Anticonceptivos han Disminuído en el Largo Plazo

Estudio de Caso: Chile Compra sus Anticonceptivos con Eficiencia bajo un Sistema Descentralizado

Estudio de Caso: Convenio entre el Instituto Salvadoreño del Seguro Social y el Ministerio de Salud Pública y Asistencia Social

Estudio de Caso: México, La Graduación y Descentralización Crea Retos y Oportunidades para la Compra de Anticonceptivos en el Marco de la DAIA

Estudios de caso: la Disponibilidad Asegurada de Insumos Anticonceptivos en Institutos de Seguridad Social en Cinco Países de América Latina: Avances en el Acceso a Servicios e Insumos de Planificación Familiar
(This publication is only available in Spanish.)

Ethiopia: Regions Organize to Ensure Focus on Contraceptive Security

Frequently Asked Questions: Post-Shipment Testing of Condoms

Ghana: System Design for TB Commodity Distribution System

Global Positioning System Data Collection Guidelines

Guatemala: Estudio del Acceso a Servicios e Insumos de Planificación Familiar

Guatemala: Using Supply Chain Modeling and Simulation to Analyze the Ministry of Health Supply Chain

Guide for Quantifying Laboratory Supplies

Guidelines for Managing the Laboratory Supply Chain (V.2)

Guidelines for the Proper Storage of Health Commodities (8.5" x 11")

Guide to Conducting Supply Chain Assessments Using the LSAT and LIAT

Health Logistics Quarterly (Ethiopia)

Health Logistics Quarterly (Ethiopia) May 2009

Health Logistics Quarterly (Ethiopia) November 2010

Honduras: Validando las Areas Estratégicas del Plan de Graduación de USAID/Honduras: Plan de Acción e Implementación
(This publication is only available in Spanish.)

Improved Warehouse Management Supports Expanding Health Programs in Ethiopia

Initiating In-Country Pre-Service Training in Supply Chain Management Commodities: Process Guide and Sample Curriculum Outline

Innovative Mobile Phone Use Improves Access to Drugs and Medical Supplies in Africa

In Zambia, Future Pharmacists Learn Logistics for Life-Saving HIV/AIDS Drugs

Kenya: 2020 Supply Chain Modeling Extension: Forecasting Demand from 2020–2024

Kenya: 2020 Supply Chain Modeling: Forecasting Demand from 2020–2024

La Adquisición de Anticonceptivos en América Latina y el Caribe Un Análisis de Opciones Actuales y Futuras en Ocho Países

Laboratory Logistics Handbook: A Guide to Designing and Managing Laboratory Logistics Systems

Laboratory Standardization: Lessons Learned and Practical Approaches

Lessons Learned in Managing National Laboratory Supply Chains

Lessons Learned in Supply Chain Management of HIV & AIDS Commodities

Liberia Trains Health Workers with Help from the USAID | DELIVER PROJECT

Logistics Assessment of the Uganda National Expanded Program on Immunization

Logistics Fact Sheets: ARV Drugs (complete set)

Logistics Fact Sheets: HIV Test Kits (complete set)

Logistics Handbook: A Practical Guide for the Supply Chain Management of Health Commodities

Logistics Indicators Assessment Tool (LIAT)

Logistics Indicators Assessment Tool (LIAT) Antiretroviral Drugs

Logistics Indicators Assessment Tool (LIAT) HIV Test Kits

Logistics Management Units: What, Why, and How of the Central Coordination of Supply Chain Management

Logistics of Health Care Waste Management: Information and Approaches for Developing Country Settings

Logistics Plays Key Role in Zambia's Effort to Reduce Maternal Mortality

Logistics System Assessment Tool (LSAT)

Logistics Workbook: A Companion to the Logistics Handbook

Malawi: ARV Supply Chain Integration: An Assessment of the ARV and Essential Medicines Logistics Systems

Malawi: Distribution of DMPA at the Community Level: Lessons Learned

Malawi: HIV Test Kit Supply Chain Assessment and Quantification

Malawi: Laboratory Services and Supply Chain Assessment

Malawi: Laboratory Standardization Workshop

Malawi: Standardized Laboratories Aided by the USAID | DELIVER PROJECT

Mapping Project Data: An Innovative Way to Share Information

Master Listing of Product Volumes and Weights

Measuring Contraceptive Security Indicators in 2010: Data Update

Measuring Contraceptive Security Indicators in 36 Countries

Measuring Cost to Optimize Health Commodity Delivery in Zimbabwe

Measuring Family Planning Logistics System Performance in Developing Countries

Measuring Family Planning Logistics System Performance in Developing Countries: Working Paper

Measuring Supply Chain Performance: Guide to Key Performance Indicators for Public Health Managers

Mejorando los Mecanismos de Compra de Insumos Anticonceptivos

Monitoring and Evaluation Indicators for Assessing Logistics Systems Performance

Mozambique: USAID | DELIVER PROJECT Helps Provide Warehouse Space after Devastating Explosion

New Online Learning Tool Opens the Door to Continuing Education

Nicaragua: Integrating Logistics Functions at the Ministry of Health

Nicaragua: Una Alianza Modelo entre El Instituto Nicaragüense de Seguridad Social y el Ministerio de Salud

Nigeria: Central Contraceptive Warehouse Assessment

Nigeria: Contraceptive Logistics Management System Assessment Report

Nigeria: HIV/AIDS Commodities Logistics System Design Workshop Proceedings—MARCH 10 to 13, 2008, Jos, Nigeria

Nigeria: Reproductive Health Commodity Security Situation Analysis

Nigeria: Segmentation of the Supply Chain for Essential Medicines Kano and Edo States

Nigeria: Tuberculosis Warehousing Assessment

Pakistan Workshop Report: Contraceptive Procurement, Quality Assurance, Contracting, Monitoring and Evaluation

Paraguay: Diagnóstico Situacional de Parques Sanitarios Regionales Ministerio de Salud Pública Y Bienestar Social/MSPBS
(This publication is only available in Spanish)

Paraguay: Evaluación Cuantitativa de Indicadores Logísticos, Septiembre 2008
(This publication is only available in Spanish.)

Paraguay: Plan de Información, Educación y Comunicación en Planificación Familiar Ministerio de Salud Publica y Bienestar Social
(This publication is only available in Spanish.)

Performance-Based Training Improves the Supply Chain in Paraguay

Philippines: Family Planning and Maternal, Newborn, and Child Health Logistics Management and Stock Status Report

Photo & Caption: The USAID | DELIVER PROJECT Provides Disaster Relief Supplies to Cholera-Stricken Haiti

PipeLine 4.0 Brochure

PipeLine 4.0: Installation Guidelines

PipeLine 4.0 User's Guide

PipeLine 5: An Addendum to the PipeLine 4 User's Guide

Planning and Implementing a Logistics System Design Activity

Policy Brief: Global Fund Financing of Condoms and Contraceptive Security

Policy Brief: HIV & AIDS Commodity Security

Policy Brief: The Global Fund Supports Reproductive Health Commodity Security

Policy Update: Global Fund in Rwanda Agrees to Finance Contraceptives

Potential Market for Cyclebeads: A Basic Model for Estimating Demand

Procurement Primer for Health and Family Planning Programs in Bangladesh

Public Health Logisticians Worldwide Share Their Expertise Online

Putting Integration into Perspective: Proven Practices to Strengthen Public Health Supply Chains

Quantification of Health Commodities: A Guide to Forecasting and Supply Planning for Procurement

Quantification of Health Commodities: ARV Companion Guide

Quantification of Health Commodities: HIV Test Kit Companion Guide

Quick Reference: Logistics System Design and Implementation

Quick Reference: Quantification Planning

Recommended Supply Chain Indicators for PEPFAR Next Generation Program Indicators

Reengineering Public Health Supply Chains for Improved Performance: Guide for Applying Supply Chain Segmentation Framework

Regulatory Harmonization in Central America: How Harmonization Can Impact Regional Contraceptive Procurement

Report on Development of a Draft National Contraceptive Procurement Manual in Pakistan

República Dominicana: Evaluación Cuantitativa de Indicadores Logísticos para Medicamentos Trazadores y Anticonceptivos

República Dominicana: Manual de Procedimientos Logísticos

Segmenting Laboratory Commodities for Logistics System Design

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