



# USAID | DELIVER PROJECT

FROM THE AMERICAN PEOPLE



## Task Order 4 Annual Report:

October 2013–September 2014

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The USAID | DELIVER PROJECT, Task Order 4, is funded by the U.S. Agency for International Development (USAID) under contract number GPO-I-00-06-00007-00, order number AID-OAA-TO-I0-00064, beginning September 30, 2010. Task Order 4 is implemented by John Snow, Inc., in collaboration with PATH; Crown Agents Consultancy, Inc.; Eastern and Southern African Management Institute; FHI 360; Futures Institute for Development, LLC; LLamasoft, Inc.; The Manoff Group, Inc.; Pharmaceutical Healthcare Distributors (PHD); PRISMA; and VillageReach. The project improves essential health commodity supply chains by strengthening logistics management information systems, streamlining distribution systems, identifying financial resources for procurement and supply chain operation, and enhancing forecasting and procurement planning. The project encourages policymakers and donors to support logistics as a critical factor in the overall success of their healthcare mandates.

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### Abstract

This report describes the activities and achievements of the USAID | DELIVER PROJECT, Task Order 4, from October 1, 2013–September 30, 2014. The project works to improve the lives of men, women, and families by strengthening the supply chains that deliver health commodities, developing sustainable national capacity and ownership for operating the supply chain, and cultivating enabling environments for contraceptive security.

Cover photos:

*Women in Nampula, Mozambique, wait for a family planning (FP) consultation while reading the publication “Friends strongly together,” which includes FP and HIV messages. © 2014 Arturo Sanabria, Courtesy of Photoshare*

*Pharmacy worker at Wukro Hospital in Ethiopia. June 2012. USAID | DELIVER PROJECT.*

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# Contents

Acronyms . . . . .	ix
Introduction . . . . .	1
<b>System Strengthening for Health Impact . . . . .</b>	<b>9</b>
Supply Chain Strategy . . . . .	9
System Analysis and Design . . . . .	10
Data Visibility and LMIS . . . . .	14
Supporting Warehouse Improvements . . . . .	17
<b>Building Sustainable National Capacity and Supporting National Ownership . . . . .</b>	<b>19</b>
Supporting Strategic Thinking in Supply Chain Organizations . . . . .	19
Sustainable Development for the Supply Chain Workforce . . . . .	21
Improving Global Access to Logistics Training . . . . .	24
Global Partnerships and Collaborations . . . . .	26
<b>Improving Commodity Security Through Data-Driven Policy, Advocacy, and Planning . . . . .</b>	<b>27</b>
Improving Financial Tracking and Advocacy for Funding Commodities and Supply Chains . . . . .	27
Economic Evaluation . . . . .	30
Market Analysis and Commercial Sector Engagement . . . . .	31
Performance-Based Financing . . . . .	32
Using Data to Strengthen Commodity Security . . . . .	33
Global Partnerships and Knowledge Sharing . . . . .	34
<b>Knowledge Management and Dissemination . . . . .</b>	<b>35</b>
Improving Access to Project Resources . . . . .	35
Promoting Project Resources with Targeted Dissemination . . . . .	36
Conferences and Peer-Reviewed Journals . . . . .	38
Dissemination through the Project's Website and Print Publications . . . . .	40
<b>Conclusion . . . . .</b>	<b>43</b>
<b>References . . . . .</b>	<b>45</b>
<b>Index of Performance Management Plan Indicators . . . . .</b>	<b>47</b>

<b>Appendices</b> .....	<b>51</b>
A. Ensuring Commodity Availability .....	53
B. Strengthening Key Supply Chain Functions .....	57
C. Building Local Capacity .....	65
D. Strengthen Environments for Commodity Security.....	73
E. Knowledge Management and Communications .....	75

## Figures

1. Network Modeling Activity in Tanzania .....	11
2. Comparing Costs for Supply Chain Systems in Nigeria .....	13
3. In Pakistan, Almost 100% Increase in DOH District Reporting Rates, February 2013 to 2014 .....	14
4. Benefits of an eLMIS in Zambia .....	15
5. Human Resources for Health Building Blocks (CapacityPlus framework adapted by the USAID   DELIVER PROJECT).....	20
6. IAPHL Membership Growth, August 2008–September 2014 .....	23
7. Six Steps of the Recruiting Process .....	24
8. Scene from Project’s Video on Disposal of Unusable Health Commodities .....	24
9. Participants Trained by Regional Training Institutes .....	25
10. Regional Training Institutes Extend Supply Chain Capacity Building Reach The project’s investments in developing the capacity of Regional Training Institutes resulted in five organizations that can offer supply chain training on two continents and in multiple languages.....	25
11. Staff Trained at Various Levels of the Supply Chain in Project-Supported Countries, FY2014 ...	26
12. Resource Guide for Analysts and Advocates .....	28
13. Good Management and Financial Practices Support Service Fees .....	29
14. CS Indicator Factoid Shows the Importance of Contraceptive Security .....	29
15. Components of Economic Evaluation of Supply Chains .....	31
16. Supply Chain Cost Driver Analysis .....	32
17. Timeline for LAC Contraceptive Security Initiative during 10 Years .....	36
18. Video Produced by the Project This Year .....	36
19. Updated Infographic—How Contraceptives Save and Improve Lives .....	37
20. Guide to Health Care Waste Management for the Community Health Worker .....	38
21. Nigeria: Using Family Planning Supply Chain Costing for Budgeting and Advocacy .....	40
22. Number of Unique Visitors Each Month to deliverjsi.com .....	41
23. Number of Page Hits for Each Section of the Website .....	41
24. Location of Visitors Accessing the USAID   DELIVER PROJECT Website .....	41
25. Stockout Rates for Male Condoms, Injectables, and Oral Pills, FY2007–FY2014 .....	55
26. Percentage of Facilities Reporting, FY2007–FY2014.....	57

27. 2013 Forecast Error by Product . . . . .	60
28. Contraceptives Listed on the National Essential Medicines Lists . . . . .	61
29. Government Share of Contraceptive Funds Spent, by Presence- and Non-Presence Countries. . . . .	74

**Tables**

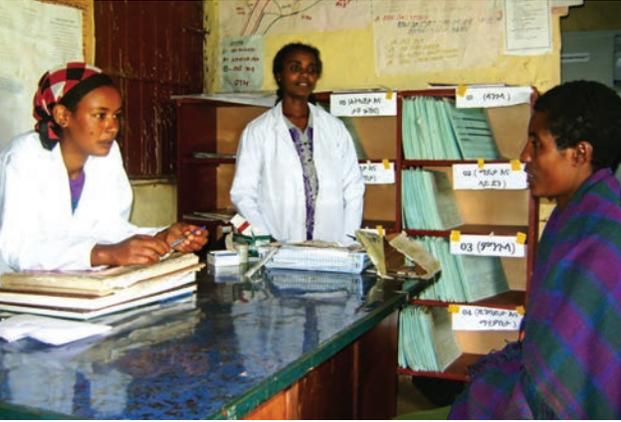
1. Number of PPMR-Reported Central-Level Stockouts in Project-Presence Countries . . . . .	54
2. Contraceptive Forecast Error Rate, by Country . . . . .	59
3. Project-Presence Countries with Protocols for Core Supply Chain Functions . . . . .	62
4. Summary of In-country Staff Trained, by Level and Gender . . . . .	65
5. In-Country Staff Trained, by Country, Level, and Gender . . . . .	66
6. Contraceptive Security Indicator Data . . . . .	73
7. Active IAPHL membership . . . . .	77



# Acronyms

CARhs	Coordinated Assistance for Reproductive health supplies
CHAI	Clinton Health Access Initiative
CMS	Central Medical Store
CPR	contraceptive prevalence rate
CS	contraceptive security
CUC	Central University College
CY	calendar year
DDIC	Delivery and Information Capture
DFID	Department for International Development
DTTU	Delivery Team Topping Up
eLMIS	electronic logistics management information system
EMF	Emergency Medicines Fund
EMLIP	Essential Medicines Logistics Improvement Program
FY	fiscal year
GIS	geographic information system
GHSC	Global Health Supply Chain
HR	human resources
IAP	Implants Access Program
IAPHL	International Association of Public Health Logisticians
ICFP	International Conference on Family Planning
IPLS	Integrated Pharmaceutical Logistics System
JSI	John Snow, Inc.
KNUST	Kwame Nkrumah University of Science and Technology
LAC	Latin America and the Caribbean
LMIS	logistics management information system
LMU	logistics management unit
MAPE	mean absolute percentage error
MOH	Ministry of Health
MOHSW	Ministry of Health and Social Welfare
MSL	Medical Stores Limited
NDS	National Drug Service
NEDL	National Essential Drugs Lists
NUMS	new and underutilized methods
NGO	nongovernmental organization
PAI	Population Action International
PBI	performance-based incentives

PBF	performance-based financing
PFSA	Pharmaceuticals Fund and Supply Agency
PPMR	Procurement Planning and Monitoring Report
PST	pre-service training
PtD	People that Deliver
RH	reproductive health
RHSC	Reproductive Health Supplies Coalition
RMNCH+A	reproductive, maternal, newborn, child, and adolescent health
RTI	Regional Training Institute
SACS	State AIDS Control Societies
SCC	Supply Chain Compass
SCMS	Supply Chain Management System
SDP	service delivery point
SIAPS	Systems for Improved Access to Pharmaceuticals and Services
SOP	standard operating procedure
TB	tuberculosis
TO4	Task Order 4
TRT	Technical Reference Teams
UNCoLSC	United Nations Commission on Life-Saving Commodities
UNFPA	United Nations Population Fund
WHO	World Health Organization
ZAPS	Zimbabwe Assisted Pull System
ZNFPC	Zimbabwe National Family Planning Council



# Introduction

## Our approach to building strong health supply chains:

- Focus on improving health.
- Use evidence to drive action.
- Find innovative solutions for persistent problems.
- Link programs and supply chains.
- Leverage global and local partnership efforts.
- Build local capacities and increase country ownership.
- Produce measurable results.

Well-performing, sustainable supply chains are essential to ensuring that key health commodities are available to clients, where and when they need them. As a critical part of a strong health services delivery system, supply chains support health programs that save and improve lives by providing a continuous flow of medicines and health supplies, no matter how remote the clinic or community.

The USAID | DELIVER PROJECT (the project) improves health outcomes in low- and middle-income countries by providing support for health supply chains and by creating enabling environments for commodity security. During fiscal year (FY)2014, the project worked with 37 countries, maintaining country offices in 22 of them; the project is opening a new country program in India to provide support for supply chain strengthening in selected states.

The project works with global, regional, and local partners to implement sustainable supply chain solutions that fit local contexts. Interventions are grounded in best practices and innovative technologies, often generated by the project, with inspiration from private sector practices. The project is increasingly using combinations of innovative interventions—such as geographic information systems (GIS), supply chain modeling, and optimization techniques—to improve data visibility and performance. Using electronic logistics management information systems (eLMIS) can be a breakthrough for countries that have limited data visibility. In Rwanda, the project supported the rollout of an eLMIS that was implemented down to the service delivery point (SDP) level. Of the 22 presence countries, 10 are currently using an eLMIS at one or more levels of the health system.



*A healthcare worker in Zambia oversees the stockroom in a health facility.*

Strategic planning is vital for the overall direction of supply chains and it can help pinpoint where interventions are most helpful. In four countries, the project helped develop and enhance strategies, such as the supply chain master plan in Mozambique, and developing more detailed strategic plans in Tanzania and Zanzibar. Moving from planning to action, the project also assisted countries in operationalizing strategic plans, including the five-year National Pharmaceutical Supply Chain Strategic Plan in Rwanda. Assessments and analysis are often the first step toward an intervention. In FY2014, the project carried out assessments in 10 countries and facilitated logistics system analysis or design activities in eight countries.

Logistics management units (LMUs) that coordinate and oversee supply chain functions help focus the integration

of supply chains and help elevate their status within an organization. In Tanzania and Guinea, the project was instrumental in instituting LMUs in ministries of health. LMUs can help manage six core supply chain functions that contribute to sustainability: procurement, warehousing, transportation, human resources, information, and waste management. Of the 22 presence countries, 12 have all six systems in place; another seven countries have at least three of the systems in place.

With capacity-building activities, ranging from pre-service training (PST) to supportive supervision, targeted workshops, and communities of practice, the project develops organizational and individual capacity at every level of the supply chain. During FY2014, the project trained 15,839 people in 20 presence countries. A PST program was established in Nigeria, bringing the number of presence countries with PST to 11.

The project offers a variety of learning opportunities for students and logisticians. Membership in the International Association of Public Health Logisticians (IAPHL) increased to 2,876 people in 116 countries. In the West Africa region, The University of Ghana, School of Public Health, was added as a Regional Training Institute (RTI) to offer English-language supply chain management courses.

In FY2014, the project renewed its focus on leadership within supply chain organizations and launched a new initiative to develop in-country supply chain leaders, in collaboration with Systems for Improved Access to Pharmaceuticals and Services (SIAPS) and Supply Chain Management System (SCMS). This initiative will lead to the formation of National Supply Chain Leadership Development Networks, which will enhance leadership roles, especially in middle- and senior-level supply chain positions.

The project continues to produce the Procurement Planning and Monitoring Report (PPMR), which tracks stock status and shipments of contraceptives for 47 programs in 33 countries. The PPMR is a key tool for the Coordinated Assistance for Reproductive health supplies (CARhs) group; they use the data to prevent stockouts of contraceptives; during the year, CARhs responded to supply crises with 19 unplanned shipments to 12 countries, as well as eight expedited shipments.



*Because Usisya Town in Malawi does not have a dock, health commodities are transferred from the larger boat (in the background) to a smaller boat for transit to land.*



*Logisticians in Nigeria participate in a Review & Resupply meeting to assess the latest reports on health commodity inventory and logistics data.*

Stockout rates and reporting rates are key metrics related to the project's strategic objective of increasing commodity availability. Of the 16 presence countries that reported into the PPMR, eight reported central-level stockouts, with five of those reporting three or fewer stockouts. In five presence countries where SDP-level data was available, stockout rates were at or around 10 percent, with some well below 10 percent for the entire year. In Malawi, stockout rates improved significantly compared with previous years, as did reporting rates. In countries with access to SDP-level data through a logistics management information system (LMIS), reporting rates were 90 percent or higher, on average (see appendix A for more details). Related to this, analysis of forecast error across presence countries confirms that countries using lower-level logistics data (lower-level issues or consumption) are producing more accurate contraceptive forecasts.

The project also conducted original research to demonstrate new ways to use logistics data to estimate the contraceptive prevalence rate (CPR). With Demographic and Health Survey data and commodity flow data from LMISs in 30 countries, the project evaluated models for using logistics data to estimate real-time CPR. Study results indicate that most LMISs are capturing data that accurately represent client use, and that these data can be used to create accurate method-specific CPR estimates.

Under the umbrella of commodity security, the project supports policy, planning, advocacy, and coordination activities that contribute to product availability. This includes developing resources and tools that can help manage financing for commodities and supply chain operations; that enable collaboration among the public, private, and nongovernmental organization (NGO) sectors; and that explore options for using economic evaluation analyses and performance-based incentives (PBIs) to increase performance in the supply chain (Serumaga et al. 2014).

To encourage widespread use of the project's supply chain technical knowledge, the project updated existing guides with current best practices and published new materials, based on the project's research and experiences. These tools include guidelines for the warehousing of health commodities, quantification, recruiting supply chain professionals, financial tracking, using a total market approach, PBI, and much more. The project's comprehensive knowledge management strategy ensures that technical information and key messages are disseminated to target audiences through channels that include technical forums, newsletters, blogs, listservs, social media, and presentations at numerous conferences and meetings.



## Figure 1. Where We Work

During FY2014, Task Order 4 worked with 37 countries, had country offices in 22 countries, and provided short-term technical assistance to 10 other countries. The others were part of the Latin America and the Caribbean Regional Initiative and the West and Central Africa Regional Contraceptive Security Initiative.

### THE PROJECT'S TECHNICAL ASSISTANCE





Conducted significant strategic planning activities in 4 countries: Ethiopia, Ghana, Mozambique, and Tanzania.



Provided technical assistance for quantification in 5 countries: Burkina Faso, Mauritania, Niger, Malawi, Indonesia; 11 other presence countries completed quantifications without home office support.



# Six core supply chain functions contribute to supply chain sustainability.



## Of 22 Project-presence Countries—

55%

have all six supply chain systems in place for sustainability: Burkina Faso, Ethiopia, Ghana, Guinea, Liberia, Malawi, Mozambique, Nigeria, Rwanda, Tanzania, Zambia, and Zimbabwe.

91%

have an established procurement unit or other body responsible for the procurement of health commodities

86%

have documented and approved protocols, procedures, or guidelines for procurement of health commodities

14%

have five of six supply chain systems in place for sustainability: Indonesia, Nicaragua, and Pakistan.

86%

have documented and approved protocols, procedures, or guidelines for warehouse management of health commodities

18%

have three or four of six supply chain systems in place for sustainability: Niger, Guatemala, Togo, and Yemen.

77%

have documented and approved protocols, procedures, or guidelines for disposal of medical waste and management of expired and damaged products

14%

have only two of six supply chain systems in place for sustainability: India, Mauritania, and South Sudan.

68%

have documented and approved protocols, procedures, or guidelines for an LMIS that routinely reports stock status from service delivery points to the higher administrative levels

68%

have documented and approved protocols, procedures, or guidelines for transportation of health commodities



*At a supply chain management training in Jharkhand, India, auxiliary nurse midwives discuss content and layout for standard LMIS forms.*

## **New Country Program Supporting Health Supply Chains in India**

In FY2014, the project began working with the government of India to provide support for health supply chain strengthening at the national-, state-, and district-levels, in selected states. With targeted interventions, the project built human resource capacity in supply chain management and facilitated the review and rollout of an online inventory management system for HIV and AIDS commodities.

To set the stage for further initiatives that support India's reproductive, maternal, newborn, child, and adolescent health (RMNCH+A) strategy, the project conducted qualitative and quantitative supply chain system assessments in Haryana and Jharkhand (for essential medicines, family planning, vaccines, and HIV and AIDS supply chains). Using the Supply Chain Compass (SCC) tool (USAID | DELIVER PROJECT 2014g), the project conducted a supply chain landscape analysis that mapped the functional processes for family planning and essential medicines supply chains in Himachal Pradesh, Punjab, and Uttarakhand states (USAID | DELIVER PROJECT 2014k). The results of the assessments and landscape analysis were used to identify bottlenecks and to advocate with stakeholders for mobilizing resources to implement supply chain priority interventions in FY2015.

To begin changing the way supply chain functions are understood and managed, the project trained 115 senior-level health managers from the state- and district-levels, in four states, on supply chain foundations for public health commodities. The three-day interactive training covered supply chain fundamentals and the contribution of logistics to improving access to and availability of life-saving commodities. The feedback was overwhelmingly positive. A few states' counterparts started implementing the concepts learned during the workshops. In Jharkhand, Uttarakhand, and Himachal Pradesh, the program managers began looking at ways to standardize the RMNCH+A supply chain operations and reporting forms, across districts. Jharkhand and Himachal Pradesh also looked for support in conducting a feasibility study for introducing an eLMIS. Haryana leadership started implementing a more standardized inventory control system, setting up maximum-minimum inventory levels for their regional warehouses.

The project worked closely with the National AIDS Control Organization, Clinton Health Access Initiative (CHAI), and State AIDS Control Societies (SACS) to analyze hardware requirements and support rollout trainings for the Inventory Management System, an online system for ordering and dispensing antiretrovirals and HIV and AIDS-related commodities developed by CHAI. The system was rolled out at SACS facilities in 18 of 35 states. Its implementation will continue in FY2015 to the remaining SACS, with subsequent rollout to the antiretroviral therapy centers. It is expected that using the Inventory Management System will reduce emergency orders and commodity transfers between facilities, improve data visibility and reliability, and improve the use of real-time logistics data for quantification and procurement.

The project reviewed the eLMIS for seven public health sectors, currently deployed in 10 states, to identify opportunities for synergies and interoperability between systems. While the systems reviewed share some similarities and address various supply chain operations, none fully support end-to-end supply chain operations. The project recommends further LMIS work in Haryana, Jharkhand, Uttarakhand, and Himachal Pradesh to standardize operating procedures and improve data management at the last mile.



# System Strengthening for Health Impact

Delivering quality health care to patients requires that health facilities have a full supply of medicines and other health products. To ensure a steady supply of commodities, it is necessary to build and maintain a robust supply chain. The project collaborates with ministries of health to ensure that system strengthening interventions are integrated with government systems, and that they build capacity in the local environment, ensuring sustainability in the long term. The interventions are based on best practices and innovative ideas, often from the private sector, where supply chain management is a driving factor for success. The project also partners with NGOs, academia, and local partners to learn from their work and leverage their expertise.

In the past year, the project has increasingly used combinations of innovative interventions—such as a GIS, supply chain modeling, and optimization techniques—detailed in the brief *Optimizing Supply Chains for Improved Performance*—to advance supply chains (USAID | DELIVER PROJECT 2014e). These interventions improve data visibility and improve performance, resulting in better product availability and better health outcomes for clients.

## Supply Chain Strategy

A major focus of the project is to support strategic activities that target overall planning, collaboration, and endorsement of supply chain management as a key factor in successful health programs. The project was involved in significant strategic planning activities in four countries, including development of reproductive health commodity security strategies and operational plans in select regions in Ethiopia and a condom strategy in Ghana; substantive inputs for supply chain master planning in Mozambique; and elaboration of supply chain strategic plans for mainland Tanzania and Zanzibar. Related to these, the project continued to enhance the SCC, an online supply chain rapid diagnostic tool that can help countries map a supply chain's maturity, as a precursor to further assessments and interventions. The tool uses John Snow, Inc.'s (JSI) Integration Framework to place a system on the trajectory of supply chain evolution across seven managerial and functional areas (John Snow, Inc. 2012).

Systems strengthening activities help increase the performance of in-country supply chains. Guided by best practices and innovation, each intervention is tailored to the local context and constitutes a step toward an effective, integrated supply chain.

More countries than ever before are using innovative technologies to strengthen their public health supply chains

**10**

countries

are using eLMIS

**7**

countries

are using mobile technologies

**12**

countries

are using geographic information systems



Missions can use the SCC to guide startup investments in new countries, country ministries of health can use it as a planning and collaboration tool, and other stakeholders can use it to advocate for investments in a supply chain. The SCC was used in various states in India to build consensus with key state-level stakeholders regarding the maturity level of the current supply chain system; the discussion generated through the tool helped stakeholders take a practical look at the requirements to move from an ad hoc to an integrated supply chain. Using the SCC in workshop settings have also yielded positive outcomes in Zanzibar, where findings have been used for a five-year mid-term strategic plan.

In Rwanda, the Ministry of Health (MOH), with support from the project, took steps to operationalize the five-year National Pharmaceutical Supply Chain Strategic Plan, including the definition of key activities and validation of a performance management plan. The performance management efforts aim to clarify roles and responsibilities among stakeholders; monitor achievement of organizational targets; and, to achieve Rwanda's supply chain goals, identify what is working well and what needs to improve.

To address fragmentation in drug management between the pharmacy and health program units within the MOH in Indonesia, the project helped develop a two-year (2014–2016) National Drug Management Strategy. The strategy's framework comprises five drug management components—planning, procurement, storage, distribution, and utilization—supported by three management system components—drug management information, drug quality assurance, and human resources. The 2014–2016 implementation timeline is aligned with the development of the national health insurance scheme.

## System Analysis and Design

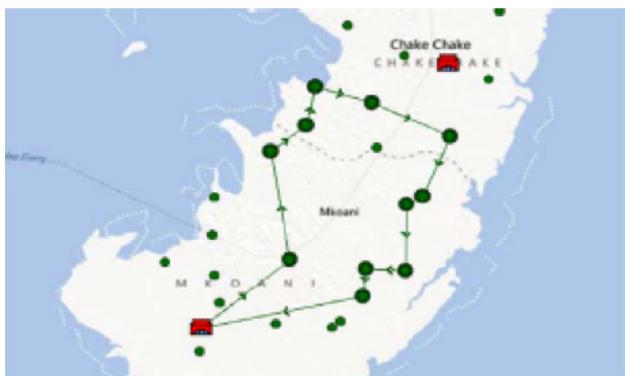
In FY2014, to help identify changes needed to improve product availability, the project conducted in-depth supply chain system analysis and design activities in eight countries. The project increasingly used optimization to model different scenarios of supply chain system design, helping stakeholders better understand the advantages and disadvantages of various solutions.

Optimization is a commercial-sector approach to strategic planning, design, and continuous improvement in supply chain systems. It makes better use of existing data and integrates visual tools—such as a GIS—and commercial-sector approaches into an analysis that can offer valuable insights as to which interventions should be pursued. The project uses simulation software and routine data to identify flexible strategies for increasing the performance and cost effectiveness for each supply chain function, such as warehousing and distribution.

The project conducted optimization activities in Ghana, Mozambique, Niger, Nigeria, Tanzania, and Zambia to answer various questions, including how to accommodate an increased future volume of commodities in Tanzania (see figure 1). In Niger, the project began a network optimization study to understand the needs and constraints of the storage and distribution network in that country. In the first phase, the project and stakeholders collected key data inputs and, using Supply Chain Guru, conducted an assumptions-building workshop to develop the model for the current distribution system. Phase II, planned for FY2015, will compare this model to alternative models to demonstrate changes to the system to improve efficiency, and to generate actions and recommendations to improve the system.

In Mozambique, the project, with SCMS, contributed substantively to the Pharmaceutical Logistics Master Plan Implementation Plan, which the MOH approved in September 2014. Analytical inputs included a human resource assessment, a supply chain costing study, and a network optimization exercise using Llamasoft software.

Figure 1. Network Modeling Activity in Tanzania



A laboratory technician handles TB test materials in Indonesia.

In Indonesia, the National Tuberculosis Program, the MOH, and other stakeholders, with technical assistance from the project, used the Assessment Tool for Laboratory Service (ATLAS) to conduct a laboratory service and logistics assessment of six high-level tuberculosis (TB) labs that provide advanced testing services. Areas that need strengthening include specimen transport, cold chain management, lab maintenance, and forecasting. For the country-wide rollout, stakeholders then selected a set of laboratory standard operating procedures (SOPs), which had been developed in cooperation with the World Health Organization (WHO) and the WHO-supported Salatiga Lab. The project has begun assisting with the process of adapting the SOPs for labs in four provinces.

In Ethiopia, the project, in collaboration with Pharmaceuticals Fund and Supply Agency (PFSA), conducted a national Integrated Pharmaceutical Logistics System (IPLS) survey to measure the progress of system performance at all levels of the public-sector health facilities. This first representative assessment conducted since the initiation of IPLS in late 2009 showed that availability was above 90 percent for most tracer products. The overall inventory management system, including use of standard forms, was generally good; although variations were observed by level of facility and phase of implementation. On average, about half the facilities (but only 29 percent of health posts) met acceptable storage conditions. Survey findings



*The manager of the hospital store in Tulu Bolo Hospital, Ethiopia*

will help determine future priorities and future directions for all stakeholders in the sector.

Over the life of the project, supply chain system design has evolved through the careful piloting of new and innovative approaches. A decade ago, the Delivery Team Topping Up (DTTU) was implemented in Zimbabwe as an innovative and new way to ensure product availability; it was built on a commercial-sector model. The proven success of DTTU inspired the adaptation of the system in Nigeria, where the Direct Delivery and Information Capture (DDIC) pilot was launched in Ebonyi and Bauchi states in 2013.

During FY2014, DDIC provided bimonthly deliveries of malaria and family planning/maternal, neonatal, and child health products to 378 health facilities, in partnership with a third party logistics provider. DDIC teams collect essential logistics data and calculate resupply, allowing nurses and healthcare providers to focus on treating patients instead of dealing with supplies. Because the resupply quantities are calculated at the same time as

the products are delivered, there is no lead time between orders and delivery, facilitating better stock management. The success of DDIC, resulting in significant reductions in family planning stockouts, has helped inform system strengthening activities and supply chain design across programs in many countries.

In Ebonyi state, on average, stockout rates decreased from 77 percent for male condoms at the time of the first delivery in February 2013 to 3 percent by April 2014. Similarly, stockouts for Microgynon decreased from 69 percent to 1 percent by April 2014. Bauchi state also saw reductions in stockouts for all family planning commodities. For example, stockout rates for condoms and Microgynon decreased from 18 and 16 percent, respectively, in July 2013; and to 1 percent by April 2014. In an analysis that looked at cost effectiveness and other parameters, the project compared DDIC to other systems in Nigeria; it showed that DDIC is similar in cost effectiveness to one of the existing distribution systems, but is more cost effective than two other systems. Stakeholders in Nigeria used

the results to decide whether or not to expand the DDIC approach to other states in Nigeria (see figure 2).

Based on findings from a 2013 contraceptive security assessment, the project, with the MOH in Mauritania, undertook a contraceptive logistics system design to improve management and the availability of contraceptives. Stakeholders collaborated on recommendations to establish a forced-ordering inventory control system, define an LMIS and develop LMIS forms, and integrate contraceptives into the essential medicines supply chain. Finalized LMIS forms, SOPs, and a training curriculum will be used to pilot the system in two regions.

As the next step in developing supply chain designs that provide integration, flexibility, and sustainability, the Zimbabwe Assisted Pull System (ZAPS) was piloted to develop a supply chain that is robust and scalable across programs; and is able to respond to fluctuations in the environment, including funding and product demands. The vision for ZAPS is for the pilot to be fully developed and implemented across the country; it will replace Zimbabwe's four separate supply chain systems that currently deliver public health supplies. It will also provide a unified system that is simpler to manage, costs less, and produces similar or higher levels of performance.

ZAPS was piloted in Manicaland province in April 2014. A rigorous monitoring and evaluation plan will assess ZAPS at the baseline, midline, and endline, comparing it to the existing systems. An in-depth economic evaluation of this pilot will contribute to global best practices for economic evaluation research methodologies in public health supply chains. The evaluation will also provide information for other developing countries about the distribution design options available to them. Economic evaluations—studies that compare the costs and consequences of alternative supply chain investments—can be a valuable tool when making decisions about different courses of action; it was a focus of the project during FY2014.

System rollout activities have also taken place in Yemen and Zambia, and other countries. With formal endorsement from the Population Sector of the Ministry of Public Health and Population of the improved SOPs for the contraceptive logistics system, the Yemen country program began using a nationwide training program to implement the SOPs, despite a challenging security



At a training in Yemen, a participant calculates the average monthly consumption for family planning commodities.

Figure 2. Comparing Costs for Supply Chain Systems in Nigeria





eLMIS training in Tanzania

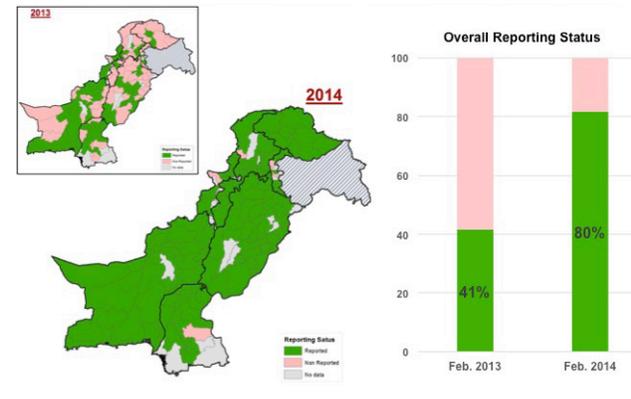
situation. A cadre of 44 master and governorate trainers was formed and, in less than two months, trained 350 supply chain personnel across three governorates. The trainings are planned to continue, reaching most of the large majority of governorate-level supply chain staff in FY2015.

In Zambia, the project continued to rollout the Essential Medicines Logistics Improvement Program (EMLIP) nationwide, including six rollout trainings for new districts and six update trainings for existing EMLIP districts, for a total of 258 facility staff. An EMLIP Hybrid debrief meeting was also held to update principal stakeholders on the system redesign and to promote ownership and sustainability of the system within the MOH.

## Data Visibility and LMIS

Supply chain managers need timely and accurate logistics data to avoid shortages and bottlenecks at any level in the supply chain. To ensure that decisionmakers have the information they need, the project helps countries expand data visibility and build efficient and effective LMISs. Better LMISs can help increase reporting rates and reduce stockouts.

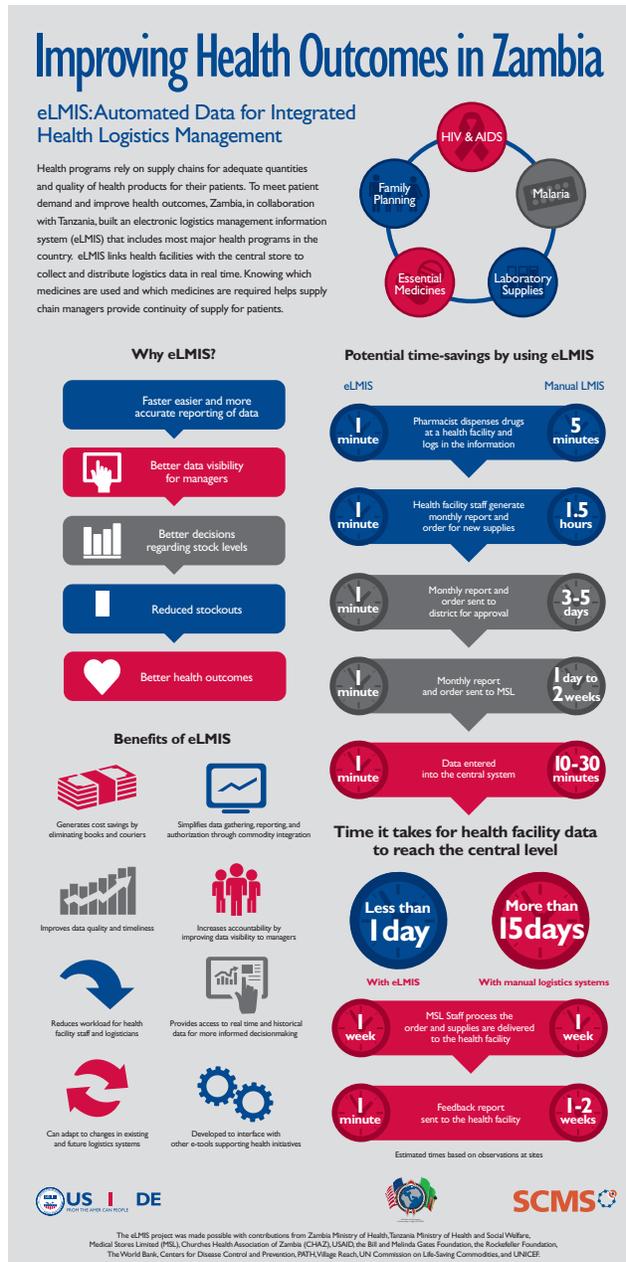
Figure 3. In Pakistan, Almost 100% Increase in DOH District Reporting Rates, February 2013 to 2014



Whenever possible, the project builds on proven, scalable systems that can be tailored to new health programs and new countries. In Pakistan, the successful implementation of automated LMISs for contraceptives and TB products encouraged stakeholders to move to a similar system for managing vaccines. In FY2014, the project collaborated with stakeholders—including USAID, United Nations Children’s Fund, and WHO—to complete development and testing of LMIS release 2.0 for both contraceptives and vaccines; it includes new features and advanced analytical tools for managers: dashboards, GIS maps, and graphs (see figure 3). The new release will be implemented in FY2015, offering stakeholders greater access to timely, high-quality data beyond the central level, with which to make critical supply chain decisions. The automated LMIS for vaccines will be further implemented down to the union council (sub-district) level in FY2015.

To meet patient demand and improve health outcomes, the project continued to collaborate with Tanzania and Zambia in building an eLMIS that includes most major health programs in the countries. Based on OpenLMIS, the eLMIS links health facilities with the central store to collect and distribute logistics data in real time. Knowing which medicines are used and which medicines are required helps supply chain managers provide a continuous supply of health products for patients and clients. Implementing the eLMIS for the Zambian and Tanzanian health systems is a breakthrough that will enable a transition from a paper-based system of data management to an electronic format (see figure 4).

Figure 4. Benefits of an eLMIS in Zambia



A health worker is performing logistics tasks in Guatemala.

facilities. Concurrently, the project, in collaboration with SCMS, provided trainings to transfer eLMIS knowledge to stakeholders and supply chain system users nationwide.

In Nigeria, program and supply chain managers now have better data for logistics and program decisionmaking—thanks to two interactive, user-friendly databases—which were developed with project support. With the Family Planning Service Providers Database, users can access detailed and summarized contact information on public sector SDPs and service providers for the first time, in one place, to better understand family planning services capacity in the country. As the database is updated, the federal and state ministries of health will have a master list of trained family planning providers that can be used to identify gaps in family planning service provision skill sets, including supply chain management; facilitate equitable distribution of trained family planning providers nationwide; and to drive decisions on where to target family planning trainings. The second database—the states’ Requisition Request and Report Form database—aggregates data on contraceptives distributed to states and NGOs that can be used for forecasting and supply planning. Together, these databases provide the first-ever electronic data on state-level uptake of contraceptives and the locations where clients can access family planning services countrywide.

Similarly, Guatemala implemented a Logistics Data Entry and Registry Tool, which improved visibility into the

Rwanda implemented its own eLMIS in FY2014. The project, in collaboration with the MOH Logistics Management Office, oversaw the rollout of and user training for the system, which started in March 2014; by July 2014, it was live countrywide for users at all levels of the supply chain. By the end of FY2014, 80–90 percent of users had discarded the paper-based system; order processing cycle time was reduced from four days to 45 minutes; and managers now have stock visibility and real-time consumption data at district pharmacies, district hospitals, and health



*During the rainy season in South Sudan, roads become inaccessible in some counties, and it is necessary to airlift medicines and medical supplies.*

### **Providing Basic Logistics Services in Difficult Environments**

After 40 years of civil conflict, South Sudan has a severe shortage of health services and health supplies. With very few paved roads, transportation is challenging—it can take as long as six weeks for a truck to travel only 400 miles.

To help address supply problems, the Emergency Medicines Fund (EMF) is providing a one-year supply of essential medicines, antimalarial drugs, and ancillary products to all 10 states in the country. The first of four installments of products has reached county health departments and health facilities by road or air. Kits are being distributed by air to hard-to-reach Jonglei, Unity, and Upper Nile states, in collaboration with the state ministries of health, the World Food Programme, and implementing partners.

USAID, DFID, and the Norwegian Ministry of Foreign Affairs jointly fund the EMF program. The project implements the program, which includes managing the warehousing and distributing health supplies worth approximately U.S.\$28 million. So far, the project has distributed medicines and health supplies equivalent to 89 40-foot containers.

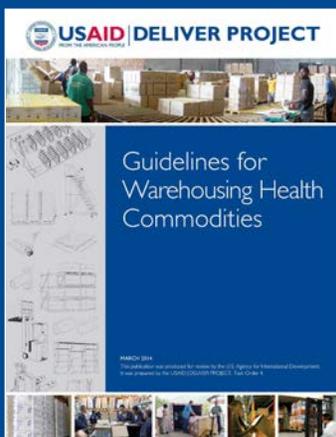
supply situation at the regional-, district-, and service delivery–levels in six regions. The tool, which consolidates LMIS data and reduces duplicative reporting for each region, is used to evaluate stock levels, reporting rates, and redistribution decisions.

## Supporting Warehouse Improvements

During FY2014, the project worked in a number of countries to improve their warehouses. The project, to sustain its work, published an updated guide for warehousing health commodities, including a step-by-step self-assessment for warehouse managers and staff. In South Sudan,

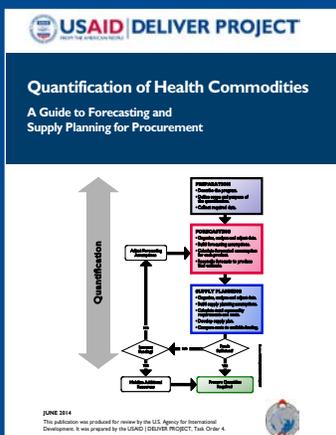
the project improved the Central Medical Stores (CMS) by providing racking, material handling equipment, and training to CMS staff. In Nigeria, the project provided technical assistance to the National Primary Health Care Development Agency to assess the existing infrastructure of four zonal warehouses that will serve as intermediate or regional depots for 1,500 health facilities, under the Nigerian government’s Subsidy Reinvestment and Empowerment Program, which distributes maternal and child health commodities. The assessment identified the level of improvement needed to bring the warehouses up to good pharmaceutical warehousing standards; the renovation will take place in FY2015.

### New Guides



#### Guidelines for Warehousing Health Commodities

The updated, *Guidelines for Warehousing Health Commodities* (USAID | DELIVER PROJECT 2014d), can support improved warehouse management in all the countries where we work. The new guidelines, a more interactive tool for the reader, provide easy-to-use self-assessments that cover seven categories: infrastructure, layout and operations capacity, warehouse equipment, special storage, inventory management, security and safety, and human resources. The new self-assessment makes the guide more usable for a wider audience; the guide also includes practical advice on how to improve warehouse operations and options for warehouse equipment and technology.



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

This updated publication, *Quantification of Health Commodities: A Guide to Forecasting and Supply Planning for Procurement* (USAID | DELIVER PROJECT 2014f), can help estimate commodity needs and costs for successfully implementing national health programs. Program managers, warehouse managers, procurement officers, service providers, and others can use the guide to identify funding needs and gaps for procuring their required commodities. They can also use it to plan procurements and shipment delivery schedules to ensure a sustained and effective supply of health commodities. The step-by-step approach to quantification presented in this guide is complemented by a set of product-specific companion pieces that include detailed instructions for forecasting consumption of antiretroviral drugs, HIV test kits, antimalarial drugs, and laboratory supplies.





## Building Sustainable National Capacity and Supporting National Ownership

A skilled and knowledgeable workforce is essential to effectively operating public health supply chains. To ensure sustainability for its interventions, the project works with ministries of health, educational institutions, and the private sector to select and implement the strategies that best support capacity building in a particular country context. With human resources (HR) assessments establishing a baseline for capacity building in many countries, a variety of educational approaches are employed to address training needs at each level of the supply chain.

During FY2014, the project renewed the focus on leadership in supply chains and conducted HR assessments in Ghana and Tanzania. Nigeria began a PST program, increasing the number of countries with some level of PST in supply chain management to 11. IAPHL, founded and supported by the project, increased by 40 percent over FY2013, to a membership of 2,876 in 116 countries; it continues to be a valuable resource for the global community of public health logisticians in low- and middle-income countries.

### Supporting Strategic Thinking in Supply Chain Organizations

Creating new leaders within public health supply chains can be a high impact strategy to protect the investments made in country supply chains. Through national HR assessments and a new leadership initiative, the project expanded its work in strengthening organizational capacity building, focusing more on the importance of strategic thinking within public health supply chains (see figure 5).

In Ghana and Tanzania, the project conducted in-depth national HR assessments that resulted in targeted recommended actions for each country. In mainland Tanzania, as a result of the assessment, the MOH plans to transform the role of pharmacy assistants to assume more supply chain management responsibilities; and, in Zanzibar, the MOH plans to establish an LMU to oversee and coordinate local commodity logistics activities. In Ghana, key results from the assessment were adopted to develop a sustainable and effective human resource capacity development plan for the supply chain.

To be effective, supply chains must have a skilled and capable workforce. Increasing the capacity of individuals and institutions improves supply chain performance and encourages local ownership.

In FY 2014

**15,839** people trained by the project

**9** courses taught by regional institutes

**3,687** learning sessions completed through online courses



presence countries with a pre-service training program



presence countries with a logistics management unit or dedicated supply chain management positions



Figure 5 Human Resources for Health Building Blocks (CapacityPlus framework adapted by the USAID | DELIVER PROJECT)

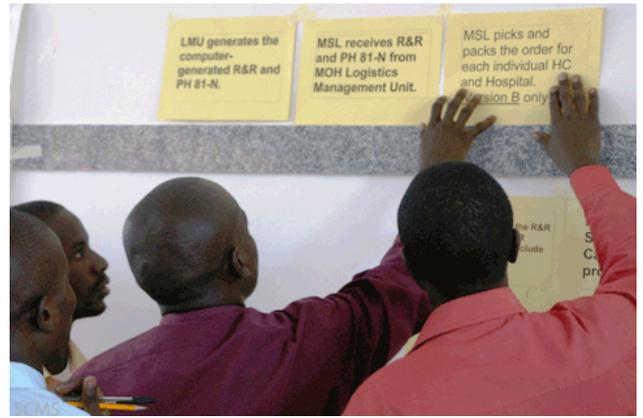


The project’s *Human Resource Capacity Development in Public Health Supply Chain Management: Assessment Guide and Tool* (USAID | DELIVER PROJECT 2013a) was used to conduct assessments; not only by the project, but other organizations also benefitted from using this methodology: Bioforce in Burkina Faso, IntraHealth in El Salvador, the Ministry of Health in Namibia, CHAI in Liberia, and USAID in Mozambique. The outcomes from an assessment give advocates and decisionmakers the facts and analyses they need to effectively promote professionalization of the supply chain management workforce. People that Deliver (PtD) and the Gavi Alliance adopted this tool and they are adapting it for use in the immunization field.

Supply chain champions can be powerful catalysts to transform public health supply chains. During FY2014, with SIAPS and SCMS, the project launched a new initiative to develop supply chain leaders at the country level. The partners joined supply chain stakeholders from around the globe for a two-day workshop to develop the structure for the initiative, which culminated in a concept paper and an implementation plan.



Health products are being loaded for Zambia's Essential Medicines Logistics Improvement Programme (EMLIP), a system that helps health facilities tailor their supply needs, based on consumption.



In Lusaka, Zambia, logisticians attend a supply chain management and quantification training.

The initiative will form the National Supply Chain Leadership Development Networks to boost the effectiveness of leadership roles, especially in middle- to senior-level supply chain positions. The leaders will be trained, assessed, and supported to act as change agents, who can work on specific country-level supply chain challenges. Their training will help empower teams, build operational capacity; and, ultimately, improve supply chain performance.

Individual countries took further steps to build and equip dedicated supply chain units or to strengthen the entities in charge of supply chain functions. In Guinea, learning and momentum gained from a three-day tour in FY2013 to study Zimbabwe's LMU helped Guinea's MOH, central pharmacy, and other stakeholders develop and design an LMU in that country. The approved design of the LMU at the central pharmacy includes six dedicated LMU positions.

In Tanzania, the project, in collaboration with the Ministry of Health and Social Welfare (MOHSW), supports the implementation of an LMU that coordinates logistics management activities for multiple commodity categories. LMU training and orientation in FY2014 included basic logistics training for 23 new LMU staff, intervention planning, quantification, and supportive supervision. The project also worked with the MOHSW and the Medical Stores Department to develop its first workplan and performance monitoring plan, and to lead the first two LMU

quarterly technical meetings; where the LMU team will be able to share experiences, best practices, and knowledge; discuss progress; and monitor performance.

In Zambia, the project worked to strengthen Medical Stores Limited's (MSL) ability to absorb supply chain management and oversight responsibilities (USAID |DELIVER PROJECT 2014). The project provided an orientation package, including field visits for three new directors, to increase their knowledge of the sector and functional operations of the MSL. The project also sponsored a retreat for the MSL board to confirm the vision and priorities for the MSL, establish board roles and responsibilities, educate the board on supply chain management, and develop relationships between the new board members and MSL management.

## Sustainable Development for the Supply Chain Workforce

During the past several years, PST has proven to be a sustainable approach for ensuring that skilled logisticians are trained every year. To establish PST in a country, the project typically works with schools of pharmacy and nursing to incorporate health logistics into their curricula. Such training teaches students the principles and applications of health logistics before they are placed as nurses or pharmacists in health facilities across the country.



During a field trip, a pharmacist (left) at an SDP shows pharmacy students from Kwame Nkrumah University of Science and Technology how to use inventory control cards.



Supply chain management training in Zambia Photo Credit: Arturo Sanabria, SCMS

During FY2014, the project started a new PST activity in Nigeria, working with SCMS colleagues to expand the existing curriculum in the schools of pharmacy. The updated curriculum includes more in-depth instruction in quantification and procurement.

During previous years, PST was established in Ethiopia, Ghana, Mozambique, Nicaragua, Tanzania, Malawi, Pakistan, Rwanda, Zambia, and Zimbabwe. In Ethiopia, where PST was first introduced in 2009, the project compared the cost effectiveness of PST versus in-service training to help guide supply chain training policies for the public sector. The study showed that PST is significantly more cost effective than in-service training; with cost savings for transport and per diem, and reducing lost work time.

In Ghana, the project established a new certificate program in supply chain management for last-year pharmacy students at Kwame Nkrumah University of Science and Technology (KNUST) and Central University College (CUC); so far, 325 and 70 students have graduated from KNUST and CUC, respectively. In nursing training colleges, 208 tutors across the country received instruction to train their students. It is estimated that approximately 18,000 students will graduate from the training colleges at the end of the academic year. With the added logistics knowledge, these nurses will be better prepared to ensure that they have the supplies they need for better service delivery.

In Ethiopia, the project trained 50 graduating pharmacy technicians from Mekele's Dr. Tewolde Legesse Health Science College and Harari Health Science College in the IPLS during the last year. The project also supported Ethiopia's PFSA and CHAI to provide IPLS training to 119 graduating pharmacy students of Addis Ababa University and Gondar University.

To sustain the implementation of the IPLS and reach more health facilities in Ethiopia, the project, with PFSA and the Regional Health Bureaus, designed a strategy to graduate facilities whose performance reaches an acceptable level. This year, 173 health facilities successfully graduated from routine support, 87 percent of the target set for the year. Before graduation, joint visits ensure zone and woreda health office buy-in; agreements signed with the respective health offices, PFSA, and health facilities specify future roles and responsibilities in supporting the graduated facilities. To ensure that performance is maintained, the facilities will receive integrated supervision visits from woredas, as well as occasional spot checks from the project.

Pakistan also took steps to ensure that the appropriate human resources are being built to sustain its supply chain investments, particularly in LMIS automation. To ensure country ownership and to build capacity for nationwide rollout of the system, the project secured local government commitment for ongoing capacity building and monitoring, and facilitated discussions with donors in

each province to advocate for funding support that would supplement the efforts of the government of Pakistan in routine validation and use of data. The project selected and developed the capacity of 100 master trainers from all system levels; who, in turn, trained more than 2,000 LMIS users and will provide ongoing supervision and on-the-job training.

To support continuous learning for supply chain professionals and the public health logistics community, the project, with significant contributions from JSI, hosts the secretariat for IAPHL and continues to develop it as an organization. During FY2014, membership in IAPHL grew at a rapid pace, adding 821 new members—an approximately 40 percent increase and a total of 2,876 members from 116 countries (see figure 6). IAPHL actively recruited new members through activities, such as the May Membership Drive; their increasing virtual presence includes the IAPHL website, various social media outlets, and cross-posting on other listservs. IAPHL continues to offer rich technical content by regularly hosting engaging discussions on its listserv.

During FY2014, the project developed a mentoring program as a mutually beneficial partnership for both the mentor and their mentees. This program will provide targeted learning opportunities from experts for a group of members with similar learning objectives. The three-month mentoring program sets specific goals and objectives for each mentee and concludes with an evaluation. The project advertised the program and the application process is ongoing.



*IAPHL members attended a training-of-trainers workshop in Nigeria on laboratory logistics management.*

MOHs often face significant challenges in recruiting the employees they need to manage supply chain operations. To help managers hire the right supply chain professionals, the project published a new toolkit, *Recruiting Supply Chain Professionals: A Ready Reference Guide for Finding and Selecting High Performers* (USAID | DELIVER PROJECT 2013c). It includes easy to use templates for each stage of the hiring process (see figure 7). The recruiting toolkit is also available on the project’s website.

**Figure 6. IAPHL Membership Growth, August 2008–September 2014**

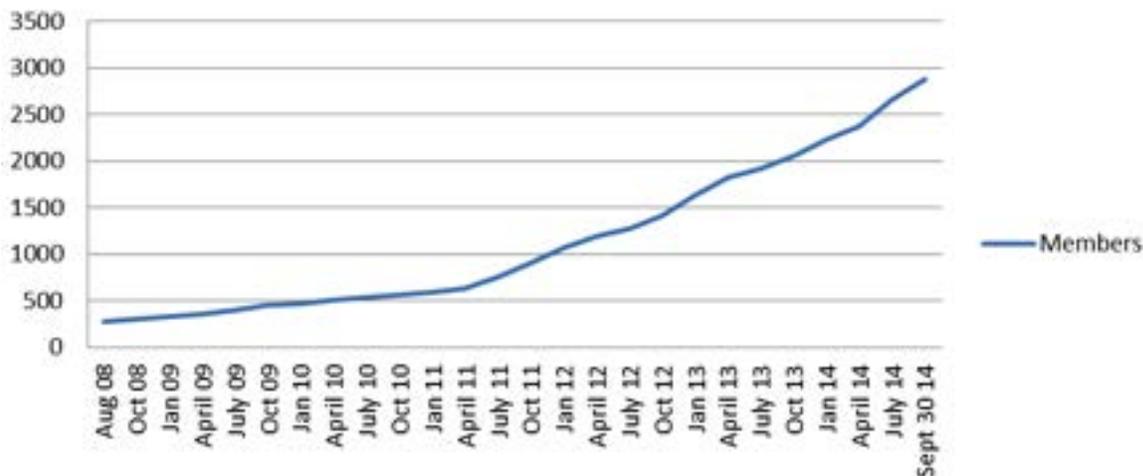


Figure 7. Six Steps of the Recruiting Process



## Improving Global Access to Logistics Training

Access to learning in supply chain management is a key component for strengthening supply chains. The project builds programs that extend learning opportunities to local and global audiences alike. Logisticians can access supply chain management knowledge through in-person classes conducted by four RTIs. They can also tap into online learning through JSI's e-learning website, where users can earn a certificate after completing the project's eight-module flagship supply chain management course (John Snow, Inc. 2015).

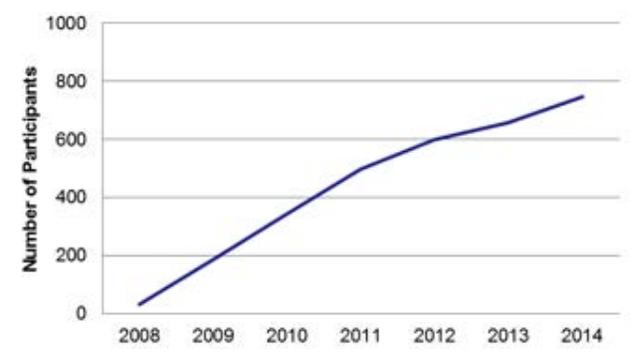
To supplement the in-depth courses, the project developed three 10–20 minute videos on forecasting, supportive supervision, and disposal of unusable health commodities (see figure 8). The videos were shared widely through the project's website and other dissemination channels. The project and SCMS use the videos as a learning component during trainings; partners can ask for them on a DVD or download them from the project's website.

During FY2014, the RTIs conducted nine courses; 113 people were trained. Since the program was introduced in 2008, the institutes have trained 746 people (see figure 9) through 50 courses (see figure 10). The University of Ghana, School of Public Health, added as a RTI in 2014, offers English-language supply chain management courses in the West Africa region. To evaluate the benefits of establishing these regional training hubs, the project created

Figure 8. Scene from Project's Video on Disposal of Unusable Health Commodities



Figure 9. Participants Trained by Regional Training Institutes



a comprehensive survey to collect data from each RTI. The survey captures data on a variety of qualitative and quantitative indicators, enabling the institutes to reflect on the process and resulting outputs of their organizational development experience. The data will be used to make recommendations for future initiatives; results are forthcoming.

The project’s online supply chain course, Lessons in Logistics Management for Health Commodities, remains an important resource for logisticians and other stakeholders looking to build their supply chain management knowledge. The courses are free of charge through JSI’s online learning portal (<http://elearning.jsi.com>) and the learning management system operated by LINGOs. During

FY2014, participants completed 3,687 individual learning sessions through the two online portals.

The project also undertook focused logistics training in a number of countries:

- Participants in the four focus countries of the West and Central Africa regional contraceptive security initiative—Burkina Faso, Mauritania, Niger, and Togo—engaged in logistics training (with additional focus on quantification), with the goal of building a cadre of qualified logistics professionals in the region.
- In Nicaragua, the project undertook supply chain management training with organizations working with most-at-risk populations, as part of institutional strengthening efforts for NGOs working in HIV prevention and care. The project developed an educational package covering supply chain topics cited by NGO staff in an assessment of storage conditions and management of health supplies. Participants in the trainings included 107 people from 42 NGOs, which also resulted in developing action plans for making warehouse improvements.

Overall, the project trained 15,839 staff from all levels of the supply chain, in 20 of its presence countries. Of the personnel trained, 56 percent were men and 44 percent were women. While many of the people trained came from higher levels—central, district, and region—a majority (62 percent) came from the SDP level (see figure 11).

Figure 10. Regional Training Institutes Extend Supply Chain Capacity Building Reach

The project’s investments in developing the capacity of Regional Training Institutes resulted in five organizations that can offer supply chain training on two continents and in multiple languages.





Logisticians in Nicaragua receive training in supply chain management.

Figure 11. Staff Trained at Various Levels of the Supply Chain in Project-Supported Countries, FY2014



Humanitarian Logistics Association submitted a joint proposal to participate on a panel to discuss supply chain management professionalization.

## Global Partnerships and Collaborations

Project participation in global forums and partnerships plays a key role in raising awareness of the importance of skilled logisticians. Throughout the year, the project has collaborated with partners from academia, NGOs, and global organizations to advance the agenda for professionalization of the supply chain workforce. Within the PtD initiative, the project led the Technical Working Group and the Advocacy and Knowledge Management Working Group. The project also coordinated with the Reproductive Health Supplies Coalition (RHSC) System Strengthening Working Group to encourage the use of the LAPTOP database.

As a leader in the field of health supply chain management in low-resource settings, the project shared its cutting-edge approaches in several forums, including the Global Health Supply Chain (GHSC) Summit in Addis Ababa, Ethiopia, and the RHSC membership meeting in Delhi, India. The project, part of the GHSC Summit organizing committee, helps make key decisions with academic and other supply chain management stakeholders that will enrich the technical content and create additional networking opportunities for IAPHL members. In November 2013, IAPHL sponsored 13 of its members to attend the GHSC Summit, most of them public health logisticians from African countries. For the 2014 GHSC Summit, IAPHL, PtD, CapacityPlus, Resolog, and the



## Improving Commodity Security Through Data-Driven Policy, Advocacy, and Planning

In addition to strengthening logistics systems and building capacity within supply chain organizations, the project supports the policy, planning, advocacy, and coordination activities that contribute to product availability. By shaping enabling environments, the project improves commodity security, which exists when every person is able to choose, obtain, and use quality contraceptives whenever they need them.

The project develops resources and tools that help manage and secure financing for commodities and supply chain operations. To increase the knowledge base of best practices and to generate evidence that bridges the technical/advocacy divide, the project conceptualizes and tests innovative approaches in areas that include performance improvement, market segmentation, and costing, including how to effectively introduce service fees.

Working with donors, MOHs, and other stakeholders; the project supports coordination and resource mobilization efforts to detect and alleviate critical gaps in funding, which help avert stockouts and, ultimately, save lives. To prevent supply shortages through routine planning, increasing emphasis is placed on the availability of data for decisionmaking and regularly scheduled quantification activities undertaken by local stakeholders.

## Improving Financial Tracking and Advocacy for Funding Commodities and Supply Chains

For several years, the project has collected financial data through the Contraceptive Security Indicator survey to track how health supply chains are funded in various countries. Survey responses revealed that some countries had a limited understanding of the financial situation affecting their supply chain. This knowledge, as well as work done in Ghana and Uganda, spurred the development of a guide to help countries manage and improve contraceptive financing. The guide—*Enhancing Contraceptive Security through Better Financial Tracking: A Resource Guide for Analysts and Advocates* (Rosen and Sacher 2013)—illustrates how to determine tracking needs, map financial processes, and use the information to

Commodity security focuses on the broader environment of supply chains—helping global and in-country partners apply advocacy and strategic interventions to ensure a sustainable flow of health commodities.

### Contraceptive Security (CS) Indicators

**47 countries** surveyed on financing for contraceptives, methods offered, policies, coordination, and the strength of the supply chain.

Countries surveyed increased from 43 to 47

**89%** of countries have a committee that works on CS



**85%** of countries have a CS strategy



**65%** contribute government funds for contraceptives.

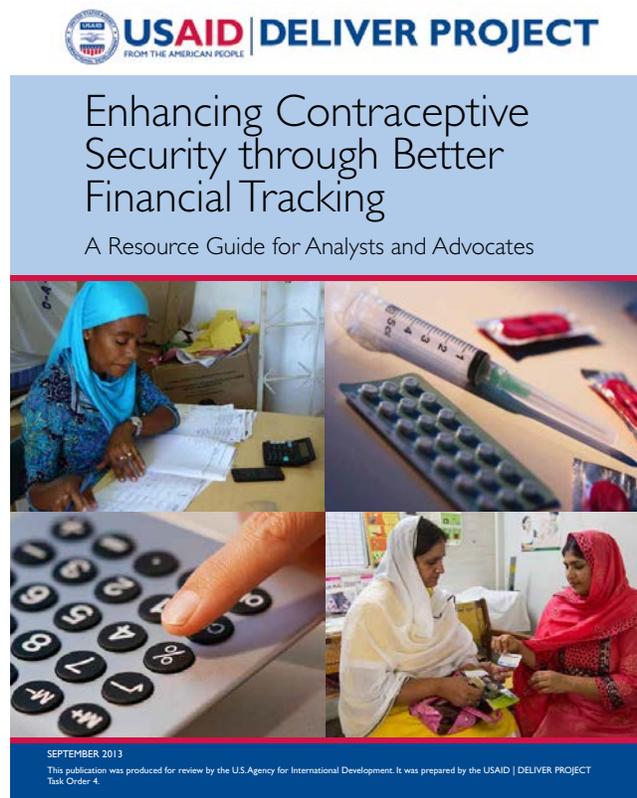


advocate for increased financial commitments for contraceptives and other health supplies (see figure 12).

To empower countries to track and achieve financial commitments, based on the guide, the project developed a three-day training for stakeholders from Kenya, Nigeria, Tanzania, Uganda, and Zambia. In the training, which was held in collaboration with the Reproductive Health Supplies Coalition's Advocacy & Accountability Working Group and Population Action International (PAI), each country team developed an action plan for financial tracking and advocacy for their country. The training built on existing supply tracking efforts and identified advocacy entry points for mobilizing resources for reproductive health commodities through government officials, civil society members, and technical experts. Follow-up indicates an increased level of advocacy engagement for most countries, and promotes sustainability for health commodity financing in the long term.

Health commodity and supply chain financing typically come from a variety of sources. One source, service fees, can be used to help pay for the cost of supply chain

Figure 12. Resource Guide for Analysts and Advocates



operations. In the guide, Financing the Health Commodity Supply Chain: The Role of Service Fees (Sanderson, Wright, and Rosen 2014), the project provides practical information for developing, justifying, and applying evidence-based service fees (see figure 13). During the year, the project used this document to support the design of planned service fee analyses in Tanzania and Zambia.

For the sixth year in a row, the project collected data for the CS Indicators, which play an important role in the project’s advocacy work. In FY2014, the CS Indicators provided information on financing for contraceptives; methods offered; policies; coordination; and the strengths of the supply chain in 47 countries—an increase from 43 participating countries in FY2013. Based on feedback from the stakeholder community, task-shifting questions were added to the survey this year.

This year’s survey indicated that 89 percent of countries have a committee that works on CS, 85 percent have a CS strategy—92 percent of these strategies are currently being implemented—and 65 percent contribute government funds for procuring contraceptives. The project’s CS data and findings have been widely disseminated; this information contributes to global conversations and is used by other organizations, including the Advance Family Planning Project, United Nations Population Fund (UNFPA), and others (see figure 14).

Figure 13. Good Management and Financial Practices Support Service Fees



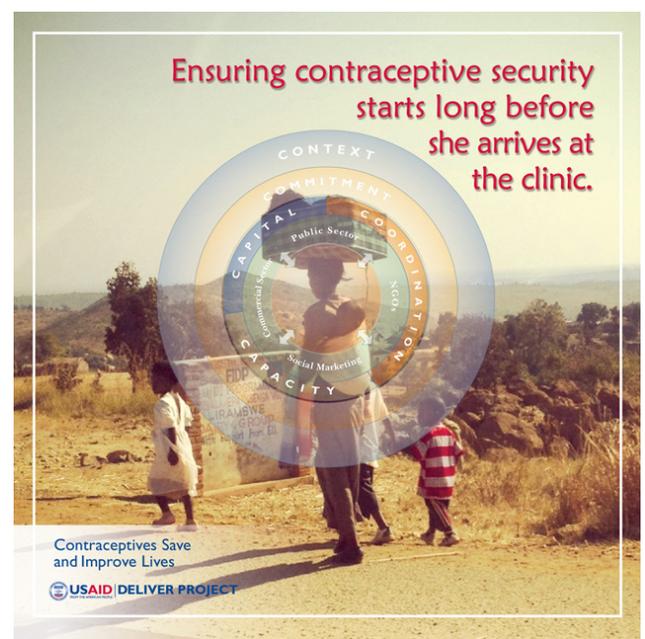
These five management and financial practices support service fees, as well strategic and operational planning.

CS data developed by the project was presented at American Public Health Association (APHA) 2013 conference in Boston, Tanzania Family Planning Conference, 9th Congress of the Francophone Society of Contraception (Ouagadougou), and Track 20 M&E Officer Training (Nairobi). The CS Indicators were also shared at regional workshops in LAC, including the CS and new champions workshop in Guatemala and the recent RHSC LAC Forum meeting in Mexico. In Guatemala and the Dominican Republic, CS Indicators are part of CS monitoring plans.

Other places where CS Indicator data were used during FY2014 include—

- International Consortium for Emergency Contraception Status and Availability database (<http://www.cecinfo.org/country-by-country-information/status-availability-database/countries/ghana/>)
- High Impact Practices in Family Planning Financing Commodities and Services Brief ([https://www.fphighimpactpractices.org/sites/fphips/files/hip\\_financing\\_brief.pdf](https://www.fphighimpactpractices.org/sites/fphips/files/hip_financing_brief.pdf))
- Why Global Goals and Indicators Matter: The Experience of Sexual and Reproductive Health and Rights in the Millennium Development Goals—article in

Figure 14. CS Indicator Factoid Shows the Importance of Contraceptive Security





A storekeeper in Lahore, Pakistan, is updating his contraceptives stock register.

the Journal of Human Development and Capabilities (Yamin and Boulanger 2014)

- A synthesis of data on government and donor funds for contraceptives in Kenya, Tanzania, Uganda, and Rwanda by PAI.

In Mozambique, the Reproductive Health Subgroup of the Medicines Technical Group—which guides the work of the CMS in Mozambique—continues to be active, with quarterly meetings between the Reproductive Health Department and key nongovernmental reproductive health providers in-country—UNFPA, JHPIEGO, and Pathfinder—for regular review of logistics and survey data and responding to commodity shortages and stockouts. In FY2014, the project introduced the reproductive health subgroup to the quantification methodology for United Nations Commission on Life-Saving Commodities (UN-CoLSC) commodities. As a result, the subgroup elected to add oxytocin, misoprostol, and magnesium sulfate to the list of drugs it will quantify and monitor; and, to its quantification methodologies, they added the UNCoLSC methodologies for quantification of implants and female condoms.

Similarly, the project in Nigeria continued its work to ensure the institutionalization of coordination meetings for CS. Led by the Family Health Division of the Federal Ministry of Health, the project facilitated monthly procurement and supply management meetings of key donors and implementing partners, including USAID, Department for International Development (DFID), and

UNFPA. Partners leverage their skills to monitor and jointly resolve family planning procurement and supply management issues and to achieve commodity security through activities, such as finance tracking, advocacy for funding, resolving delays in clearing consignments, and strategizing on quantification for contraceptives. This forum successfully garnered commitment and engagement of key donors for additional funding for contraceptives.

In an advocacy triumph, aided by the project’s technical assistance, several provinces in Pakistan have allocated funds for commodity procurement for the first time since the devolution of the health system in 2011, specifically—

- Sindh province: \$U.S.55.6 million for procuring and transporting contraceptives for the next five years (2014–2019), with \$U.S.6.9 million for procuring contraceptives in 2014–2015.
- Punjab province: \$U.S.11.7 million for procuring contraceptives for 2014–2015.
- Khyber Pakhtunkhwa province: \$U.S.974,000 for procuring contraceptives for 2014–2015.

## Economic Evaluation

Countries are increasingly interested in the ongoing costs required to fund their health supply chains. Having these data enables stakeholders to evaluate economic considerations when making decisions that affect the supply chain. During FY2014, the project developed the guide, *Economic Evaluation: Guide to Approaches for Public Health Supply Chains* (Rosen 2014), a framework that defines several of the main types of analyses, including cost effectiveness, cost benefit, and return on investment. This guide can help decisionmakers compare costs and consequences of alternative supply chain investments (see figure 15).

Expanding the use of costing data and economic evaluation has led to new ideas for elevating the awareness of supply chain costs and improving performance; including, for example, a costing dashboard in Rwanda for enhancing the ongoing monitoring of supply chain costs and efficiency. The dashboard, which aggregates data from Rwanda’s 28 district pharmacies for use by the national Logistics Management Office, helps improve performance by tracking operational efficiencies better. The project is also adapting the dashboard for use in Guatemala and Peru.

The project also carried out baseline costing and cost analysis to measure the impact of establishing an electronic LMIS and a national logistics management unit in Tanzania; and to evaluate the new ZAPS system design in Zimbabwe, which merges the management of four separate supply chains into one, integrated system. In March 2014, the project hosted the 4th Supply Chain Costing User's Group meeting, drawing 24 participants from organizations involved with in-country supply chain costing activities. The meeting focused on economic evaluation of supply chains, incorporating the experience of the project and other organizations in undertaking cost effectiveness and cost benefit analyses.

Finally, the project's Excel-based supply chain costing tool was supplemented with the Guide to Public Health Supply Chain Costing: A Basic Methodology (McCord, Tien, and Sarley 2013), which documents the project's adaptation of a commercial best practice into a methodology for informing policy and operational decisionmaking for public health supply chains. The costing tool and supporting documents are being used in many countries to facilitate the data collection, analysis, and report generation required for a supply chain costing exercise (see figure 16).

## Market Analysis and Commercial Sector Engagement

To achieve commodity security, it is beneficial to include stakeholders from all sectors. With a total market approach, suppliers and financiers from all three sectors—public, nonprofit, and commercial—work together to increase and/or sustain the equitable use of contraceptive products and services. The project has shown leadership in this area by (1) developing resources; (2) collecting and analyzing data; (3) supporting the evolution of country-specific contraceptive security committees with multi-sectoral participation; and (4) facilitating formal discussions among technical experts about developing new strategies, approaches, and interventions.

To successfully engage all sectors, the project developed A Participatory Approach: Using Evidence to Support a Total Market Approach to Family Planning (2014a), including a suite of tools that takes stakeholders through a highly participatory process to analyze, understand, and use market analysis data for decisionmaking related to policy and the provision of services and products. The process

Figure 15. Components of Economic Evaluation of Supply Chains

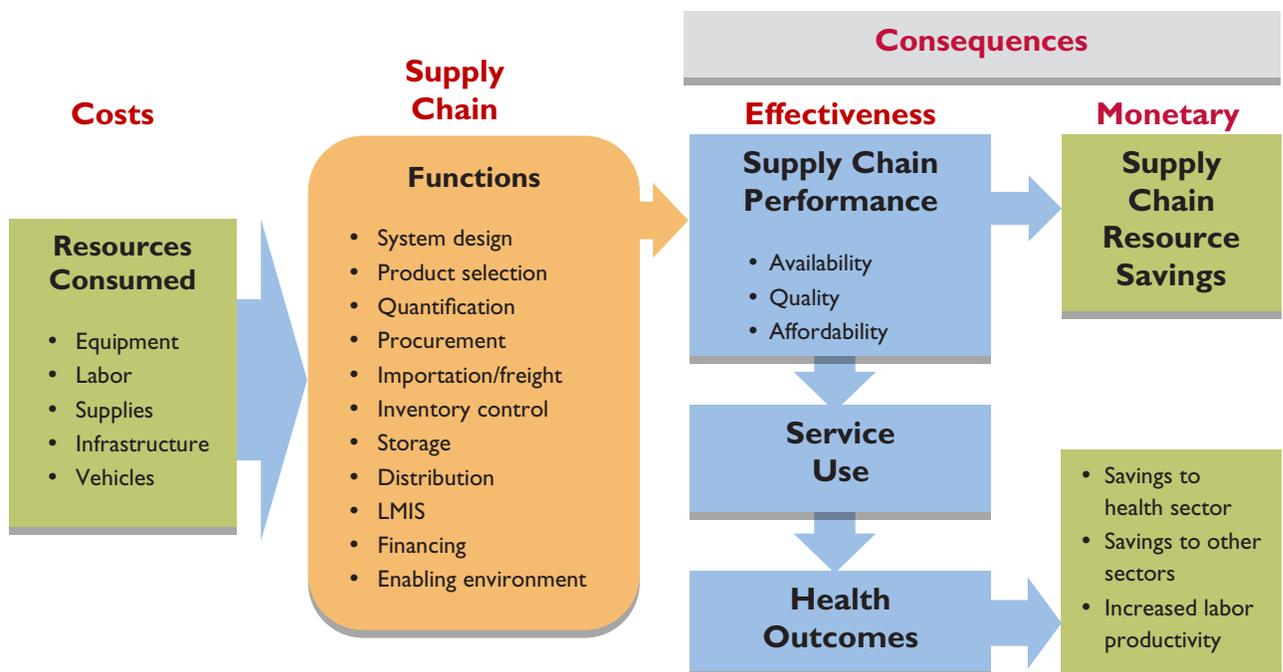
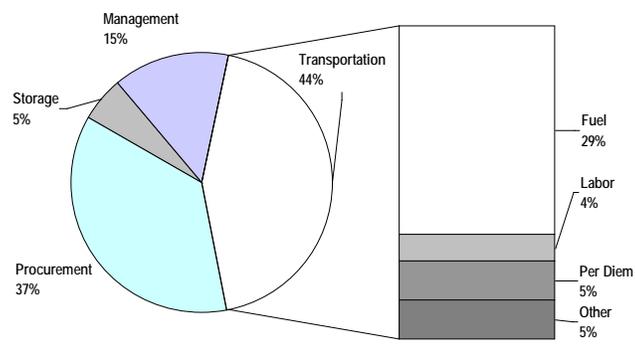


Figure 16. Supply Chain Cost Driver Analysis



helps maximize the resources of each sector and encourages the development of coordinated strategies to identify and reduce gaps in family planning services and supplies.

Recognizing that Family Planning 2020 goals cannot be met by relying exclusively on public sector programs and donated commodities, USAID is increasingly looking at ways to encourage the commercial sector to contribute to a sustainable contraceptive supply in African countries. To this end, the project organized and hosted the initial meeting of the Commercial Technical Advisory Group, comprising six members with technical, geographic, and leadership experience in the pharmaceutical and fast-moving consumer goods

industries, academia, health market data, global health, and women’s development issues. The Technical Advisory Group provided strategic guidance for USAID’s contraceptive investments in emerging markets in Africa.

## Performance-Based Financing

The project completed the third year of a three-year effort to expand the knowledge base on performance-based financing (PBF) by publishing a technical brief, *Experiences and Lessons Learned from Pay-for-Reporting Schemes in Public Health Supply Chains* (USAID | DELIVER PROJECT 2014c); it summarizes the experiences in Tanzania, Nicaragua, Rwanda, and Zambia. Pay-for-reporting schemes that provide incentives based on performance are intended to use incentives to improve the timeliness, quality, and accuracy of reports within public sector health supply chains.

In Mozambique, the project continued its collaboration with the USAID Mission and the Health Financing and Governance project on a PBF scheme, initiated in January 2013, to support performance improvements in Mozambique’s CMS (CMAM). A qualitative evaluation of the first year of operation showed performance improvements in all CMAM’s functional areas included in the agreement.



Clients at a health center in Rwanda are being trained on contraceptive method use and provision.

For the Medical Stores Department in Tanzania, the project has recently designed a PBF scheme that includes performance indicators for the central level and two of the nine zonal warehouses. In Ghana, the project completed an analysis of options for potential PBF schemes to improve the performance of the public health supply chain.

To promote the use of incentives, the project published a training toolkit that includes everything trainers might need to conduct a workshop that introduces the basics of PBI schemes for public health supply chains. A new technical thought piece—*Predictions 2035: The Role of Performance-Based Financing in Future Supply Chains in Developing Countries* (Wright, Serumaga, and Rosen 2014)—makes bold predictions for the potential role of PBF in future supply chains; it was written to encourage further debate.

## Using Data to Strengthen Commodity Security

With data from the project's PPMR, governments and donors can respond rapidly and effectively to supply shortfalls. The CARhs group monitors stock status and shipments of contraceptives for 33 countries and 47 programs; and, routinely, corrects over- and undersupply situations to prevent stockouts of contraceptives, or instances of overstock when drugs would expire and possibly be wasted.

In FY2014, PPMR data prompted CARhs actions, which included 19 unplanned shipments sent to 12 countries, and eight expedited existing shipments to eight countries to resolve or prevent stockouts. CARhs also postponed four shipments to two countries and cancelled two shipments to one country to reduce or avoid overstocks. CARhs' newest member, the West African Health Organization, facilitated a transfer of unused injectable—Noristerat—from Burkina Faso to Benin to resolve a stockout in Benin and to release much-needed warehouse space in Burkina Faso.

The West African Health Organization and the Coordinated Supply Planning group also used PPMR information to produce global forecasts and to monitor supplies of key products. With the increase in countries and programs that report in the PPMR, CARhs is looking to broaden global-level collaboration to address stock imbalances.



*Supply chain personnel take stock at a public health facility in Nigeria.*

Equally important components of commodity security are establishing National Essential Drugs Lists (NEDL) and strengthening the quantification of commodities. The project, in coordination with the Pan American Health Organization, under the leadership of the Guatemala MOH, developed Guatemala's first-ever NEDL, which was approved by ministerial decree in November 2013. To inform development of NEDL implementation plans in each region, the project organized dissemination workshops and meetings with the regions, hospital staff, technical staff, and supervisors at the central level.

As part of a quantification exercise in Liberia, the project provided guidance on the product selection of essential medicines to satisfy the healthcare needs for most of the population, in line with Liberia's standard treatment guidelines and essential medicines list. A quantification team of program managers, clinicians, pharmacists, store officers, logisticians, donors, and policymakers generated and updated forecasting assumptions and produced a supply plan.

Similarly, the project continued to provide technical assistance in quantification to Zimbabwe National Family Planning Council (ZNFPC), in Zimbabwe, in a collaborative exercise with ZNFPC, Crown Agents Zimbabwe, UNFPA, PSI, and Population Services Zimbabwe. The supply plans informed DFID, USAID, and UNFPA procurements and assisted ZNFPC in successfully mobilizing resources to fill funding gaps. As a result, condoms and contraceptives were generally available in full supply

## Procurement Planning and Monitoring Report (PPMR)

Preventing stockouts of contraceptives by monitoring stock status in **33 countries** and responding to supply crises.

### Actions in 2014

**19** unplanned shipments to **12** countries resolved or prevented stockouts

**6** shipments to **5** countries canceled or postponed to reduce or avoid overstocks



during the period under review, although some future gaps remain unfunded. The project further promoted partner collaboration through coordination forums led by ZNFPC, including the DTTU Technical and Policy Committee meetings, where partners met quarterly to discuss and resolve operational and policy issues affecting reproductive health commodity security.

## Global Partnerships and Knowledge Sharing

To accelerate learning and create a multiplier effect for the project's work, the project shares its expertise by building strategic partnerships with global organizations and implementers. To support the availability of life-saving commodities, the project contributed to the work of Technical Reference Teams (TRTs) (i.e., working groups) that were formed to address recommendations in the 2012 report of the UNCoLSC for Women and Children. The project, in particular, contributed to the supply chain-related TRT, supporting completion of a workplan that included guidance and recommended indicators for addressing supply chain barriers, and quantification and integration guidance, among other products. Project staff were also subject matter experts for other TRTs, including the Advocacy TRT and the Maternal Health TRT.

Project staff were also participants and resources in numerous market shaping efforts and interagency groups, at country and global levels, including the Family Planning 2020 Market Dynamics Working Group and the RHSC's Market Development Approaches Working Group.

The project partnered with the Inter-American Development Bank's Salud Mesoamerica 2015 to successfully advocate for including the following products in the Council of Ministers of Health of Central America-harmonized Regional Medicines List: oral and injectable contraceptives, powdered micronutrient supplements, and zinc to treat diarrhea. This policy decision enables countries to procure these products through a pooled procurement process, which gives countries access to regionally negotiated prices on an annual basis. Being able to buy at more competitive prices is a big step toward sustainability for contraceptives and other life-saving health products in the Central American countries and the Dominican Republic.



## Knowledge Management and Dissemination

A strong knowledge management strategy furthers the project's goal to improve health outcomes by improving access to health supplies. Putting the project's supply chain management knowledge and tools in the hands of global-, regional-, and national-level partners—both within and beyond the project—leads to greater impact and better sustainability of the project's work.

With knowledge sharing and strategic messaging, the project helps mobilize resources within national governments, strengthening country ownership and supporting long-term improvements in health service delivery. Through its knowledge management strategy, the project produces and disseminates best practices, innovative approaches, and new research; which helps raise awareness globally about the important role of supply chain management in securing a steady flow of life-saving health commodities in public health supply chains.

### Improving Access to Project Resources

To provide better, easier access to supply chain knowledge, the project is increasingly focusing on visual and concise communications products that can cut through crowded information marketplaces to reach and engage target audiences. Formats include infographics, data visualizations, dashboards, online toolkits, and videos, as well as traditional products—reports, posters, fact sheets, and slide presentations—with added emphasis on visuals and accessible narratives (see figure 17).

FY2014 saw the development of three short videos on supply chain technical topics—forecasting, supportive supervision, and disposal of unusable health commodities. The videos were aired on YouTube and Vimeo for public access; they are also available on DVD for use in training settings, where Internet access may not be available (see figure 18).

Access to the project website's more than 800 publicly available publications was greatly enhanced with new search features that enable a user to find resources by selecting options ranging from health area and supply chain technical topics to publication type, year, and language. The updated resources section also gives users easier access to new, featured publications, including a section that highlights the project's videos.

Figure 17. Timeline for LAC Contraceptive Security Initiative during 10 Years



Through a number of infographics, the project effectively communicated the impact of health systems strengthening and procurements. In connection with the closeout of JSI-managed activities in Nepal (USAID | DELIVER PROJECT 2014h), which spanned almost two decades, the project produced an infographic showing how USAID-funded logistics projects helped turn an ad hoc-managed supply chain into an integrated system that delivers commodities for multiple health programs. In Zambia, the project used an infographic to show the benefits of the new eLMIS, which was implemented in collaboration with Tanzania. A family planning infographic, Contraceptives Save and Improve Lives (USAID | DELIVER PROJECT

2014b), that illustrates how contraceptives help save the lives of mothers, as well as their children, was updated with more current project data (see figure 19).

The project continued to expand access to existing supply chain knowledge by issuing existing publications in new languages. For example, The Logistics Handbook (USAID | DELIVER PROJECT 2011a) was translated into Portuguese, the Guide to Health Care Waste Management for the Community Health Worker (USAID | DELIVER PROJECT 2011b) (was translated into French, and A Participatory Approach: Using Evidence to Support a Total Market Approach to Family Planning (USAID | DELIVER PROJECT 2014a) was translated into Spanish (see figure 20).

Figure 18. Video Produced by the Project This Year



## Promoting Project Resources with Targeted Dissemination

To maximize the use of project-generated resources, the project employs a systematic approach to reach target audiences, including dissemination through the project's website, Facebook, Tumblr photoblog, Twitter, Instagram, Vine, Vimeo, and YouTube; and postings on a broad range of public health outlets, including various social

media channels, blogs, listservs, and forums. External channels that are routinely used in dissemination efforts include listservs, including IAPHL, E-Drug, Afronet, and HIPNet; and technical forums, including Tech-Net and the PSM Toolbox.

Strategic partnerships with other organizations enable the project to reach diverse audiences interested in the project's work. These include organizations, such as K4Health, which features the project's publications and toolkits; the Global Health Africa blog, which published a blog on the project's work with GPS data in Nigeria; and the Maternal and Child Survival Program, which collaborates with the project on social media outreach. This approach has expanded the project's reach, bringing supply chain knowledge to new audiences.

Blogs are an increasingly important outlet for sharing project results. During FY2014, the project published eight blog entries on topics ranging from family planning advocacy by youth champions in Latin America, using drug management information systems to fight TB in Pakistan, to getting contraceptives to clients in rural Nigeria. The articles were posted on JSI's The Pump, the Global Health Africa Blog, and USAID's Impact Blog.

This year, the project more than doubled its social media outreach and broadened its dissemination with content published to Instagram and Vine, which distributes six-second videos. Instagram is a complement to the photoblog, offering an alternative way to link to the project's photos. The project also began using Constant Contact to produce visually appealing .html emails to distribute project updates to its mailing list of more than 1,100 people from global and national supply chain management and contraceptive security networks, who benefit from the project's supply chain knowledge base.

Using tagged links and Google Analytics, the project tracks the responses generated by all its dissemination channels, making it possible to identify the level of response to a specific publication or news update. With insight into how the project's materials are being used, we are able to effectively target audiences that can benefit most from the project's resources.

Photos from the Tumblr Last Mile photo blog were reblogged by followers and shared on Facebook, Instagram,

Figure 19. Updated Infographic—How Contraceptives Save and Improve Lives

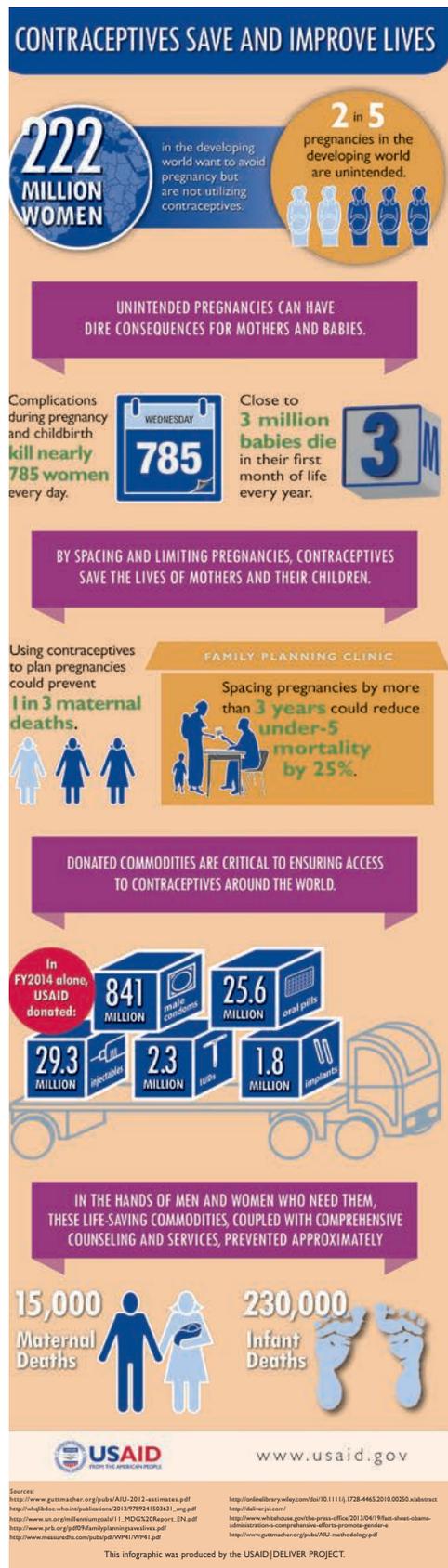


Figure 20. Guide to Health Care Waste Management for the Community Health Worker



and on the SCMS website. Some photos were also used by USAID, RHSC, and PtD. The Last Mile photo blog was featured on the World Contraception Day 2014 Global Health News Contraception Day Special Edition in September 2014. Since February 2014, the blog has included postings from both USAID | DELIVER PROJECT and SCMS. During FY2014, 775 users visited the blog, with 2,162 page views. They primarily accessed the site through links from the project's website, Google, SCMS, and JSI.

In FY2014, the USAID | DELIVER PROJECT received more than 13 percent of its website referrals from social media outreach; social media is one of the top three ways users access the project's website. The number of tweets scheduled monthly has more than doubled, averaging

more than five tweets per day for a total of 1,886 tweets during FY2014. The project began FY2014 with 550 Twitter followers and ended with 1,334, outnumbering the 1,181 accounts that the project is following.

The project used World Contraception Day as an opportunity to highlight the need for contraceptives and how supply chains play a critical role. In an open letter titled, "A Chair at the Top? The Importance of Leadership for Public Health Supply Chains," the project's TO4 director, Walter Proper, emphasized the value of leadership for supply chain management. Similarly, in connection with World Population Day, the project's IQC manager, Edward Wilson, advocated for access to family planning through better supply chains. For World Contraception Day, the project hosted a Thunderclap, inviting other organizations to send a scheduled Twitter message from the USAID | DELIVER PROJECT on September 26, 2014 at 9 a.m. The Thunderclap successfully reached 259,490 people with the message, "Contraceptives save and improve lives by reducing maternal and child deaths #WCD2014 <http://thndr.it/1wNoPSN>."

## Conferences and Peer-Reviewed Journals

Project staff played an integral role in advocating for the importance of supply chain management and educating stakeholders globally and nationally on the tools and approaches that the project developed. In FY2014, project staff attended more than 10 major conferences and meetings worldwide, reaching thousands of people in the supply chain and broader public health community; including the International Conference on Family Planning (ICFP); the GHSC Summit; the RHSC meeting; the American Public Health Association meeting; the Health and Humanitarian Logistics Conference; the Health Services Research conference; and the Council of Supply Chain Management Professionals conference, where the project's and SCMS' DTTU solution was a finalist for the 2014 Supply Chain Innovation Award. The project presented at the conference and was interviewed for SupplyChainBrain, an online news source. During the year, the project made 35 presentations at eight conferences.

Social media is increasingly important for disseminating resources and communicating project impact to the supply chain management community.

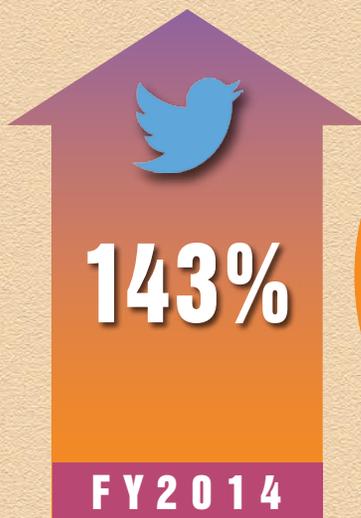


In FY2014, the project engaged audiences through five major social media platforms.

During FY2014, the USAID | DELIVER PROJECT's social media reach more than doubled.



### Twitter Followers



In FY2014, the project sent 1,886 tweets, averaging 5 a day.



## THUNDERCLAP

On World Contraception Day 2014, our Thunderclap campaign reached **260,000 people**.

#WCD2014

Social media fuels website traffic.



In FY2014, **social media** became one of the top three ways that people access the project website.

**13%** of website users came through social media.





Project leadership are interviewed for Supply Chain Brain

Figure 21. Nigeria: Using Family Planning Supply Chain Costing for Budgeting and Advocacy

**Nigeria: Using Family Planning Supply Chain Costing for Budgeting and Advocacy**

Cary Spisak, David Sarley

#### Background

Well-performing supply chains improve health outcomes by ensuring the availability of essential medicines at health facilities. Reliable information about supply chain operating costs can help stakeholders make sound decisions to—

- strengthen supply chain performance
- support advocacy for supply chain funds
- realign pricing policies.

In 2010, Nigeria's Federal Ministry of Health (FMOH) faced several such decisions. To inform these decisions, the FMOH sought to understand the costs of the contraceptive logistics management system.

#### Program Intervention/Activity

To improve efficiency and harmonize elements of its existing parallel supply chains, the FMOH began to evaluate possible structural changes to the contraceptive supply chain. This supply chain had been funded through a cost recovery model based on user fees charged to clients. At the same time, the Government of Nigeria announced that it would eliminate the user fee, which it considered a cost barrier to users. This plan would eliminate the source of funds for contraceptive distribution. The forthcoming changes would require that all 36 states and the Federal Capital Territory (FCT) in Nigeria—

- prioritize supply chain improvements
- decide how to reorganize and refinance contraceptive distribution
- determine how to accommodate a potentially significant increase in client demand because the cost barriers were eliminated.

The states used the results of a supply chain costing study to estimate the cost impact of distribution designs and budget decisions.

#### Results/Key Findings

Study results showed—

- high fixed costs and low contraceptive commodity volume throughput at all levels
- given the system throughput, labor and warehousing were arbitrarily allocated and underutilized
- transportation at lower levels was not optimal, with exclusive transport of contraceptives resulting in underuse of cargo space.

These findings indicated that an increase in throughput may be possible without significantly increasing costs.

Updated forecasts showed that most of the states handle relatively small volumes of contraceptives, lower-level distribution volumes were less than the capacity of a small passenger vehicle. Annual costs for the proposed distribution models were estimated at less than N4 million (\$26,000), each, for 26 of 37 states; and N127 million (\$0.85 million) for all states.

#### Methodology

The FMOH completed a supply chain costing study using the Supply Chain Costing Tool (SCCT), an activity-based approach to analyzing costs developed by the USAID | DELIVER PROJECT. The study sampled facilities in six states that offer family planning (FP) commodities, as well as the supply chain functions carried out by the FMOH and its national partners: UNFPA, USAID, and DFID. Study organizers extrapolated sample results to estimate national supply chain costs.

After the study, the FMOH held two national workshops for FP coordinators and the directors of primary healthcare. Participants updated their commodity forecasts, then used data from the costing study and budgeting tools to—

- determine the volume of commodities they would need to distribute
- identify the costs associated with various distribution system scenarios
- estimate distribution costs relative to the value of the commodities distributed
- compare distribution systems.

Each state drafted an operational plan that became its main advocacy tool. The plans included—

- forecast volumes
- a proposed distribution model
- key assumptions
- annual distribution cost estimates
- clear next steps and follow-up actions to ensure funding.

#### Program Implications/Lessons

- Knowing the actual costs of getting commodities to health facilities is essential for program planning, budgeting, and advocacy. For Nigeria, costing was critical for making decisions about the supply chain design and fund requirements at the state level.
- Supply chain cost information can help estimate the impact of changes to a supply chain. Using cost scenarios and cost comparisons, Nigeria's states selected the most cost-effective distribution models that supported the rational use of resources.
- Costing data can highlight risks in the supply chain. By comparing balances in the cost recovery accounts to the estimated costs of distribution, the states estimated the number of months they could fund commodity distribution before funds were depleted. This also showed which states were most at risk for distribution disruptions because of insufficient funds.

#### Estimated National Contraceptive Supply Chain Costs by Function

27%	Management
23%	Transportation
37%	Storage

\* Excludes costs for the cost recovery commodities.

#### Costing Study Results

Distribution cost per \$1 of commodity value: \$0.88

Distribution cost per \$1 of commodity value with new forecasts and distribution models: \$0.12\*

\* Size and volume of commodities received significantly reduce risk to costs, resulting in lower cost per dollar of supply chain performance.

At the ICFP, the project led a panel that demonstrated how increasing product availability through improved supply chain performance has a profound impact on the health of individual women and children, as well as on the social and economic well-being of families and communities. At the same conference, the “Nigeria: Using Family Planning Supply Chain Costing for Budgeting and Advocacy” (USAID | DELIVER PROJECT 2013b) poster described Nigeria’s efforts to understand the costs of the contraceptive logistics management system (see figure 21).

Publishing through peer-reviewed journals enables the project to contribute knowledge in new forums. In collaboration with MEASURE Evaluation, the project wrote a paper detailing the findings from research into the effects of access on demand and use of injectable contraceptives in Malawi (Skiles et al. 2015). The researchers found that access to services, measured both in geographical distance and a reliable supply of products, is an important predictor of injectable use. The paper was submitted for publication to a peer-reviewed journal, International Perspectives on Sexual and Reproductive Health (Skiles et al. 2015).

The project’s work on performance-based financing was featured in the Journal of Health Services Research as part of the supplement, “Health Services Research: Evidence-based practice,” with content from the poster presentation titled “Using performance-based financing (PBF) to motivate health commodity supply chain improvement at a central medical store in Mozambique.” (Serumaga 2014)

## Dissemination through the Project’s Website and Print Publications

During FY2014, 52,609 unique visitors made 90,526 visits to deliver.jsi.com, for a total of 382,700 pageviews. See figure 22.

The largest volume of hits came from the My Commodities section of the site, which services staff, clients, and customers with order and shipment information. The Resources and Procurement sections also had a large number of hits, indicating the critical nature of these functions. See figure 23.

Figure 22. Number of Unique Visitors Each Month to deliver.jsi.com

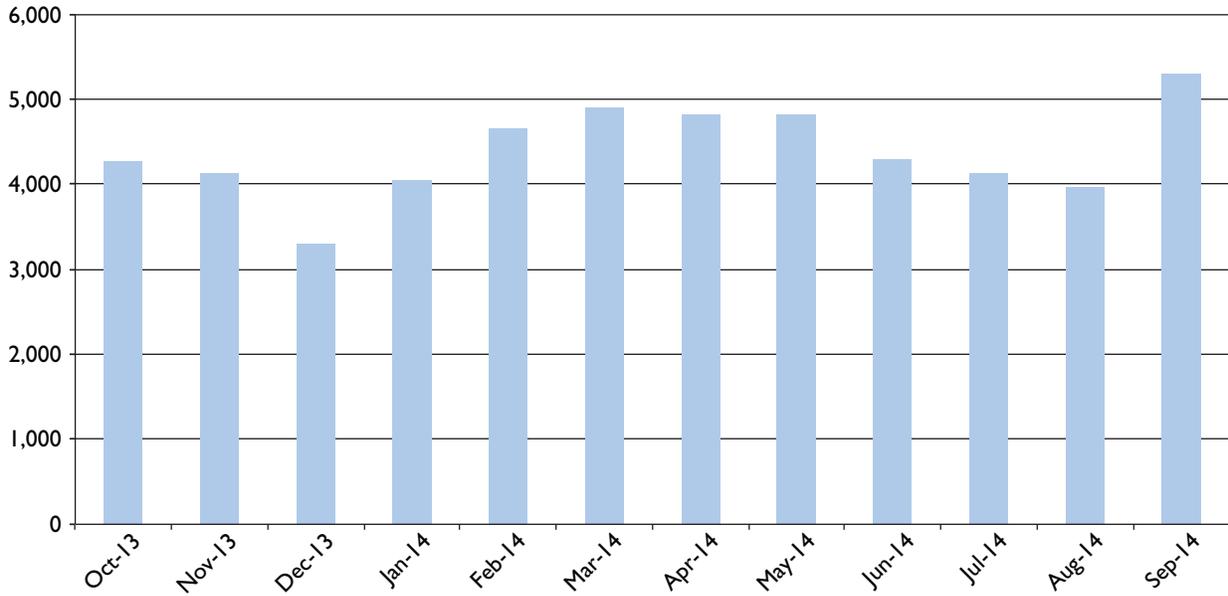


Figure 23. Number of Page Hits for Each Section of the Website

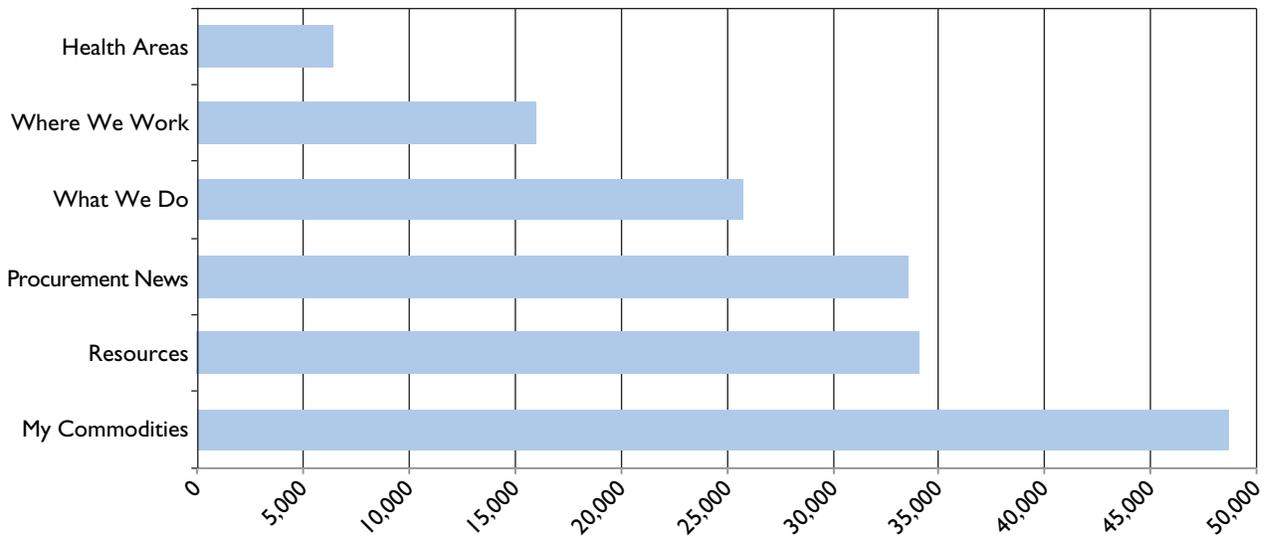
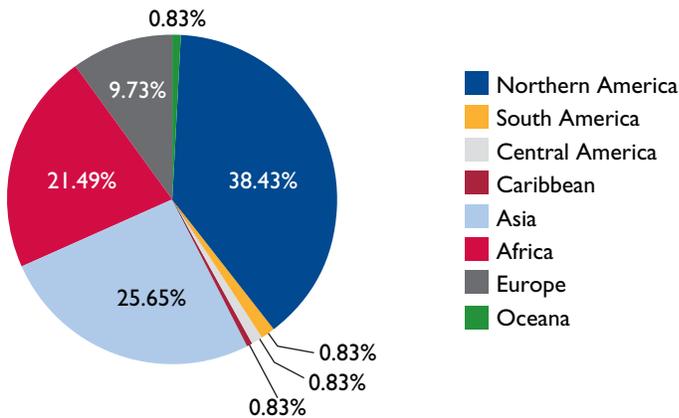


Figure 24. Location of Visitors Accessing the USAID | DELIVER PROJECT Website



Visitors to the website came from 201 countries. A majority of them (approximately 60 percent) connected from outside of North America, with 26 percent of visits coming from Asia, 22 percent from Africa, and 10 percent from Europe (see figure 24). Users downloaded 48,249 documents during the year, which reflects a strong interest in the project's technical knowledge, which is mainly published as .pdf documents.

During the year, print publications remained an important part of the project's outreach. The project distributed more than 4,000 hard copy documents, CD toolkits, and software CDs to more than 30 different countries. Most of them were used in trainings, both in project countries, such as Ghana and South Sudan; and in countries outside the project's work, including Haiti and Brazil. The materials spanned 40 different items; the three most popular were *The Logistics Handbook (2011a)*, *Guidelines for the Storage of Essential Medicines and Other Health Commodities (JSI/WHO 2003)*, and the *Supply Chain Manager* software.

Knowledge management and dissemination, especially using visual tools and social media, will remain a key strategy as the project goes into its final year. Building and sharing the project's body of knowledge will continue to benefit stakeholders at all levels of the supply chain and will strengthen sustainability of the project's work within external organizations.



## Conclusion

During FY2014, the USAID | DELIVER PROJECT's efforts to strengthen supply chains and enable commodity security continued to bolster health outcomes in low- and middle-income countries. The project's involvement in all aspects of the supply chain, as well as the broader environment that influences product availability, has enabled it to apply a holistic approach to supply chain improvement, where bottlenecks and obstacles can be identified and prioritized systematically.

Striving toward continual improvement and developing new and better interventions, the project's reach has grown to encompass collaboration at all levels of the supply chain. At the global level, the project promotes advocacy and coordination; at the national level, it facilitates capacity building and change within organizational structures of governments, with a new focus on leadership. Throughout the supply chain, the project improves data visibility with automated LMISs and strengthens the last mile with support for warehouses and distribution networks.

The project uses tools and techniques to encourage country ownership and sustainability of programs. A major success in capacity building was the scale-up of PST in Ghana to all schools of pharmacy and nursing, mandating supply chain management as a regular part of the syllabus, which will reduce the need for more expensive in-service training. Capacity building efforts are cultivating leadership through a new initiative and connecting local academic institutions with the supply chain community through PST and IAPHL.

IAPHL membership continues to grow, and the association now offers a mentoring initiative to support ongoing learning for logisticians. During the year, moderated online discussions, led by supply chain experts, included topics such as health care waste management and last mile distribution models for health commodities. These discussions have wide participation from various levels of the supply chain management community; as many as 10 different countries can be represented in a single discussion.

Technological advances that facilitate access to supply chain data remain a key focus for the project. Only with up-to-date knowledge of stock and consumption data can program managers make the right decisions to ensure that supplies are available. Systems implementations in

Zambia, Tanzania, Rwanda, and Pakistan are examples of the project's commitment to leveraging technologies that support supply chains. To cut cost and encourage reusability, the project developed a system based on OpenLMIS for Zambia and Tanzania; in Pakistan, the contraceptive LMIS (cLMIS) was adapted from a system developed for the program in Bangladesh. The cLMIS was subsequently modified to support the Expanded Programme on Immunization program for vaccines, a new health area for the project.

As the project enters its final year, best practices, innovative approaches, collaboration, and strategic knowledge sharing are key assets that will drive improvements in supply chain performance. The project aims to motivate and support the supply chain leaders to benefit families and communities in the countries where we work.

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# Index of Performance Management Plan Indicators

## Functional Area I. Improve and Strengthen in-Country Supply Chains

- 1.1 Stockout rates .....Appendix A
- 1.2 Number (and proportion) of project assisted countries with supply plans reviewed and updated semi-annually for an agreed list of commodities .....Appendix B
- 1.3 Number (and proportion) of project-assisted countries that submit supply plans for USAID-procured contraceptives, condoms, and other health commodities, as applicable, without external short-term technical assistance. ....Appendix B
- 1.4 Forecast accuracy for contraceptives and other health commodities, as applicable .....Appendix B
- 1.5 Number (and proportion) of countries with key contraceptives on the national essential medicines lists (NEML), by method. ....Appendix B
- 1.6 Number (and proportion) of project assisted in-country organizations in project- assisted countries that have documented and approved protocols/procedures/guidelines for the procurement of health commodities.. ....Appendix B
- 1.7 Number (and proportion) of project-assisted in-country organizations in project-assisted countries that have an established procurement unit/body responsible for the procurement of health commodities. ....Appendix B
- 1.8 Number (and proportion) of project-assisted in-country organizations in project-assisted countries with an LMIS that routinely reports stock status from SDP level. ....Appendix B
- 1.9 SDP-level reporting rates. ....Appendix B
- 1.10 Number (and proportion) of project-assisted in-country organizations in project- assisted countries with supervision guidelines and tools for routine supervision of commodity logistics management functions. Appendix B
- 1.11 Number (and proportion) of project-assisted in-country organizations in project-assisted countries that have documented and approved protocols/procedures/ guidelines for operational warehouse management of health commodities (manual or automated). ....Appendix B
- 1.12 Number (and proportion) of project-assisted in-country organizations in project-assisted countries that have documented and approved protocols/procedures/guidelines for the transportation of health commodities (may include documented distribution routes, procedures for vehicle maintenance, etc.). ....Appendix B

- 1.13 Number (and proportion) of project-assisted in-country organizations in project-assisted countries with supply chain protocols in place for disposal of medical waste and management of expired, damaged, and/or recalled products . . . . . Appendix B
- 1.14 Number (and proportion) of project-assisted in-country organizations in project-assisted countries with established positions/units that include defined responsibilities and required qualifications for SCM . . . . . Appendix C
- 1.15 Number of in-country staff trained . . . . . Appendix C
- 1.16 Number (and proportion) of people trained at regional and central levels in project-assisted countries who are still responsible for performing the supply chain functions for which they were trained by the project . . . . . Appendix C
- 1.17 Number of project-assisted countries adopting pre-service training in supply chain management . . . . . Appendix C
- 1.18 Number and value of sub-contracts and/or work orders issued with local/ regional institutions (including the private sector and NGOs) for technical services. . . . . Appendix C
- 1.19 Number (and proportion) of field office staff who are local or regional hires. . . . . Appendix C

## Functional Area 2. Strengthen Environments for Commodity Security

- 2.1 Number (and proportion) of countries with active CS coordinating mechanisms in place . . . . . Appendix D
- 2.2 Number of countries with current commodity security strategies developed . . . . . Appendix D
- 2.3 List of project-assisted countries where market analysis has been conducted and disseminated using the most recent DHS or RHS data . . . . . Appendix D
- 2.4 Number (and proportion) of countries with a government budget line item for the procurement of contraceptives Appendix D
- 2.5 Number (and proportion) of countries spending government funds on the procurement of public sector contraceptives . . . . . Appendix D
- 2.6 Percentage of total funding spent on public sector procurement of contraceptives that comes from government funds, by country (i.e., government share of spending on contraceptive procurement for the public sector) . . . . . Appendix D
- 2.7 List of instances where input or support is provided to global, regional, and national partners to promote CS (e.g., civil society organizations, women’s groups) . . . . . See note in Appendix D
- 2.8 List of instances where project-collected data is used for advocacy and to influence decision-making . . . . . See note in Appendix D

## Functional Area 3. Knowledge Management and Communications

- 3.1 List of instances where a country adopts or adapts a core or field-funded innovation or tool. . . . . See note in Appendix E

**3.2** List of articles submitted to peer-reviewed journals by project staff . . . . . KM Section

**3.3** List of technical websites, publications, and social media sites used for sharing  
and disseminating project information and documents . . . . . KM Section

**3.4** List of websites that link to deliver.jsi.com . . . . .Appendix E

**3.5** Number of unique visitors per month to deliver.jsi.com . . . . . KM Section

**3.6** Total number of unique page views by content area . . . . . KM Section

**3.7** Number of downloads and order fulfillment for project materials . . . . . KM Section

**3.8** Number of active IAPHL members . . . . .Appendix E



# Appendices

The TO4 Performance Monitoring Plan (PMP) outlines key performance indicators, based on the main themes that drive our technical assistance:

- system strengthening
- building local capacity and ownership
- strengthening environments for commodity security
- knowledge management and communications.

Our field offices are the source for most of the data reported on the PMP, although some is also collected centrally. During FY2013, Task Order 4 (TO4) had a presence in 21 countries. Because the Bolivia office closed after the second quarter, and data for indicators that are only collected annually are collected at the end of the fiscal year, this report refers to 20 presence countries for those indicators.



## Ensuring Commodity Availability

The strategic objective of Task Order 4 (TO4) is to strengthen the in-country supply chain performance by improving commodity availability at service delivery points. The key metrics for measuring overall performance are stockout rates and reporting rates. These core results are presented below.

### PMP Indicator 1.1 Stockout Rates

Sixteen project-presence countries, with 24 different programs, reported in the Procurement Planning and Monitoring Report (PPMR) in FY2014, represent exactly 50 percent of the currently reporting PPMR countries and programs. The past fiscal year saw an increase of three project-presence countries reporting: two countries in the West and Central Africa Initiative—Mauritania and Niger—and Malawi, which restarted reporting in December 2013. Additional data were obtained from social marketing programs in presence- and non-presence countries in FY2014, notably from Greenstar Pakistan (PSI) and the Uganda Health Marketing Group (UHMG); both received significant commodity support from USAID.

Eight project-presence countries reported stockouts at the central level in the PPMR. Ten non-presence countries also reported stockouts in FY2014. The eight project-presence countries with no stockouts reported in FY2014 include five that also reported no stockouts in FY2013: Ethiopia, Mozambique, Rwanda, Tanzania, and Zimbabwe. Guinea, Mauritania, and Niger also reported no central-level stockouts in FY2014. Table 1 shows only the project-presence countries that reported stockouts; and the number of stockouts, over time, in each country in FY2014.

Table 1. Number of PPMR-Reported Central-Level Stockouts in Project-Presence Countries

	2013			2014								
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Burkina Faso	-	-	-	-	-	-	-	-	-			
Ghana	2		-	-		-	-	3**	-	-	-	-
Liberia	-	-	-		-	-	-	-	-	-	-	-
Malawi	-	-	-	-	-	-	-		-	-	-	-
Nigeria	-	-	-	-	-		-	-	-	-	-	-
Pakistan	-	2	-	-	2	-	-	2	-	-	3	-
Togo									-	-		-
Zambia		-	-		-	-	-	-	-		-	-

1 The reporting schedules for the countries in the table are as follows:  
 -Burkina, Ghana, and Togo reported each month during this time period.  
 -Liberia reported bimonthly, but reports in 2014 were not consistently received.  
 -Nigeria reports 3x annually, in March, July, and November.  
 -Pakistan reports quarterly in February, May, August, and November.  
 -Zambia reports quarterly in January, April, July, and October.

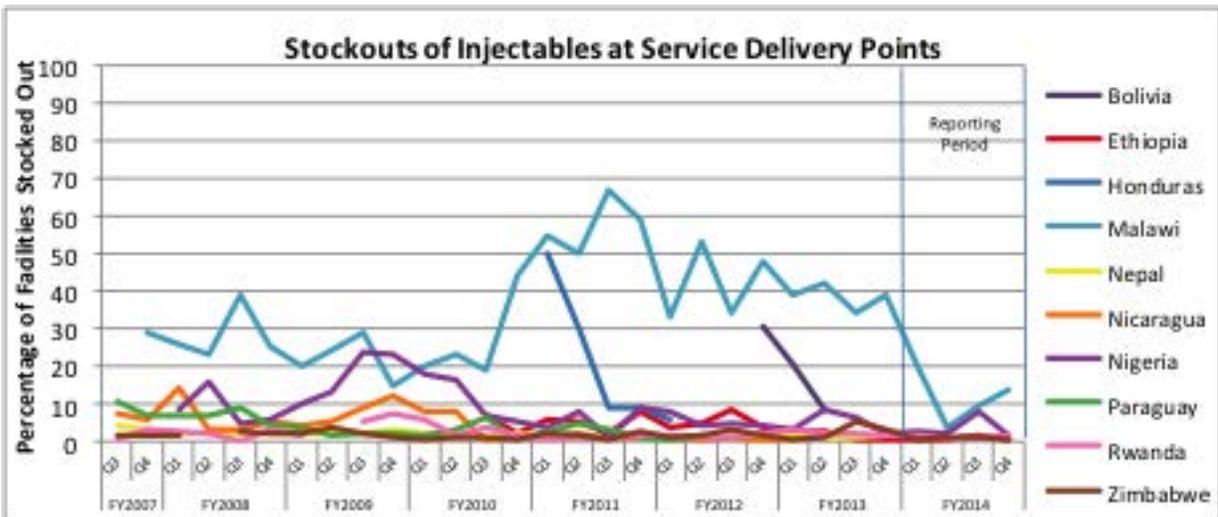
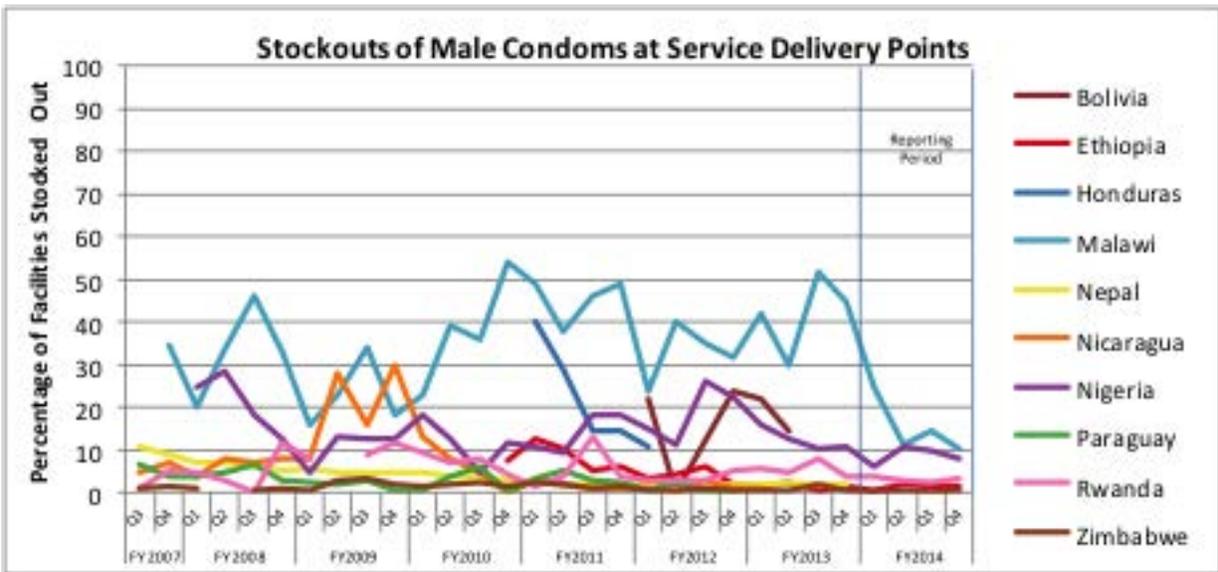
2 Black square means no report was received. Red squares include a stockout of emergency contraceptive pills.

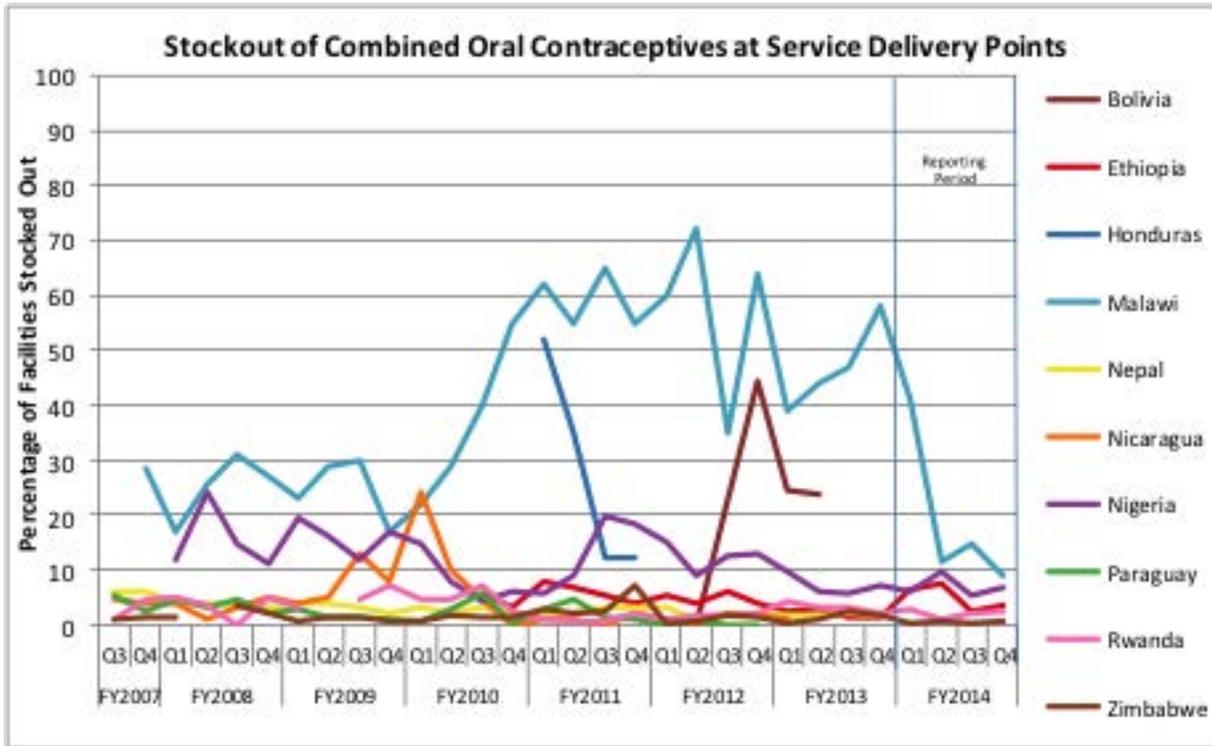
Five of the eight project-presence countries reported only one or a few (three) stockouts. The one-time reports of one stockout for Liberia, Malawi, and Nigeria were for IUDs, Implanon, and the monthly injectable Norigynon, respectively. Burkina Faso reported a stockout of cycle beads over a three-month period; Zambia submitted two quarterly reports, including a stockout of the bimonthly injectable Noristerat, and one with a stockout of Microlut.

Ghana, Pakistan, and Togo all reported a significant number of stockouts—seven to nine—reported stockouts for specific products in FY2014. Note that Ghana and Togo report more frequently—monthly and bimonthly—than other countries reporting stockouts; and they covered multiple programs, which increases the possibility that a stockout will be reported. In Ghana, the stockouts were for male condoms in both the social marketing program and the Ministry of Health (MOH), as well as isolated one-time stockouts of Microlut and the emergency contraceptive, Pregnon, in the public sector. The male condom stockouts in Ghana were related to the recall of several million male condoms procured with Global Fund to Fight AIDS, Tuberculosis and Malaria monies in FY2013; the condoms were defective, requiring emergency supplies from donors, such as USAID, to fill the gap.

In Pakistan’s public sector, recurring stockouts of emergency contraceptive pills—traditionally procured by the government of Pakistan—and bimonthly injectables, were reported. Togo also struggled to maintain supplies of emergency contraceptives for its public-sector program; they reported a stockout of that product that lasted eight months. PSI Togo reported an isolated stockout of Combination3. Most of the reported stockouts for these three countries were for emergency contraceptive pills, a method that USAID did not provide to any of these countries during this time.

Figure 25. Stockout Rates for Male Condoms, Injectables, and Oral Pills, FY2007–FY2014



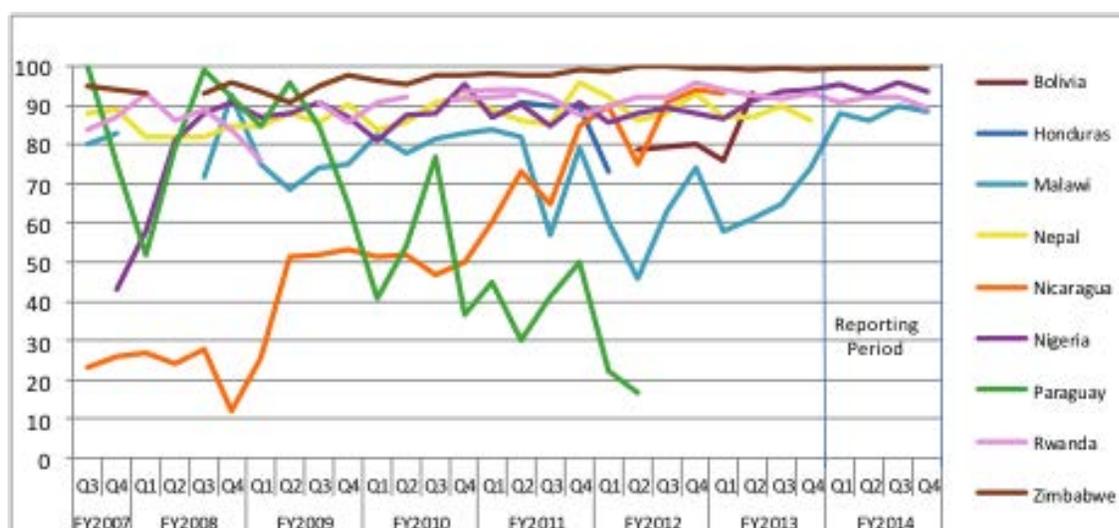


With a number of field offices closing during or at the end of FY2013, fewer countries are reporting SDP-level stockout data. Only five project-presence countries reported these data in FY2014, including Ethiopia—based on a sample of service delivery points (SDPs) that received supportive supervision visits—Malawi, Nigeria (for project focus states only), Rwanda, and Zimbabwe. All five countries reported stockout rates throughout the year at or about 10 percent; some were well below 10 percent for the entire year. Only Malawi, at some point, climbed slightly above 10 percent for all three methods, yet these rates are significantly lower than their stockout rates in recent years, representing a major improvement in contraceptive availability in that country.

# Appendix B

## Strengthening Key Supply Chain Functions

Figure 26. Percentage of Facilities Reporting, FY2007–FY2014



Health facility reporting rates have remained very high in countries that have access to this information through their LMIS. Of the four project-presence countries that are still reporting—Malawi, Nigeria, Rwanda, and Zimbabwe—all have reporting rates around 90 percent or higher, on average. For Malawi, this represents a significant increase in reporting rates over recent years.

### PMP Indicator 1.2 Number (and Proportion) of Project-Assisted Countries with Supply Plans Reviewed and Updated Semi-Annually for an Agreed List of Commodities

All 17 project-presence countries that submitted supply plans during FY2014—out of 22 total project-presence countries—reviewed and updated their plans at least semi-annually during the year.

## PMP Indicator 1.3 Number (and Proportion) of Project-Assisted Countries That Submit Supply Plans for USAID-Procured Contraceptives, Condoms, and Other Health Commodities without External Technical Assistance

Sixteen out of the 22 countries with a TO4 project-presence completed quantifications in FY2014 and submitted supply plans. Project-presence countries that received external technical assistance in contraceptive forecasting were Burkina Faso, Indonesia, Malawi, Mauritania, and Niger. In Indonesia, some assistance was provided using external funding from the Bill & Melinda Gates Foundation, through the Implants Access Program (IAP). The remaining 11 project-presence countries that conducted quantification in FY2014 did so without external technical assistance.

## PMP Indicator 1.4 Forecast Accuracy for Contraceptives

Calculating forecast accuracy is one way that programs can judge the quality of their forecast. Comparing the actual issues or consumption of a product to its prior year's forecast also helps programs adjust their assumptions for the coming year. The project uses median absolute percentage error (MAPE) to calculate forecast accuracy in project-presence countries. To find the forecast error—which can be a negative or a positive percentage—the calculation is used to compare forecasted quantities to actual consumption or issues for each product. Products that had stockouts are excluded from the analysis; stockouts are not forecast because they are unpredictable. In the final step in the analysis, we convert each error to its absolute value and calculate the median value across all products in a program's forecast. The project benchmark for forecast error is 25 percent or less, based on work done by Smith (1997) for U.S.-based commercial industries.

In all countries in this analysis, forecast error is calculated for public-sector programs as a measure of both the country's progress in supply chain strengthening and the project's capacity building efforts. Some public-sector programs supply nongovernmental organizations (NGOs) and social marketing organizations—as in Ghana—and the forecast includes their consumption, as well as the projected consumption at public-sector facilities.

In FY2014, Burkina Faso, Mauritania, and Togo—all part of the West Africa Regional Initiative—were included as project-presence countries with quantification data that could be reviewed for forecast accuracy. Under the initiative, the project also conducted quantification technical assistance in Cameroon and Chad in 2012, with follow-up assistance in 2013. Using funds from the IAP, the Bill & Melinda Gates Foundation funded the 2013 follow-up assistance in both Cameroon and Chad. Although Cameroon and Chad are not project-presence countries, their accuracy data is included here.

Given the influx of new countries—some were conducting their first national contraceptive quantifications—it is not surprising that the overall forecast error across the 15 countries in the analysis rose to 37 percent across the six common products—up from 29 percent last year. Inclusion of the new countries explains the increased errors—if they are excluded, the median error remains at 29 percent for calendar year (CY)2013. Seven of the 15 countries in this analysis (47 percent) had error rates below the project benchmark of 25 percent (see table 2).

Table 2. Median Forecast Error Rates (six common products), by Country

Country	2006 (%)	2007 (%)	2008 (%)	2009 (%)	2010 (%)	2011 (%)	2012 (%)	2013 (%)
Burkina Faso								11
Cameroon								65
Chad								10
Ethiopia						17	64	56
Ghana	33	63	34	28	33	16	31	10
Liberia				57	80	63	32	186
Mauritania								76
Mozambique	151	15	15	18	102	27	13	37
Nigeria							30	22
Pakistan					11	5	26	10
Rwanda	17	12	8	3	7	26	18	5
Tanzania	22	13	30	35	21	52	44	58
Togo								45
Zambia			70	40	59	131	27	51
Zimbabwe					10	24	7	12

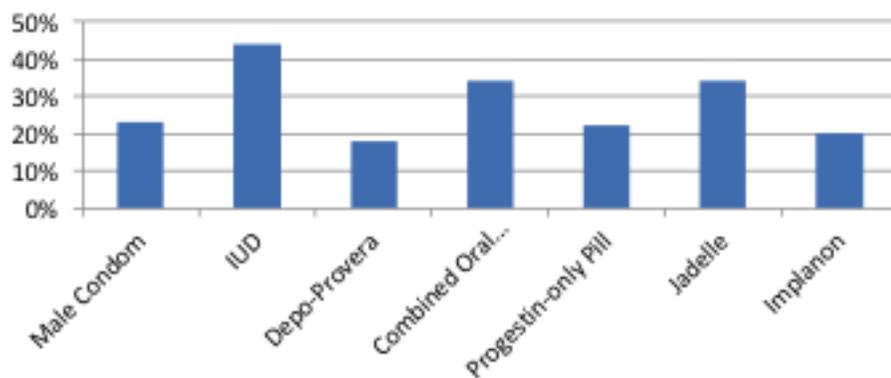
Of the 10 countries whose forecast error was measured in CY2012, five had lower error rates and five had higher error rates. Fifty percent of these 10 countries are below the project's benchmark error rate of 25 percent. Rwanda and Pakistan, both consistently below the 25 percent error benchmark, decreased their error rates to 5 and 10 percent, respectively. Ghana, Nigeria, and Ethiopia also decreased their error rates since CY2012; Ghana and Nigeria's error rates fell below the project benchmark for the first time.

Among the new countries in the analysis with error rates that were measured for the first time, Burkina Faso and Chad had error rates below the 25 percent benchmark. Burkina Faso has a strong history of national quantification, led by the Ministry of Health; prior to the TO4 project-presence established in 2013, the project last provided technical assistance in quantification to Burkina Faso in 2007, and the capacity built has remained. In contrast, Chad conducted its first-ever national quantification in 2012, forecasting for 2013. It had a very low error rate, primarily because so few products could be included in the error calculation; they had chronic stockouts of both quarterly and bimonthly injectable contraceptives, and combined oral contraceptives.

Five returning countries had increased error rates in CY2013 versus 2012. Although Zimbabwe's error rate increased by 5 percent, the error rate remains below the project benchmark. Error also increased in Mozambique, Tanzania, and Zambia. Liberia had the greatest increase, from 32 percent in 2012 to 186 percent in 2013. The increase in Liberia reflects a major upheaval in the supply chain, including the National Drug Service (NDS or Central Medical Store) reorganization and launching of an interim delivery approach involving direct-to-facility shipments from NDS. The Ebola epidemic had not yet begun in 2013, so its effects on the supply chain in Liberia will not be visible in our data until the 2014 forecast error is calculated.

Product-specific error rates remained consistent in 2013 compared to 2012. Male condoms, Depo-Provera, Implanon, and progestin-only pills had error rates below the project benchmark. Three of the seven products shown in figure 27— IUDs, combined oral contraceptives, and Jadelle—had error rates above the benchmark, but none were higher than 50 percent. Figure 27 shows the forecast error, by product, for the seven products commonly carried by most countries.

Figure 27. 2013 Forecast Error by Product

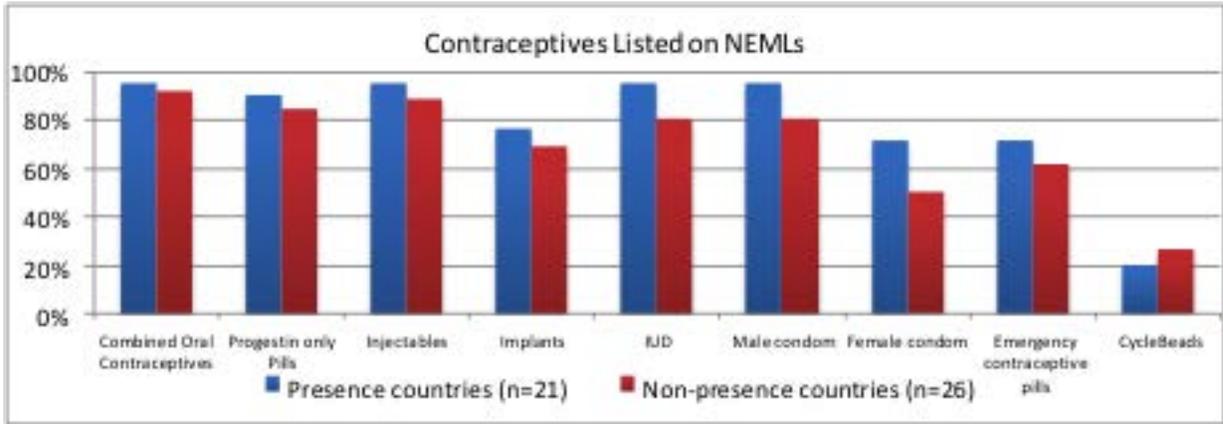


In previous project analyses of forecast error, products classified as new and underutilized methods (NUMs) typically have higher error rates than more commonly used products. This analysis supports that conclusion. NUMs are defined as female condoms, IUDs, implants (all brands), cycle beads, and emergency contraceptives. Non-NUMs are male condoms, oral contraceptives (non-emergency), and quarterly injectables. In 2013, NUMs products median error rate was 37 percent, where non-NUMs had a median error of only 23 percent. In adjusting future forecast assumptions, especially for products with a routinely high error, it is useful to know if the direction of the error is over-forecasting—forecasting more than is ultimately consumed—or under-forecasting—forecasting too little compared to what is consumed. For all but two products in this year’s analysis, the majority of the error rates were over-forecasts. The only two products whose error rates were primarily under-forecasts were, surprisingly, cycle beads and female condoms, showing that not all NUMs suffer from overestimated consumption.

However, there is no correlation between under-forecast or over-forecast and forecast error. For the countries in the analysis, the direction of the forecast error—positive or negative—seems to have no bearing on the accuracy of the forecast. The primary conclusion that can be drawn from these data is that the countries with the lowest forecast error are routinely using lower-level logistics data—either lower-level issues or actual historical consumption—when doing the quantification. The countries with the higher forecast error rely on central-level issues data as a proxy for consumption or demographic forecasts.

# PMP Indicator 1.5 Number (and Proportion) of Countries with Key Contraceptives on National Essential Medicines Lists, by Method

Figure 28. Contraceptives Listed on the National Essential Medicines Lists



# PMP Indicators 1.6, 1.7, 1.8, 1.11, 1.12, 1.13 Number (and Proportion) of Project-Assisted in-Country Organizations in Countries Where the Project Is Providing Technical Assistance That Have Documented and Approved Protocols/Procedures/Guidelines for the Following Supply Chain Functions or Systems

Table 3. Project-Presence Countries with Protocols for Core Supply Chain Functions

Country	Do documented and approved protocols, procedures, and/or guidelines exist for the procurement of health commodities?	Is there an established procurement unit or other body responsible for the procurement of health commodities?	Is there a logistics management information system (LMIS) that routinely reports stock status from the service delivery point level to the higher administrative levels? (Note: "Routine reporting" is defined according to the reporting requirements of the LMIS.)	Do documented and approved protocols, procedures, and/or guidelines exist for warehouse management of health commodities (manual or automated)?	Do documented and approved protocols, procedures, and/or guidelines exist for the transportation of health commodities? (These may include documented distribution routes, procedures for vehicle maintenance, etc.)	Are supply chain protocols in place for the disposal of medical waste and the management of expired, damaged, and/or recalled products?
Burkina Faso	Yes	Yes	Yes	Yes	Yes	Yes
Ethiopia	Yes	Yes	Yes	Yes	Yes	Yes
Ghana	Yes	Yes	Yes	Yes	Yes	Yes
Guatemala	Yes	No	No	Yes	No	Yes
Guinea	Yes	Yes	Yes	Yes	Yes	Yes
India	No	Yes	No	No	No	Yes
Indonesia	Yes	Yes	Yes	Yes	No	Yes
Liberia	Yes	Yes	Yes	Yes	Yes	Yes
Malawi	Yes	Yes	Yes	Yes	Yes	Yes
Mauritania	Yes	Yes	No	No	No	No
Mozambique	Yes	Yes	Yes	Yes	Yes	Yes
Nicaragua	Yes	Yes	Yes	Yes	No	Yes
Niger	Yes	Yes	No	No	Yes	Yes
Nigeria	Yes	Yes	Yes	Yes	Yes	Yes
Pakistan	Yes	Yes	Yes	Yes	Yes	No
Rwanda	Yes	Yes	Yes	Yes	Yes	Yes
South Sudan	No	Yes	No	Yes	No	No
Tanzania	Yes	Yes	Yes	Yes	Yes	Yes
Togo	No	Yes	No	Yes	Yes	No
Yemen	Yes	No	No	Yes	No	No
Zambia	Yes	Yes	Yes	Yes	Yes	Yes
Zimbabwe	Yes	Yes	Yes	Yes	Yes	Yes
<b>Total:</b>	<b>86%</b>	<b>91%</b>	<b>68%</b>	<b>86%</b>	<b>68%</b>	<b>77%</b>

In summary from 22 project-presence countries:

- Twelve countries (55 percent) have all six supply chain systems in place for sustainability: Burkina Faso, Ethiopia, Ghana, Guinea, Liberia, Malawi, Mozambique, Nigeria, Rwanda, Tanzania, Zambia, and Zimbabwe.
- Three countries (14 percent) have five of six supply chain systems in place for sustainability: Indonesia, Nicaragua, and Pakistan.
- Four countries (18 percent) have three or four of six supply chain systems in place for sustainability: Niger, Guatemala, Togo, and Yemen.
- Three countries (14 percent) have only two of six supply chain systems in place for sustainability: India, Mauritania, and South Sudan.

## PMP Indicator 1.10 Number (and Proportion) of Project-Assisted In-Country Organizations with Supervision Guidelines and Tools for Routine Supervision of Commodity Logistics Functions

Of the 22 project-presence countries, 18 have supervision guidelines and tools for routine supervision of commodity logistics management functions (82 percent).



## Building Local Capacity

**PMP Indicator 1.14** Number (and Proportion) of Project-Assisted In-Country Organizations in Project-Assisted Countries with Established Positions/Units That Include Defined Responsibilities and Required Qualifications for Supply Chain Management

Of 22 project-presence countries, 16 have established positions that include defined responsibilities and required qualifications for supply chain management (73 percent).

**PMP Indicator 1.15** Number of In-Country Staff Trained (Country, Level, Gender)

Table 4. Summary of In-country Staff Trained, by Level and Gender

Trainings in FY2014, by Level			
Level	Women Trained	Men Trained	Total Trained
Central	213	431	644
District	522	2,014	2,536
Other	373	619	992
Region	731	1,161	1,892
SDP	5,077	4,698	9,775
Grand Total	6,916	8,923	15,839

Table 5. In-Country Staff Trained, by Country, Level, and Gender

Trainings in FY2014, by Country			
Country/Level	Women Trained	Men Trained	Total Trained
<b>Burkina Faso</b>	29	97	126
Central	3	14	17
Region	8	34	42
District	18	49	67
<b>Ethiopia</b>	120	288	408
Central	15	74	89
Region	18	51	69
District	7	18	25
SDP	80	145	225
<b>Ghana</b>	736	1,402	2,138
SDP	633	1,214	1,847
Other	103	188	291
<b>Guatemala</b>	983	718	1,701
Central	83	44	127
Region	458	403	861
District	128	114	242
SDP	314	157	471
<b>Guinea</b>	24	106	130
Central	-	10	10
Region	4	11	15
District	20	85	105
<b>India</b>	84	171	255
Central	1	9	10
Region	9	39	48
SDP	17	14	31
Other	57	109	166
<b>Liberia</b>	57	198	255
Central	25	83	108
Region	16	25	41
District	5	36	41
Other	11	54	65
<b>Malawi</b>	20	71	91
District	15	56	71
Other	5	15	20

<b>Mauritania</b>	<b>13</b>	<b>7</b>	<b>20</b>
Central	3	3	6
Region	10	4	14
<b>Mozambique</b>	<b>70</b>	<b>149</b>	<b>219</b>
Region	19	25	44
District	51	124	175
<b>Nicaragua</b>	<b>169</b>	<b>125</b>	<b>294</b>
Central	3	3	6
Region	37	13	50
Other	129	109	238
<b>Niger</b>	<b>28</b>	<b>14</b>	<b>42</b>
Central	12	5	17
Region	16	9	25
<b>Nigeria</b>	<b>1,081</b>	<b>178</b>	<b>1,259</b>
Central	18	5	23
Region	26	66	92
SDP	998	30	1,028
Other	39	77	116
<b>Pakistan</b>	<b>14</b>	<b>233</b>	<b>247</b>
District	7	58	65
Region	7	175	182
<b>Rwanda</b>	<b>501</b>	<b>2,121</b>	<b>2,622</b>
Central	13	29	42
Region	15	169	184
District	132	1,095	1,227
SDP	336	783	1,119
Other	5	45	50
<b>Tanzania</b>	<b>1,480</b>	<b>1,385</b>	<b>2,865</b>
Central	15	73	88
Region	37	59	96
District	117	300	417
SDP	1,311	953	2,264
<b>Togo</b>	<b>29</b>	<b>28</b>	<b>57</b>
Central	7	10	17
Region	21	13	34
Other	1	5	6

Yemen	218	284	502
Central	4	10	14
Region	21	47	68
SDP	170	210	380
Other	23	17	40
Zambia	941	1,173	2,114
Central	8	37	45
District	17	73	90
SDP	916	1,063	1,979
Zimbabwe	319	175	494
Central	3	22	25
Region	9	18	27
District	5	6	11
SDP	302	129	431
Grand Total	6,300	7,751	15,839

## PMP Indicator 1.16 Number and Percentage of Trainees at Regional and Central Levels in Project-Presence Countries Still Performing Functions Trained for by the Project (since October 1, 2010)

Now four years into the project, with thousands of people trained across project-presence countries, it has become too cumbersome for field offices to monitor this indicator. Please note: This indicator is not a performance measure. It was developed for our field offices to use for project management and for monitoring retraining needs, if posts have been vacated.

## PMP Indicator 1.17 Number of Project-Assisted Countries Adopting Pre-Service Training in Supply Chain Management

The following 11 field offices are supporting a pre-service training program in their countries: Ethiopia, Ghana, Malawi, Mozambique, Nicaragua, Nigeria, Pakistan, Rwanda, Tanzania, Zambia, and Zimbabwe.

## PMP Indicator 1.18 Number and Value of Subcontracts and/or Work Orders Issued with Local and Regional Institutions for Technical Services

Country	Name of Subcontractor	Value of Work Order (U.S.\$)	Description of Work Order
Ethiopia	JaRCO	\$110,000	Conduct national IPLS survey
Guinea	Logistique	\$78,354	Distribute antimalarial commodities from the central warehouse to 175 health facilities
India	Careerist Management Consultants Private Limited	\$63,346	(Amount may vary because it was paid in local currency) Assisted the project in hiring one national procurement and logistics coordinator (PLC), two regional PLCs, and 42 state PLCs on behalf of the National AIDS Control Organization.
India	Aztral Solutions	\$4,183	Translate the storage guidelines and logistics handbook
Malawi	Imperial Health Sciences	\$420,381	Provide warehouse family planning and HIV commodities to support the MOH
Malawi	Cargo Management Logistics Ltd	\$201,870	Distribute family planning and HIV commodities to support the MOH
Malawi	Story Workshop Educational Trust	\$10,201	Advocate for family planning
Malawi	ESAMI	\$15,283	Intro to supply chain management training
Mozambique	NTS-Transportes & Serviços, Lda	\$3,971	Distribute family planning, HIV, and antimalarial commodities to support MOH
Mozambique	MoviCargo, Lda	\$1,466	Distribute family planning, HIV, and antimalarial commodities to support MOH
Mozambique	Industrias Pilivi, Ltd./Adil Group, SA	\$160,217	Matola warehouse rental for family planning, HIV, and antimalarial commodities to support the MOH
Mozambique	Adamo Amad Seni	\$84,701	Beira warehouse rental for family planning, HIV, and antimalarial commodities to support the MOH
Mozambique	Wing Koon, Lda.	\$24,949	Beira central and provincial warehouse rental for family planning, HIV, and antimalarial commodities to support the MOH
Mozambique	Mahendi Raza Mamadataki	\$2,632	Nampula central and provincial warehouse rental for family planning, HIV, and antimalarial commodities to support the MOH
Nigeria	GHLI	\$240,447	Provide distribution services to support the Direct Delivery and Information Capture (DDIC) pilot program in Nigeria for delivery of public health commodities to selected facilities
Pakistan	E-conception	\$6,950	Develop front-end graphics for vaccine LMIS
Pakistan	Midas Communications	\$4,600	Produce short documentary showcasing warehousing developments and automations at Central Warehouse Karachi
Pakistan	PATH	\$78,387	Improve central warehouse operations; develop LMIS, and provide training; strengthen capacity in supply chain management; and strengthen capacity to procure quality contraceptives on international market
Pakistan	IDS (Indus Development Society)	\$3,140	Translate the Contraceptive Procurement Manual from English to Sindhi (language)

Rwanda	HSI INTERNATIONAL	\$28,710	Provide consultancy services to develop central repository database for storage of national pharmaceutical laboratory commodities and equipment
South Sudan	Achelis Uganda Limited	\$147,860	Provide adjustable pallet racking and install for CMS warehouses (KonyoKonyo and Riverside)
South Sudan	Achelis Uganda Limited	\$24,119	Provide air curtains/air showers and install at CMS warehouses (KonyoKonyo and Riverside)
South Sudan	Achelis Uganda Limited	\$5,050	Provide flexible PVC strips for doors at CMS warehouses (KonyoKonyo and Riverside)
South Sudan	Keizad Construction Company Limited	\$2,787	Repair CMS warehouse floors (KonyoKonyo and Riverside)
South Sudan	DMS Africa Limited South Sudan	\$23,000	Provide second-story container office for USAID   DELIVER PROJECT
Zambia	Express Mail Service (EMS)	\$3,067	Provide courier service to transport reports from districts to Medical Stores Limited
Zambia	Hussein Dudhia	\$127,000	Lease supplemental warehouse for Medical Stores Limited
Zimbabwe	Lacho Freight Warehouse	\$14,522	Store male condoms
<b>Total:</b>		<b>\$1,891,193</b>	

## PMP Indicator 1.19 Number (and Proportion) of Field Office Staff Who Are Local or Regional Hires

Country	Regional Hires		Local Hires		Total Number Regional/Local Hire		Total ALL Field Office Staff	Percentage of Total Regional/Local Hires Field Office Staff (%)	Percentage of Total Regional/Local Hires Field Office Staff Who Are—	
	Men	Women	Men	Women	Technical Staff	Admin/ Finance/ Support Staff			Technical	Admin/Finance/ Support Staff
Burkina Faso	1		3	1	3	2	5	100	60%	40%
Ethiopia			83	25	76	32	110	98	70%	30%
Ghana	1		15	4	11	9	20	100	55%	45%
Guatemala		1	1	3	3	2	5	100	60%	40%
Guinea			3		2	1	3	100	67%	33%
India			10	8	15	3	19	95	83%	17%
Indonesia			2	2	2	2	6	67	50%	50%
Liberia*	2		7	2	7	4	11	100	64%	36%
Malawi*	2		14	4	11	9	21	95	55%	45%
Mauritania			1		1	0	1	100	100%	0%
Mozambique*			15	8	10	13	27	85	43%	57%
Niger			1		1	0	1	100	100%	0%
Nicaragua				3	2	1	3	100	67%	33%
Nigeria*			38	27	31	34	65	100	48%	52%
Pakistan			53	6	36	23	59	100	61%	39%
Rwanda*	2	1	15	9	13	14	27	100	48%	52%
South Sudan	1		4	1	4	2	7	86	67%	33%
Tanzania*	3		76	30	70	39	111	98	64%	36%
Togo			1		1	0	1	100	100%	0%
Yemen			10		2	8	11	91	20%	80%
Zambia*	1		109	43	77	76	159	96	50%	50%
Zimbabwe*			7	6	4	9	14	93	31%	69%
<b>TOTAL</b>	<b>13</b>	<b>2</b>	<b>468</b>	<b>182</b>	<b>382</b>	<b>283</b>	<b>686</b>	<b>97%</b>	<b>57%</b>	<b>43%</b>

\*Some staff share time with other task orders or the Supply Chain Management System.

Note: Total staff includes expatriate staff.

# Appendix D

## Strengthen Environments for Commodity Security

PMP Indicators 2.1, 2.2, 2.4, 2.5

Table 6. Contraceptive Security Indicator Data

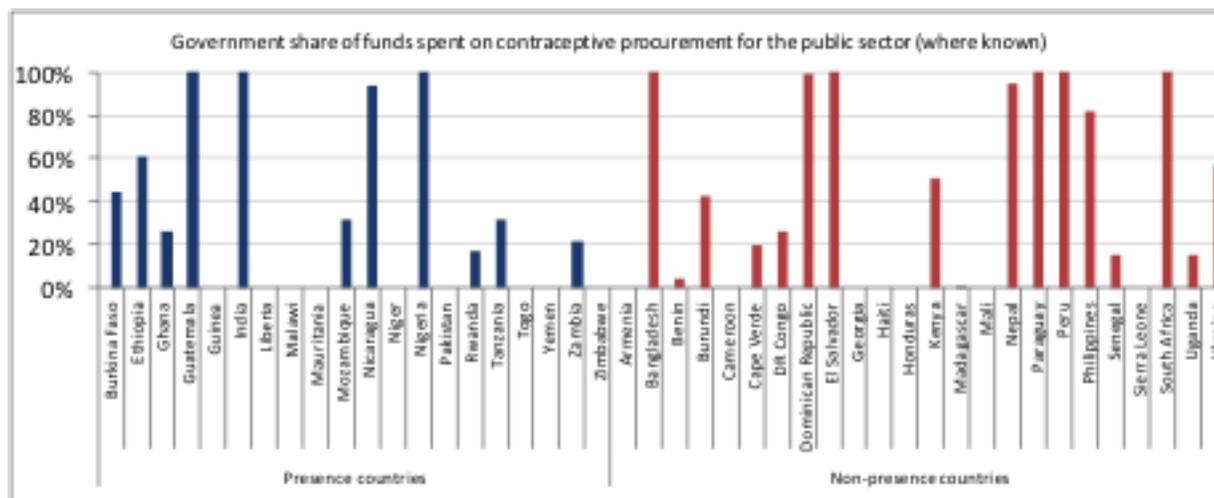
Indicator		Project-Presence Countries		Non-Presence Countries		Total	
		Number	Percentage	Number	Percentage	Number	Percentage
2.1	Countries with active contraceptive security coordinating mechanism in place	19	90%	23	88%	42	89%
2.2	Countries with current commodity security strategies developed	19	90%	21	81%	40	85%
2.4	Countries with a government budget line item for procuring contraceptives	12	67%	17	65%	29	66%
2.5	Countries spending government funds on procuring public-sector contraceptives	11	61%	17	68%	28	65%

## PMP Indicator 2.3 List of Project-Assisted Countries Where Market Analysis Has Been Conducted and Disseminated Using the Most Recent Demographic and Health Survey or Reproductive Health Survey Data

The project did not receive any requests to perform market analyses in FY2014.

## PMP Indicator 2.6 Percentage of Total Funding Spent on Public Sector Procurement of Contraceptives That Comes from Government Funds, by Country

Figure 29. Government Share of Contraceptive Funds Spent, by Presence- and Non-Presence Countries



## PMP Indicator 2.7 List of Instances Where Input or Support Provided to Global, Regional, and National Partners to Promote Contraceptive Security

## PMP Indicator 2.8 List of Instances Where Project-Collected Data Is Used for Advocacy and to Influence Decisionmaking

The results for indicators 2.7 and 2.8 can be found as examples and anecdotes throughout the body of the annual report.

## Knowledge Management and Communications

### PMP Indicator 3.1 List of Instances Where a Country Adopts or Adapts a Core or Field-Funded Innovation or Tool

The results for indicator 3.1 can be found as examples and anecdotes throughout the body of the annual report.

### PMP Indicator 3.2 List of Articles Submitted to Peer-Reviewed Journals by Project Staff

Project staff submitted several articles to peer-reviewed journals during FY2014. Please refer to the *Knowledge Management and Dissemination* section of this report for details.

### PMP Indicators 3.3, 3.5, 3.6, 3.7

These four indicators relate to the project's website, use of social media, and print media. All results can be found in the Knowledge Management and Dissemination section of the report.

## PMP Indicator 3.4 List of Websites That Link to deliverjsi.com

<http://www.usaid.gov/>

<http://www.pmi.gov/>

<http://www.who.int/>

<http://iaphl.org/>

<http://www.peoplethatdeliver.org/>

<https://www.k4health.org>

<http://www.rhsupplies.org/>

<http://www.capacityplus.org>

<http://www.technet-21.org/>

<http://www.resolog.org/>

<http://www.psmtoolbox.org/>

<http://www.comminit.com/>

<http://www.prb.org/>

<http://ccmcentral.com/>

<http://www.fcmi.org/>

<http://e.itg.be/ihp/>

<http://cib.wahooas.org/>

<http://www.essentialdrugs.org>

<http://www.csrwire.com/>

## PMP Indicator 3.8 Number of Active IAPHL Members

The International Association of Public Health Logisticians (IAPHL) membership increased dramatically over the past year—from 1,418 in FY2012 to 2,051 in FY2013, a 45 percent increase. Of the 2,051 IAPHL members, the gender is known for 1,272 members: 62 percent are male, and 38 percent are female. Membership is detailed in table 7, by country.

Table 7.Active IAPHL membership

Country Name	Number of Members on 09/30/2013
Albania	1
Angola	4
Argentina	2
Australia	13
Austria	1
Azerbaijan	1
Bangladesh	23
Barbados	1
Belgium	9
Benin	4
Bolivia	1
Botswana	18
Brunei	2
Bulgaria	1
Burkina Faso	17
Burundi	2
Cameroon	20
Canada	6
Central African Republic	2
Chile	1
Colombia	4
Costa Rica	1
Democratic Republic of Congo	18
Denmark	17
Dominican Republic	1
East Timor	1
Ecuador	1
Egypt	3
El Salvador	1
Eritrea	1
Ethiopia	128
Fiji	4
Finland	2
France	35
Georgia	1

Country Name	Number of Members on 09/30/2013
Germany	12
Ghana	64
Greece	1
Grenada	1
Guatemala	2
Guinea	2
Guyana	3
Haiti	19
Honduras	8
India	54
Indonesia	15
Ireland	3
Israel	1
Italy	2
Ivory Coast	14
Jamaica	1
Kenya	38
Kuwait	9
Kyrgyzstan	1
Laos	4
Lesotho	1
Liberia	36
Madagascar	12
Malawi	33
Malaysia	5
Mali	6
Mauritius	31
Mexico	3
Mongolia	1
Morocco	1
Mozambique	14
Myanmar	20
Namibia	7
Nepal	16
Netherlands	18
Nicaragua	1

Country Name	Number of Members on 09/30/2013
Niger	16
Nigeria	331
Norway	2
Oman	1
Pakistan	53
Palestinian Territory	1
Papua New Guinea	11
Paraguay	3
Peru	8
Philippines	7
Poland	1
Portugal	2
Republic of Congo	1
Romania	1
Rwanda	41
Saudi Arabia	1
Senegal	12
Serbia	1
Sierra Leone	4
Somalia	2
South Africa	35
South Sudan	2
Spain	6
Sri Lanka	3
Sudan	6
Swaziland	3
Switzerland	16
Syria	1
Tajikistan	3
Tanzania	88
Thailand	6
Togo	3
Tunisia	1
Uganda	45
Ukraine	1
<b>United Kingdom</b>	<b>59</b>

Country Name	Number of Members on 09/30/2013
United States	422
Uzbekistan	3
Vietnam	5
Yemen	5
Zambia	72
Zimbabwe	57
Not specified	728
<b>TOTAL ALL COUNTRIES:</b>	<b>2,875</b>

Institute for Reproductive Health, Georgetown University (IRH/GU), John Snow, Inc. (JSI), and PSI for the Reproductive Health Supplies Coalition (RHSC). 2012. *A Forecasting Guide for New and Underused Methods of Family Planning: What to Do When There Is No Trend Data?* Washington, DC: IRH/GU, JSI, and PSI for the RHSC.

For more information, contact [askdeliver@jsi.com](mailto:askdeliver@jsi.com) or visit <http://deliver.jsi.com>.

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