USAID GLOBAL HEALTH SUPPLY CHAIN PROGRAM
PROCUREMENT AND SUPPLY MANAGEMENT

FISCAL YEAR 2018
QUARTER 3 REPORT

April 1 to June 30, 2018

USAID FROM THE AMERICAN PEOPLE

PEPFAR
U.S. President's Emergency Plan for AIDS Relief

USAID FROM THE AMERICAN PEOPLE
CDC
U.S. President's Malaria Initiative

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Contract No. AID-OAA-I-15-00004

CONTENTS

ACRONYMS

3PL	third-party logistics
ACT	artemisinin-based combination therapy
ALu	artemether-lumefantrine
API	active pharmaceutical ingredient
ART	antiretroviral therapy
ARTMIS	Automated Requisition Tracking Management Information System
ARV	antiretroviral
ASMQ	artesunate-mefloquine
BI&A	Business Intelligence and Analytics
CAMEG	Central Medical Stores (Burkina Faso)
C&C	Contraceptives and Condoms
CARhs	Coordinated Assistance for Reproductive Health Supplies
CHAI	Clinton Health Access Initiative
CHAS	Coordinated HIV/AIDS Supplies Group
CNFM	Council of Women of Madagascar
COP	Country Operational Plan
CRP	collaborative registration process
CSP	Coordinated Supply Planning
CYP	couple years of protection
DHIS2	District Health Information Software Version 2
DRC	Democratic Republic of the Congo
EID	early infant diagnosis
eLMIS	electronic logistics management information system
EUV	end-use verification
FASP	forecasting and supply planning
FP/RH	family planning/reproductive health
FY	fiscal year
GHSC-PSM	Global Health Supply Chain Program-Procurement and Supply Management
GHSC-RTK	Global Health Supply Chain-Rapid Test Kit
GHSC-TA	Global Health Supply Chain-Technical Assistance
Global FP VAN	Global Family Planning Visibility and Analytics Network
IDIQ	indefinite delivery, indefinite quantity
ISO	International Organization for Standardization
IUD	intrauterine device
JMS	Joint Medical Stores
KPI	key performance indicator
LLIN	long-lasting insecticide-treated net
LLIHN	long-lasting insecticidal hammock net
LMD	last-mile distribution
LMIS	logistics management information system

MDR	multi-drug resistant
M&E	monitoring and evaluation
MCH	maternal and child health
MNCH	maternal, newborn, and child health
NDA	National Drug Authority (Uganda)
NMCP	National Malaria Control Program
NSCA	National Supply Chain Assessment
OTD	on-time delivery
OTIF	on-time in-full delivery
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PFSA	Pharmaceuticals Fund and Supply Agency (Ethiopia)
PMI	U.S. President's Malaria Initiative
PPMR	Procurement Planning and Monitoring Report
PPMR-HIV	Procurement Planning and Monitoring Report – HIV/AIDS
PPMRm	Procurement Planning and Monitoring Report – malaria
PQP	Prequalification of Medicines Programme
PWD	Population Welfare Department (Pakistan)
Q	quarter
QA	quality assurance
QMIA	quality management improvement approach
RDC	regional distribution center
RDT	rapid diagnostic test
RFP	request for proposal
RHSC	Reproductive Health Supplies Coalition
RTK	rapid test kit
SDP	service delivery point
SP	sulphadoxine-pyrimethamine
SPAQ	sulphadoxine-pyrimethamine + amodiaquine
SSWG	Systems Strengthening Working Group
TLD	tenofovir, lamivudine, dolutegravir
TLE	tenofovir/lamivudine/efavirenz
TSF	therapeutic and supplementary food
UHS	University of Health Sciences
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USSD	unstructured supplementary data service
VL	viral load
VMI	vendor-managed inventory
VMMC	voluntary medical male circumcision
WHO	World Health Organization
WMS	Warehouse Management System
XDR	extremely drug resistant

EXECUTIVE SUMMARY

The USAID Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project is pleased to present this report summarizing our work and performance for Fiscal Year 2018 (FY2018) Quarter 3 (Q3). We describe here our work to provide lifesaving commodities and to build efficient, reliable, and cost-effective health supply chains to deliver health products for the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), the U.S. President's Malaria Initiative (PMI), USAID's family planning and reproductive health (FP/RH) program, and USAID's maternal and child health (MCH) program, which equitably share the cost of the project. (For more information on cost sharing, please see page 4.)

GHSC-PSM Results

In this reporting period (April through June 2018), GHSC-PSM:

- Procured $199 million and delivered $194 million in health commodities, an increase of $15 million in deliveries over Q2;
- Achieved 73 percent on-time delivery (OTD) within the -14/+7 day contractual window[1] this quarter and 82 percent OTD in June;
- Delivered a large number of backlogged orders which lowered the rate of on-time, in full orders;
- Expanded our country presence to 33 field offices by adding Sierra Leone.

To date, GHSC-PSM has delivered:

Antiretroviral therapy (ART) to provide more than **2.9 million person-years of HIV treatment under PEPFAR;**

Antimalarials to treat nearly **99 million infections under PMI; and**

Contraceptives to provide **33 million couple years of protection (CYP).**

(See Annex A for an explanation of the methodology used to calculate these numbers.)

Over the life of the project, we have procured more than $1.35 billion in health commodities. The scale of just a subset of our deliveries is summarized in the box.

GHSC-PSM's OTD averaged 73 percent for Q3 (see Exhibit 1 on the next page). This represents steady performance, even as delivery values increased, though the project is not yet achieving our target of 80 percent OTD for the end of FY2018. The project achieved 82 percent OTD in June, and reduced the backlog of late orders to three percent of annual volume (below the target of five percent). On-time, in-full (OTIF) deliveries dropped to 60 percent, as a result of delivering a high percentage of backlogged orders (26 percent). (See section C1b for a more detailed discussion of OTD and OTIF.)

[1] With this delivery window, deliveries are considered on time if they are made within the period 14 days before or seven days after the agreed delivery date.

Exhibit 1. OTD and OTIF Over the Last Three Quarters

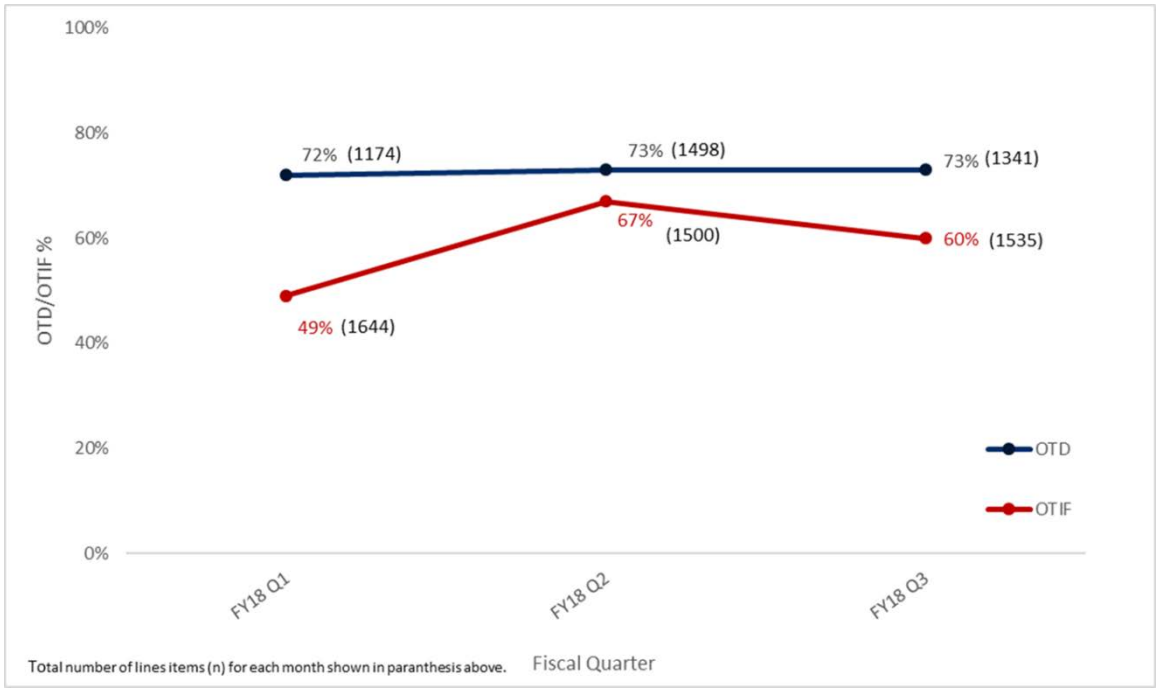
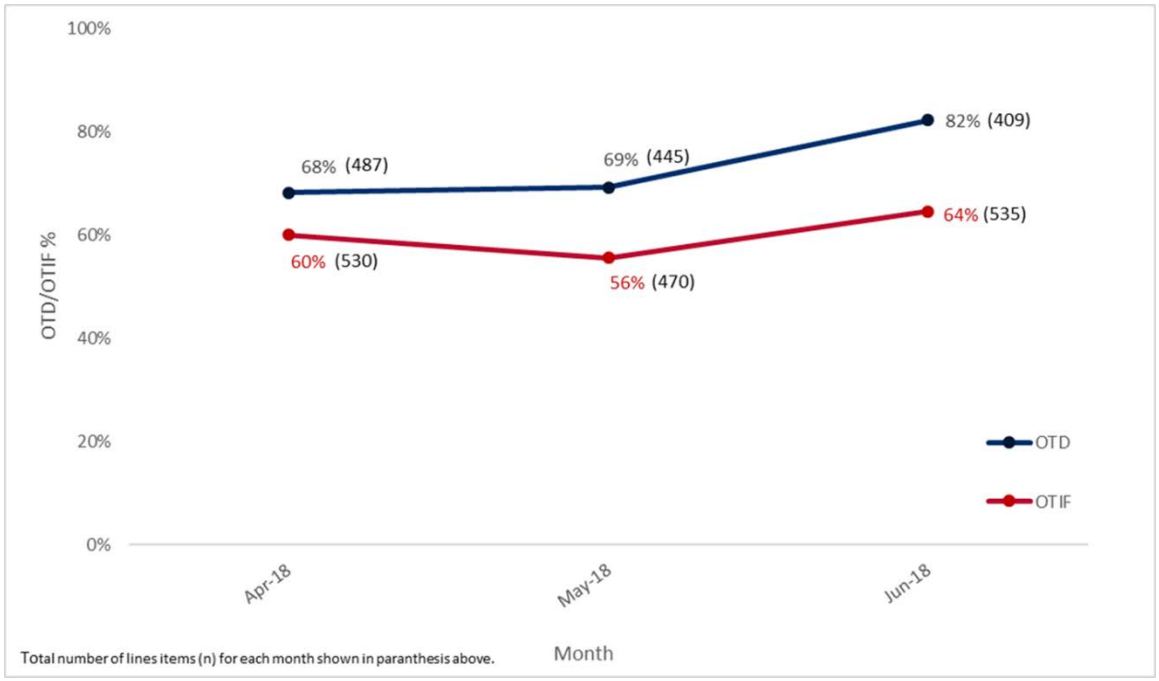


Exhibit 2. OTD and OTIF Over the Last Three Months



The project's OTD and OTIF rates and continued reduction in backlog provide evidence of the overall sustained success of our process improvements. GHSC-PSM's OTD performance in

malaria deliveries, though still lagging, improved significantly from 46 percent in Q2 to 63 percent in Q3. Improving the timeliness of the delivery of malaria products continues to be a major focus of our ongoing assessment of, and improvements in our processes.

Meeting Global Health Objectives

HIV

The project continued to support countries in their transitions to tenofovir, lamivudine, dolutegravir (TLD) as the preferred first-line treatment for HIV. GHSC-PSM made its first deliveries of TLD to Nigeria, Rwanda, and Zambia. Based on guidance from the World Health Organization (WHO) on the use of TLD in women of reproductive age, GHSC-PSM supported Ministries of Health in reassessing and, in some cases, revising their TLD transition plans, and quickly adjusted procurements to ensure the continued availability of other antiretroviral drugs (ARVs) for use in that population.

The project achieved an important first with viral load (VL) testing. GHSC-PSM entered a global long-term agreement with a manufacturer of VL tests that uses transcription-mediated amplification, a technology that allows a clinical lab to screen blood with fewer steps, less processing time, and faster results. The project procured these tests for Zambia, which represents the first time a PEPFAR program is using this technique for clinical service. Through this long-term agreement, GHSC-PSM will be able to support the quick adoption of this innovative technology, and provide countries best value through an all-inclusive price.

GHSC-PSM also negotiated long-term agreements with vendors of kits for voluntary medical male circumcision (VMMC) that are estimated to save $1.2 million a year.

Malaria

For malaria programs, GHSC-PSM undertook a variety of performance improvement initiatives that achieved a 17-percent increase in OTD for commodities.

GHSC-PSM also provided extensive support for strengthening the collection and use of data on the incidence of malaria and stock levels. The project worked closely with the Governments of Cambodia and Uganda to compare their data on malaria stocks and patient loads. The project also piloted a new version of the end-use verification (EUV) survey in Ghana, Zambia, and Zimbabwe. GHSC-PSM modified sampling for the survey in Zimbabwe to target facilities that are serving higher-incidence areas.

GHSC-PSM developed a new sourcing strategy for sulfadoxine-pyrimethamine + amodiaquine (SPAQ). The project now procures this product directly from the manufacturer (rather than through a wholesaler), which reduces lead time and costs. Also, through the placement of large inventory orders that leverage the PMI Emergency Loan Fund, GHSC-PSM will have in place the product to meet projected demand during calendar year 2019 which, contractually reserves highly coveted production capacity and time slots.

Voluntary Family Planning and Reproductive Health

For commodities for voluntary family planning/reproductive health (FP/RH), GHSC-PSM managed global supply constraints for both implants and injectables. The project started negotiating new contracts with suppliers of one- and two-rod implants; achieved cost savings of $200,000 to date for USAID Missions on orders of three-month contraceptive injectables under

a new contract with tiered pricing; and negotiated two new contracts for intrauterine devices (IUDs), which resulted in an average cost savings for USAID of approximately 32 percent per unit compared to previous average pricing. The project also continued to support global efforts to ensure the security of the supply of contraceptives, by providing data on procurement history and stock status in multiple fora and contributing to the Global Family Planning Visibility and Analytics Network (Global FP VAN).

Maternal and Child Health

GHSC-PSM worked across multiple fronts to promote the availability of quality commodities for maternal, newborn, and child health (MNCH). The project researched key barriers and potential opportunities related to the increased use of the WHO's Collaborative Registration Process for MNCH products. The project supported the Ghana Health Service in launching a broad strategy to ensure the quality of oxytocin through its health supply chain. GHSC-PSM also developed a guidebook on how regulators can develop legislation to adopt global standards for pharmaceutical traceability, and to support local manufacturers in adopting these standards. Finally, the project conducted temperature-monitoring throughout the supply chains in Burkina Faso and Mozambique to ascertain whether prolonged temperature excursions were likely to affect temperature-sensitive MNCH and other products.

Strengthening of Health Supply Chain Systems

The cost of technical assistance and supply chain system strengthening activities are proportionally shared across health elements, HIV, malaria, family planning and MCH. Cost sharing formulas are reviewed annually for each office to verify that each task order's share of the total cost for technical assistance remains equitable. However, systems strengthening effort associated with health element-specific activities, e.g. LLIN distribution for malaria or viral load scale-up for HIV, are supported entirely by the relevant health element.

Our work to strengthen in health supply chain systems continued to bring important results. For example, the new electronic logistics management information system (eLMIS) in Nigeria (Navision) will collect data from about 19,000 sites. GHSC-PSM helped the Government of Uganda streamline the review process for import applications, improve its information systems, and agree to fast-track clearance applications for donor-funded health commodities, which reduced importation lead times by up to eight weeks for these suppliers. A new, automated warehouse management system went live in Lesotho, which increased accuracy and efficiency. Work with the Government of Rwanda on the eLMIS and an approach to improving the quality of management yielded impressive results across an array of supply chain indicators. Workforce-development initiatives in several countries moved forward; for example, solid results from new supply chain task forces in Cameroon will lead to the roll out of this approach nationwide. The project supported a National Supply Chain Assessment (NSCA) in Uganda, the first implementation of this revised tool. Finally, the project expanded its field presence by opening a new PMI-funded office in Sierra Leone, now the 33rd country with GHSC-PSM presence.

SECTION A

INTRODUCTION

A1. Background

The USAID GHSC-PSM project works to ensure uninterrupted supplies of health commodities to save lives and to create a healthier future for all. The project directly supports five global health areas of importance to the U.S. government:

- The U.S. President's Emergency Plan for AIDS Relief to help reach the Joint United Nations Programme on HIV/AIDS (UNAIDS) global 90-90-90 HIV/AIDS testing, treatment, and viral load (VL) suppression targets
- The U.S. President's Malaria Initiative to reduce malaria deaths and substantially decrease malaria morbidity, toward the long-term goal of elimination
- USAID's FP/RH program to ensure that key reproductive health commodities are available for safe and reliable family planning
- USAID's Maternal, Newborn, and Child Health (MNCH) program to prevent child and maternal deaths
- Other public health threats as they emerge, with support for Zika at this time

The project purchases and delivers health commodities, offers comprehensive technical assistance to strengthen national supply chain systems, and provides global supply chain leadership to ensure that lifesaving health supplies reach those most in need.

A2. About This Report

GHSC-PSM is pleased to present our performance report for FY18 Q3 (April 1 through June 30, 2018). This report includes calculations of all required quarterly metrics from the project's monitoring and evaluation (M&E) plan.

GHSC-PSM is a matrixed project that integrates work across two axes: health areas and technical objectives. To reflect our work in each of these areas, the report is organized as follows:

- Section B summarizes major activities in each of the **five health areas** (HIV/AIDS, malaria, FP/RH, MNCH, and other public health threats).
- Section C describes activities under each of the **three main technical objectives** (global commodity procurement and logistics, systems strengthening, and global collaboration). Because the M&E indicators are structured around the project's objectives, in Section C we also discuss key indicator results.
- Annex A provides **performance and context indicators** for April 1 through June 30, 2018 (quarterly indicators)

Given the size and complexity of GHSC-PSM, this report summarizes our primary efforts this quarter and reflects only a fraction of the project's efforts each day to help people around the world live healthier lives.

SECTION B

PROGRESS BY HEALTH AREA

In this section, we summarize GHSC-PSM's support for each of the five health areas (HIV/AIDS, malaria, FP/RH, MCH, and other public health threats) over the last quarter.

B1. HIV/AIDS

In Brief

27 countries procured HIV/AIDS commodities and **30 countries received supply chain technical assistance** with HIV/AIDS funding under the contract this quarter.

GHSC-PSM **supported the achievement of PEPFAR goals** by ensuring that country supply chains support the transition of patients on antiretrovirals (ARVs) to the preferred first-line regimen medicine, tenofovir, lamivudine, dolutegravir (TLD).

GHSC-PSM's **first deliveries of TLD reached Nigeria, Rwanda, and Zambia** this quarter. All countries are revising their TLD transition plans based on World Health Organization (WHO) guidelines about use of dolutegravir in women of childbearing age. GHSC-PSM is balancing the supply of other first-line regimens and new orders for TLD to ensure uninterrupted treatment for people living with HIV.

Procurement of HIV/AIDS Commodities

FY18 Q3:
- $119 million
- including $59 million in ARVs

Life of Project:
- $938 million
- including $575 million in ARVs

GHSC-PSM has delivered enough ARVs to provide **2.9 million person-years of HIV treatment over the life of the project.**

As of the end of June 2018, nine countries (Burundi, Zimbabwe, Cameroon, Ghana, Mozambique, Nigeria, Tanzania, Uganda, and Zambia) report their stock status for adult and pediatric first-line ARVs and rapid test kits (RTKs) into the Procurement Planning and Monitoring Report (PPMR)-HIV platform. PPMR-HIV is in the process of onboarding another 12 countries (Botswana, Côte d'Ivoire, Democratic Republic of the Congo (DRC), eSwatini, Ethiopia, Haiti, Lesotho, Malawi, Namibia, Rwanda, South Sudan, and Vietnam) by the end of 2018.

GHSC-PSM is working closely with USAID to report monthly site-level stock status for HIV commodities at the lowest service delivery point (SDP) level in PEPFAR-supported countries. The initial focus is on collection, analysis, and reporting these datasets for Haiti, Nigeria, Zambia, and Zimbabwe, but all PEPFAR-supported countries are expected to start reporting the SDP-level data in FY2019. The data collected from PPMR-HIV and sites will be analyzed using PEPFAR results data to identify areas where supply chain improvements could positively impact PEPFAR results.

GHSC-PSM procured its first instrument for viral load (VL) testing using the transcription-mediated amplification molecular technique.

GHSC-PSM supports the PEPFAR goal of controlling the HIV/AIDS epidemic. With PEPFAR funding, the project works to help countries achieve epidemic control under the UNAIDS 90-90-90 framework — so that 90 percent of people living with HIV know their status, 90 percent of people who know their status are on treatment, and 90 percent of people on treatment have suppressed viral loads.

The project provided technical assistance to 30 countries to strengthen national supply chains and improve health commodity availability. GHSC-PSM is actively supporting PEPFAR's strategy for 2017 to 2020, which focuses on 13 priority high-burden countries. The countries GHSC-PSM has supported with procurement or technical assistance in FY18 are listed in Exhibit 1. PEPFAR priority countries are indicated by an asterisk in Exhibit 3.

Exhibit 3. Countries Receiving Support from GHSC-PSM with HIV/AIDS Funding in FY18

Country	Procure-ment	Technical Assistance	Country	Procure-ment	Technical Assistance
AFRICA			**ASIA**		
Benin	✓		Burma	✓	✓
Botswana*	✓	✓	Cambodia		✓
Burkina Faso	✓		Indonesia		✓
Burundi	✓	✓	Laos	✓	
Cameroon	✓	✓	Nepal	✓	
Côte d'Ivoire*	✓		Papua New Guinea	✓	
DR Congo	✓		Thailand	✓	
eSwatini*	✓		Vietnam	✓	✓
Ethiopia	✓	✓			
Ghana	✓	✓			
Kenya* ^		✓	**LATIN AMERICA/CARIBBEAN**		
Lesotho*		✓	Bahamas	✓	
Malawi*	✓	✓	Barbados	✓	✓
Mali	✓	✓	Dominican Republic	✓	
Mozambique	✓	✓	El Salvador	✓	✓
Namibia*	✓	✓	Guatemala	✓	✓
Nigeria	✓	✓	Haiti*	✓	✓
Rwanda*	✓	✓	Honduras		✓
Senegal	✓		Jamaica	✓	✓
South Sudan	✓	✓	Panama		✓
South Africa	✓		Suriname	✓	✓
Tanzania*	✓		Trinidad & Tobago	✓	
Togo	✓				
Uganda*	✓	✓			
Zambia*	✓	✓	**EUROPE/EURASIA**		
Zimbabwe*	✓	✓	Ukraine	✓	

** High HIV burden PEPFAR focus country*
^ GHSC-PSM provides technical assistance in Kenya under a unique task order (Task Order 5) overseen by USAID/Kenya.

PEPFAR COP 2018 Agency Oversight and Approval Meeting

In April, GHSC-PSM participated in PEPFAR's global meeting to approve Country Operational Plans (COPs) for 2018. Representatives from PEPFAR implementing partners (including GHSC-PSM), civil society organizations, multilateral organizations, the Global Fund, and ministries of health participated in these meetings in Washington, D.C. GHSC-PSM prepared country-specific supply chain summaries with extensive background information on our procurement and supply chain systems strengthening work, supply chain performance, accomplishments, and challenges in each country.

Working to Achieve the First 90: Diagnosing 90 Percent of People with HIV Who Do Not Know Their HIV Status

GHSC-PSM is actively involved in supporting RTK availability to reach the first 90, HIV diagnosis. The project meets regularly with the GHSC-RTK project (implemented by Remote Medical International [RMI]) to get updates on its RTK procurements, to ensure a smooth transfer of country orders to GHSC-RTK, and to identify where GHSC-PSM's support is needed at the field office level. GHSC-PSM helps countries forecast and quantify the number of RTKs needed. GHSC-PSM supported development and review of RTK supply plans for 14 countries this quarter, providing projections of RTK needs 18 months into the future for those countries. These projections help GHSC-RTK plan its procurements with manufacturers and helps ensure test kit availability. The project also assisted countries in distributing RTKs or in resolving

Working to Achieve the Second 90: 90 Percent of All People with Diagnosed HIV Infection Will Receive Sustained Antiretroviral Therapy

To help achieve treatment goals, this quarter, GHSC-PSM continued to be fully engaged in supporting the planned transition to TLD. The project also started an initiative to bring greater visibility to availability of treatment at SDPs, addressed challenges in the pediatric ARV market, and advanced long-term contracts for ARVs.
logistics issues to optimize RTK distribution.

Transition to TLD

GHSC-PSM continued to support PEPFAR's plans to transition to TLD, a fixed-dose combination ARV that better suppresses VL, has an improved side effect profile, and presents lower risk of drug resistance. The project's first deliveries of TLD arrived in May and June in Nigeria, Rwanda, and Zambia. GHSC-PSM continues to work with countries to plan their drawdown of legacy ARVs, especially those containing nevirapine, and to scale up their transition to TLD.

TLD delivered in Nigeria. *Photo credit: Anthony Abu, GHSC-PSM*

New WHO Guidelines on TLD

GHSC-PSM helped countries respond to the WHO's statement on dolutegravir released on May 18. Preliminary studies in Botswana showed there may be increased risk of neural tube defects in babies born to women on TLD at the time of

conception, leading WHO to advise countries to use TLD with caution for women of reproductive age who are not using a long-acting contraceptive method. While WHO and relevant stakeholders investigate these preliminary findings, many countries are opting to maintain HIV-infected women of reproductive age on the ARV tenofovir/lamivudine/efavirenz (TLE). GHSC-PSM helped countries revise their TLD transition plans and ARV orders and placed an emergency order for 1.5 million units of TLE. This will allow us to continue to provide TLE to avoid treatment interruption for women of reproductive age who are not transitioned to TLD.

Pediatric Treatment

Thanks to PEPFAR's success in reducing perinatal transmission of HIV, fewer children have HIV and require treatment. This success creates challenges in providing the most accurate quantity of pediatric ARVs. The market is small and somewhat uncertain, with forecasting complicated by the fact that dosing and regimens are based on both age and weight of the child. Manufacturers do not continuously manufacture all pediatric medicines that are critical to the health of infants and children with HIV. This quarter, GHSC-PSM participated in a WHO meeting in Geneva on the Optimal Pediatric Formulary and the Pediatric Limited Use List. Meeting results provide clearer guidance on global clinical direction to prioritize certain first-line pediatric regimens. GHSC-PSM is coordinating closely with other global procurers through the ARV Procurement Working Group in improving supply planning to avoid country-level stockouts for key pediatric formulations such as pediatric lopinavir/ritonavir and nevirapine for oral suspension. The project will continue to work closely with global stakeholders and manufacturers to address underlying market factors affecting production, including bringing new and novel pediatric formulations to market. GHSC-PSM also pre-positions lower-demand, yet still critical, pediatric products in our regional distribution centers, particularly for products from a capacity-constrained sole source. New WHO guidelines on pediatric treatment will be released at the International AIDS Conference in Amsterdam in July. GHSC-PSM HQ is prepared to face these changes, with our field offices.

HIV/AIDS Task Order Monthly Site Level Stock Reporting

To achieve epidemic control, ARVs must be available to people living with HIV on a continuous basis. Host governments and PEPFAR need to know that supply meets demand at SDPs — the point where patients receive treatment. This quarter, GHSC-PSM launched a major initiative to collect, analyze, and report monthly HIV/AIDS commodity stock data, focusing initially on ARVs, from the lowest distribution point possible in GHSC-PSM-supported countries. The project developed a phased plan to expand the levels of the supply chain system at which we can collect ARV stock information each month. The first GHSC-PSM countries to start monthly reporting of ARV stock data will be Haiti, Nigeria, Zambia, and Zimbabwe. Other GHSC-PSM-supported countries are working on providing such information and incorporating activities for this in their COP18 work plans. The data collected from the site level and the PPMR-HIV will be analyzed using PEPFAR results data to identify where supply chain improvements could positively impact PEPFAR results.

Working to Achieve the Third 90: 90 Percent of All People Receiving Antiretroviral Therapy Will Have Viral Suppression

Reaching the third 90 requires scaling up viral load (VL) monitoring of patients on ART. VL monitoring indicates whether a patient's treatment is effective. A suppressed viral load

decreases the likelihood of transmitting HIV to a partner, which is critical to decreasing new HIV infections and ultimately controlling the HIV/AIDS epidemic.

GHSC-PSM continues to support countries with the challenges they face in scaling up VL testing. These challenges include low use and frequent breakdown of instruments, complicated by inadequate support for maintaining equipment and breaks in the cold chain during reagent delivery. GHSC-PSM is helping country teams improve VL sample referral networks and coordinate instrument procurement. The project also is working to decrease variability in VL pricing within and across countries.

This quarter, GHSC-PSM introduced use of a new technology for VL testing and concluded another contract that allows countries to track and monitor VL vendor performance (see box).

Other examples of GHSC-PSM support for VL testing this quarter include:

Two Important VL Advances

GHSC-PSM achieved two important advances in VL testing in Zambia this quarter.

The project entered into a global long-term agreement with a manufacturer of VL tests that uses transcription-mediated amplification – a technology that allows a clinical lab to screen blood with fewer steps, less processing time, and faster results. Through this long-term agreement, GHSC-PSM will be able to support quick adoption of this innovative technology and provide countries best value through an all-inclusive price. Thus far, GHSC-PSM has procured 45,000 tests for Zambia, representing the **first time this technique is being used for clinical service in a PEPFAR program.** Further, these 45,000 tests will be used to clear a large backlog in VL testing in Zambia.

The testing contract for Zambia includes new requirements for reporting. While, in the past, contracts for lab instruments just required delivery of the instrument, GHSC-PSM's new contract requires the vendor to regularly submit data on days of downtime, response to service issues, and error rates. This will allow the government of Zambia to **monitor performance of VL testing**.

- Launching a request for proposals (RFP) to recompete national procurements for VL and early infant diagnosis (EID) in Nigeria. The solicitation was crafted to reflect the outcomes of the optimized VL and EID network modeling exercise that GHSC-PSM conducted in Nigeria with the health ministry, USAID, U.S. Centers for Disease Control and Prevention, and U.S. Department of Defense.
- Helping the governments of Mozambique and Haiti develop maintenance contracts that hold service providers more accountable and improve instrument performance and efficiency and reduce cost per test.
- Achieved reductions in VL/EID prices per test in DRC, Zambia, and Mozambique, totaling $620,000 for those orders.

Also, GHSC-PSM supported USAID in working with the Global Fund and OGAC to plan and negotiate prices for a major viral load manufacturer's protocol transition. This transition entailed technical, supply chain, and cost components. GHSC-PSM provided key intelligence to support the protocol transition.

Strategic Sourcing of HIV Commodities

Sourcing Support for Voluntary Medical Male Circumcision (VMMC) Outreach Campaigns for Zimbabwe

GHSC-PSM sourced VMMC commodities and equipment for Population Services International (PSI), a PEPFAR partner that is implementing VMMC in Zimbabwe. We recommended procurement of 40 examination tables and operating stools that are easy to transport and thus more suitable for outreach campaigns. This delivery supports the national VMMC program and implementing partners in achieving their VMMC targets for preventing new HIV infections among men and for reducing cases of cervical cancer among their partners.

Achieving Cost Savings Through Long-term Agreements

During Q3, GHSC-PSM secured long-term agreements with four vendors of VMMC kits. With the agreements in place, manufacturing lead times for the kits should decline by 30 percent resulting in quicker turnaround between when an order is placed and when the kits are available. The agreements are estimated to save $1.2 million over one year.

$1.2m to be Saved on VMMC kits

Long-term agreements with four vendors of VMMC kits will cut manufacturing lead time by 30 percent and save $1.2 million in the next year.

Male Condoms

GHSC-PSM began vendor-managed inventory (VMI) for plain male condoms during Q3. The project's service provider produced the first VMI No Logo male condom stock and fulfilled the first order. By reducing transport and warehousing costs to store condom stock at GHSC-PSM RDCs, the VMI solution creates cost efficiencies.

Enhancing Commodity Security

GHSC-PSM continued to improve visibility into availability of stocks of major HIV commodities on a national level in many countries and to work toward information sharing with the Global Fund to enhance commodity security.

PPMR-HIV

GHSC-PSM continues to develop and expand the PPMR-HIV, a data-gathering tool and data visualization platform focused on HIV commodities. Modeled on similar tools developed for FP/RH and malaria commodities (the PPMR and PPMRm, respectively), PPMR-HIV provides donors with data on stock status for first- and second-line adult and pediatric ARVs and HIV RTKs at the central and, where possible, lower levels. Data submitted to the PPMR-HIV is shared with the Global Fund so that USAID and the Global Fund can discuss low stock situations and determine which is best placed to take mitigating actions. It is anticipated that this tool and the collaboration across donors will reduce stockout and low stock situations in PEPFAR countries.

This quarter, two new countries started reporting for PPMR-HIV (see box). GHSC-PSM is working closely with the governments of Botswana, Côte d'Ivoire, DRC, eSwatini, Ethiopia, Haiti, Lesotho, Malawi, Namibia, Rwanda, South Sudan, and Vietnam to prepare them to begin reporting in Q4. Onboarding a new country —which can take two to five months — entails: reaching an agreement with the government on sharing data; understanding the country's supply

chain system, its logistics management information system (LMIS), and data availability; training country staff in data entry; and adding each country to the data entry platform and dashboard.

Expansion of PPMR-HIV

In Q3, Burundi and Zimbabwe joined Cameroon, Ghana, Mozambique, Nigeria, Tanzania, Uganda, and Zambia in reporting their HIV commodity stock status to PPMR-HIV. An additional 12 countries are slated for onboarding next quarter.

Ultimately PPMR-HIV will be the information platform that supports coordination of shipments across the two major global procurers of HIV commodities, PEPFAR (through GHSC-PSM) and the Global Fund. To this end, USAID and the Global Fund formed the Coordinated HIV/AIDS Supplies group (CHAS), which had its inaugural meeting in May. In June, GHSC-PSM facilitated a CHAS meeting to discuss data visibility, forecasting, and supply planning. The group is working to establish a process for regularly identifying gaps and areas of duplication using the PPMR-HIV collaboration platform. The group also is building a common understanding of how USAID and GHSC-PSM procure PEPFAR-funded commodities and how the Global Fund functions internally for HIV commodity procurement and supply chain functions. Participants agreed to continue meeting each month to review country HIV commodity security data on the PPMR-HIV dashboard and to start coordinating on procurement plans.

HIV Commodity Surveillance

PEPFAR monitors whether national HIV commodity stock at all supply chain levels is adequate to achieve epidemic control. GHSC-PSM is working to provide this information at central and regional levels until the PPMR-HIV process can provide these data for all major PEPFAR countries. This quarter, GHSC-PSM surveyed our field offices on availability of stock level information at central levels, and on how HIV commodity availability data are shared in their countries. While GHSC-PSM has full visibility into project deliveries and some visibility into stock levels of the commodities that we procure, our field offices have less information on other deliveries (e.g., from the Global Fund or host government, which together account for approximately 75% of the HIV commodities in those countries). All countries have some forum that discusses HIV commodity stock levels, procurements, and deliveries regularly. GHSC-PSM is exploring whether we can use information from these meetings until more detailed information is available through the PPMR-HIV reporting process.

Other

In a collaborative effort between the HIV/AIDS and MNCH task orders, GHSC-PSM piloted ambient temperature monitoring at various points in the health supply chain in Mozambique using low-cost sensors and cloud technology. (Please see the more detailed description of this work in Section B4.)

B2. Malaria

In Brief

A total of **25 countries** procured malaria commodities, and **25 countries** received systems strengthening support with malaria funding under the contract this quarter.

The project supported distribution of long-lasting insecticide-treated nets (LLINs) to provide **protection from malaria** in Angola, Burundi, Cambodia, Ethiopia, Ghana, Madagascar, Mali, Mozambique, Nigeria, and South Sudan.

The project continued to provide technical leadership in **promoting malaria commodity market health** for secure supply.

Procurement of Malaria Commodities

FY18 Q3:
- $58 million

Life of Project:
- $338 million

GHSC-PSM has delivered enough antimalarials to **treat nearly 99 million infections over the life of the project.**

Countries **started reporting on artesunate suppositories for the PPMRm**. Also, Côte d'Ivoire reported stock data in PPMRm for the first time.

Under the PMI-funded malaria task order, GHSC-PSM supplies lifesaving prevention and treatment medicines, rapid diagnostic tests (RDTs), and LLINs. We offer partner countries new approaches to strategic planning, logistics, data visibility, analytics, and capacity building. The project also provides technical guidance to strengthen global supply, demand, financing, and introduction of new malaria commodities.

In this reporting period, GHSC-PSM procured malaria commodities valued at $58 million for 25 countries. Through technical guidance, the project also is strengthening national supply chains and improving health commodity availability in 25 countries. The countries supported with procurement or technical assistance in FY18 are listed in Exhibit 4 on the following page.

Country Support

GHSC-PSM provided wide-ranging supply chain systems strengthening support in 25 countries in Q3 with a focus on improving the availability of malaria commodities.

Improving Access to and Use of Quality Data

Having access to quality commodity data is a key requirement for ensuring accurate and timely procurements and for measuring the impact of PMI-supported programs. The GHSC-PSM malaria team relies on three key primary sources of data:

- The host country management information systems, in particular, the LMIS for routine malaria commodity status reports

- The data collected through end-use verification surveys (EUVs) to verify availability of malaria commodities at health facilities
- The quarterly PPMRm reports to monitor malaria commodity stock status

PMI, through GHSC-PSM, provides technical support to country counterparts to strengthen their LMIS, to implement the EUV, and to submit the quarterly PPMRm updates. Also, GHSC-PSM supported countries in improving their use of data in these reports for decision making.

Exhibit 4. Countries Receiving Support from GHSC-PSM with Malaria Funding in FY18

Country	Procure-ment	Technical Assistance	Country	Procure-ment	Technical Assistance
AFRICA			**AFRICA (cont.)**		
Angola	✓	✓	Malawi	✓	✓
Benin	✓		Mali	✓	✓
Burkina Faso	✓	✓	Mozambique	✓	✓
Burundi	✓	✓	Niger	✓	✓
Cameroon	✓	✓	Nigeria	✓	✓
Côte d'Ivoire	✓		Rwanda	✓	✓
Dem. Rep. of Congo	✓		Senegal	✓	
Ethiopia	✓	✓	Sierra Leone	✓	✓
Ghana	✓	✓	South Sudan	✓	✓
Guinea	✓	✓	Tanzania	✓	
Kenya ^	✓	✓	Uganda	✓	✓
Liberia	✓	✓	Zambia	✓	✓
Madagascar	✓	✓	Zimbabwe	✓	✓
ASIA					
Burma	✓	✓			
Cambodia	✓	✓			
Laos	✓	✓			
Thailand	✓	✓			

^ GHSC-PSM provides technical assistance in Kenya under a unique task order (Task Order 5) overseen by USAID/Kenya

Using DHIS and LMIS Data to Improve Malaria Commodity Supply Planning in Uganda

In June 2018, the Ugandan National Malaria Control Program (NMCP) held a workshop to review the national malaria quantification estimates and to revise the assumptions used during quantification. GHSC-PSM collaborated with the Joint Medical Stores (JMS) and the Uganda Health Supply Chain project on a presentation that compared data reported in the District Health Information Software Version 2 (DHIS2 - the official reporting system for the health ministry) to data reported at the JMS, which is the warehouse where PMI-procured commodities are stored. The analysis revealed that only 78 percent of private not-for-profit facilities submit reports in the DHIS2. Further, JMS reported higher inpatient numbers, confirmed malaria cases in the outpatient department, stock on hand, and consumption data than the DHIS2. Key recommendations from the analysis were that partners should conduct a large-scale data quality assessment to identify the root causes of data variations and intensify support supervision strategies to address data quality issues at the health facilities.

At the central level, reviews of the warehouse LMIS data and the quarterly review of the supply plans determined that, as of April 30, stock levels of artesunate injectable, the four artemether/lumefantrine (ALu) dosage forms, and LLINs were above the maximum six months of stock level due to over ordering, an unexpected decrease in the number of malaria cases, and anecdotal reports of greater adherence to treatment guidelines that reduced overuse of medications. Based on this analysis, pending shipments of artesunate injectable and ALu were delayed. The Quantification and Procurement Planning Unit, GHSC-PSM, and JMS will continue to closely monitor consumption and revise the shipment schedule to ensure sufficient stocks are available as needed during peak malaria season (April–July).

Using Stock Data to Improve the Distribution of Malaria Medicines in Cambodia

In Cambodia, at the request of the NMCP, GHSC-PSM conducted a stock analysis of the lowest-level health facilities to compare the number of reported cases of malaria per facility to stock levels of artesunate-mefloquine (ASMQ). This was to determine whether it would be possible to redistribute ASMQ from facilities with excessive stocks to those needing an urgent supply. Resistance to most of the common antimalarial drugs in Cambodia's population has led to the need for a unique combination of drugs with ASMQ to treat malaria. With only one pharmaceutical company producing this special combination drug, there is no readily available stock of it anywhere in the world. About 50 percent of treatment facilities in Cambodia were at risk of stockout of ASMQ due to lack of visibility into stock status and consumption data, and late placement of manufacturing orders. GHSC-PSM's analysis showed that facilities with higher numbers of reported malaria cases were facing stockout risks, whereas those with lower numbers of reported cases held excessive ASMQ stock. The government used this information to address stock risks (see box).

Marrying Stock and Consumption Data to Address Pending Stockout

Using data that showed 50 percent of treatment facilities were at risk of ASMQ stockout, GHSC-PSM assisted the NMCP in developing an emergency distribution plan for an alternative drug, Pyramax. This allowed Cambodia to avoid a potentially major stockout of antimalaria drugs.

Improving EUV Data Collection

In Q3, GHSC-PSM worked with PMI to implement a new end use verification (EUV) sampling methodology and expand data collection in Zimbabwe. The malaria EUV survey's purpose is to assess availability of malaria commodities at health facilities, stock management practices, malaria burden, case management practices, and health-care worker capacity to diagnose and manage malaria cases in a random sample of health facilities. Instead of using the traditional approach of randomly sampling health facilities regardless of malaria burden, the new sampling strategy in Zimbabwe involved weighting the sample for recent malaria incidence by district. This increases the likelihood that facilities in higher-burden malaria areas that handle more malaria commodities are selected, while still ensuring that facilities in lower-burden and pre-elimination areas also are represented. The sampling approach also allowed the survey to address issues specific to health facilities in the three incidence strata (high, medium, and low). The survey included questions related to village health worker stock management practices and primaquine management in pre-elimination districts. The new survey also collected information on issues critical to the Zimbabwe supply chain system such as the management of expiries and commodities given to village health workers. The survey provided representative and comprehensive information for planning, advocacy, and decision making.

Using EUV Data to Improve District and Health Facility Level Supply Chain Management in Burundi

In FY17, GHSC-PSM identified the best-performing and poorer-performing health centers in Burundi based on baseline/EUV indicators for correct filling of stock cards, compliance with minimum and maximum stock levels, LMIS reporting rate, and stockout rate. In June, GHSC-PSM, in collaboration with the Direction de la Pharmacie du Medicaments et des Laboratoires, organized a facility-to-facility meeting to exchange experiences between best-performing and lower-performing store management districts and facilities. In the meeting, lower-performing districts and health centers developed corrective actions to be implemented in the near future. As the districts implement these corrective actions, they will continue to benefit from the support of their counterparts in the better-performing districts. Also, GHSC-PSM will provide follow-up supervisory visits to monitor their progress. GHSC-PSM will continue to provide support to the government of Burundi to roll out this strategy and to monitor its impact on improving facility-level supply chain management skills.

PPMRm Updates

In Q3, countries started reporting on artesunate suppositories for the PPMRm. Also, Côte d'Ivoire reported stock data in PPMRm for the first time. PPMRm information was one of the tools that assisted in confirming overstocked countries and identifying understocked countries, which resulted in several actions at the global supply chain level, including:

- Burkina Faso: Due to overstock in Kenya, orders of ALu were reallocated from Kenya to fulfil the pending Burkina Faso orders.
- DRC: Due to an overstock in Tanzania, an existing order of Sulfadoxine-pyrimethamine (SP) for Tanzania was reallocated to DRC
- Madagascar: Due to an overstock in Tanzania, and emergency need in Madagascar, artesunate injectable and SP orders were reallocated from Tanzania to Madagascar
- Zambia: GHSC-PSM expedited a shipment of RDTs to mitigate an RDT shortage due to a delay in a Churches Health Association of Zambia shipment

LLIN Distribution Support

In Q3, many countries launched or continued large-scale LLIN campaigns as a key prevention strategy. These are massive initiatives to ensure beneficiaries, particularly in high-impact areas, receive the nets they need in advance of the rainy season. While the actual distributions can last just a few weeks, logistics, supply planning, procurement, and pre-positioning the nets take months.

Launch of LLIN Campaign in Liberia

In April, GHSC-PSM participated in a mass distribution campaign of LLINs to nine counties throughout Liberia in collaboration with the Central Medical Stores and NMCP. This entailed delivering and distributing 286,850 LLINs. To facilitate distribution, malaria programs notify local authorities about the upcoming distribution to secure their cooperation. GHSC-PSM collaborated with the NMCP and Central Medical Stores to develop standard operating procedures for notification. In accordance with the procedure, all counties receiving LLINs were contacted before delivery and were well prepared to receive the LLINs. The distribution reached 95 percent of health facilities in Montserrado County and 100 percent of the targeted

county depots. Overall, the mass distribution campaign was a success and contributed to the NMCP's goal of achieving universal coverage of LLINs, including for vulnerable populations such as pregnant women and children under five.

Forest Rangers to the Rescue

In Cambodia, GHSC-PSM is establishing a new supply chain to deliver antimalarial commodities to mobile, forest-dwelling people. The project is working with forest rangers, who are taking on an expanded role under an innovative partnership between the Ministry of Health and Ministry of Environment. They are delivering long-lasting insecticidal hammock nets (LLIHNs) to communities living in environmentally protected areas in 20 priority provinces. Getting the nets to the forest-dwelling populations, who are vulnerable to malaria infection and yet wary of authorities, has been a daunting challenge. GHSC-PSM procured and delivered 30,000 LLIHNs and information leaflets for the forest rangers and trained forest rangers in distribution methods.

World Malaria Day, April 2018: Cambodia's Minister of Health and Minister of Environment hand over LLIHNs to forest rangers. *Photo credit: GHSC-PSM*

Official Handover of U.S. Government-Funded LLINs in Madagascar

GHSC-PSM procured 6 million LLINs that the U.S. government officially handed over to the State of Malagasy in April. These nets will help protect 10.8 million people, who will receive their free mosquito nets at basic health centers. GHSC-PSM procured the LLINs and provided logistics, capacity building, transport, and distribution of nets to 52 districts.

Involvement of Malagasy Women in LLIN Campaign Organization

To achieve a more equitable gender balance in distribution of resources and more impactful communications materials for the LLIN campaign, the National Council of Women of Madagascar (CNFM) helped develop training documents and implement the net distribution campaign. The CNFM contributed gender-sensitive management

Members of the CNFM during a training in Madagascar. *Photo credit: Claudia Rakotonirina, GHSC-PSM*

tools and communication materials for net recipients to promote an inclusive approach. A benefit of gender mainstreaming a campaign is ensuring equity in the beneficiaries of LLINs, so all homes, heads of households, men, and women will have a LLIN. The campaign will obtain sex disaggregated data on families receiving the nets. An additional benefit is communication materials that more effectively target the women and men who receive the LLINs.

Support for Routine LLIN Distribution in Mozambique

In May, PMI conducted a pilot campaign distribution of LLINs to primary schools in Namarroi, a district of Zambézia province in Mozambique. GHSC-PSM procured 30,000 LLINs and helped distribute them to students from 134 primary schools, reaching 93.3 percent of students. This pilot's goal was to assess whether annual school distributions were a viable supplement to the Mozambique NMCP mass campaigns that occur every four years. This annual distribution would contribute to the national strategy of supporting continuous LLIN access and ownership. The pilot campaign's last phase will take place in 2019, when LLINs once again will be distributed to first-, third-, and fifth-grade students in Namarroi district primary schools. A final assessment, including of cost efficiency, will be conducted to determine the benefit of including school-based LLIN distribution as part of the national continuous distribution strategy to prevent malaria.

Women demonstrate how to properly use LLINs during a distribution campaign in Ethiopia. *Photo credit: GHSC-PSM*

Commodity Procurement, Sourcing, and Delivery

GHSC-PSM's provision of malaria commodities this quarter entailed procurement, quality assurance, deliveries, support for transferring/redistributing stocks, and response to emergencies, as summarized below.

Procurement

Since the start of the project, GHSC-PSM has procured malaria commodities for 29 countries (all the PMI countries plus two USAID-designated malaria countries). Over the life of the project, we have procured $338 million in malaria commodities, including $58 million this quarter.

Commodities Procured for Malaria Programs

- Artemisinin-based combination therapies (ACTs)
- Laboratory consumables
- LLINs
- Malaria rapid diagnostic tests (mRDTs)
- Other nonpharma
- Other pharma
- Severe malaria medicines
- Sulfadoxine-pyrimethamine (SP)

In Q3, the malaria task order focused on continuous improvements to processes and coordination that support on-time delivery. GHSC-PSM implemented trainings on commodities, existing and new work instructions, and standard operating procedures to orient new members and re-emphasize good practices for existing members of the GHSC-PSM global supply chain team. The project also strengthened coordination and communication among functional teams in the supply chain. The team executed many process improvement and data quality efforts aimed at improving visibility and supporting management decisions through enhanced reporting quality. GHSC-PSM also conducted several analyses and, based on findings, generated strategies relating to best-value use of the regional distribution centers as well as best-value decision making around freight. The team succeeded in raising on time delivery by 17 percent between last quarter and this quarter and continues to work on improving OTD for malaria commodities.

Strategic Sourcing

GHSC-PSM developed a new sulfadoxine-pyrimethamine + amodiaquine (SPAQ) sourcing strategy that seeks to address the procurement and contracting-related challenges that stem from having a single manufacturer that is deemed to produce a product of reliable and sufficient quality, coupled with increasing demand and seasonal campaign-based use. GHSC-PSM worked with PMI to enable a direct procurement approach, reducing the overall quality assurance (QA) lead time by eliminating the additional wholesaler-specific QA processes and by eliminating the pass-through costs inherent to purchasing through a wholesaler. Through the placement of large inventory orders leveraging the PMI Emergency Loan Fund, GHSC-PSM will have in place the product to meet projected calendar year 2019 demand, contractually reserving highly coveted production capacity and time slots. The product will be staged in a regional distribution center, then distributed incrementally to destination countries prior to their planned seasonal malaria chemoprevention campaigns. This approach will ensure a consistent supply of SPAQ within the requested timelines. We placed the first inventory orders to support this strategy in Q3.

Drug manufacturers are experiencing supply challenges in sourcing the active pharmaceutical ingredient (API) sulfadoxine, which is used in the finished dose formulation SP. As a result, there have been extended lead times for this drug used for intermittent preventive treatment in pregnancy. Also, prices have fluctuated as much as two to five times the typical price. This situation is expected to continue over the next few months. It is unclear when the API issues

will be resolved; however, GHSC-PSM is working with our suppliers to understand the underlying API issues and how they can be addressed.

Quality Assurance Risk Profiles

GHSC-PSM is directly responsible for assuring the quality of the malaria commodities that we deliver.[2] This quarter, with PMI's concurrence, the project launched a new approach to ensuring the quality of the most commonly procured ACTs. This approach entails establishing a risk profile for each manufacturer to help target third-party testing to ensure compliance with internationally recognized quality standards. The GHSC-PSM QA team developed a QA risk profile for each ALu supplier from which we currently procure. The profiles consider risk thresholds and lifecycle management controls to continually assess and mitigate risk.

The new approach will enable GHSC-PSM to provide better value while adequately controlling product risk. It will decrease the percentage of GHSC-PSM-procured ALu batches subject to third-party testing before shipment, which will shorten lead times and reduce costs associated with project QA processes. These savings can in turn enable PMI to further stretch its budget to procure additional treatments or fund additional technical assistance activities for PMI recipient countries.

[2] Quality assurance for other GHSC-PSM-procured commodities is provided by the GHSC-QA contract, which is implemented by FHI 360.

B3. Family Planning and Reproductive Health

In Brief

A total of **15 countries procured family planning/reproductive health (FP/RH) commodities** and **20 countries[3] received systems strengthening** support with FP/RH funding this quarter.

The project and its partners launched the **Global Family Planning Visibility and Analytics Network (Global FP VAN) pilot proje**ct to improve supply chain visibility and procurer collaboration.

Our work addressing core priorities included providing market analysis, tracking contraceptive security, enhancing visibility of FP/RH supplies, and ensuring commodity quality.

Procurement of FP/RH Commodities

FY18 Q3:
- $14 million

Life of Project:
- $72 million

GHSC-PSM has delivered enough contraceptives **to provide 33 million couple years of protection (CYP) over the life of the project.**

The FP/RH task order serves as the primary vehicle through which USAID procures and provides FP/RH commodities for USAID health programs; offers technical assistance to improve supply systems and contraceptive security in partner countries; and provides technical leadership to strengthen global supply, increase financing, and introduce FP commodities. This quarter, GHSC-PSM procured $14 million in FP/RH commodities[4] for 15 countries. The project also worked to strengthen national supply chains and improve contraceptive availability in 20 countries. The countries supported with procurement or technical assistance in FY18 are listed in Exhibit 5 on the following page.

Addressing FP/RH Priorities

GHSC-PSM addressed USAID/Office of Population and Reproductive Health global priorities in three areas: global leadership in FP/RH policy, planning, and advocacy; knowledge management in response to program needs; and support to the field in implementing effective and sustainable FP/RH programs. We provide below examples of our work in these areas.

In April, GHSC-PSM submitted proposed activities and budget for FY19 as part of the Office of FP/RH core fund work planning process. The project proposed 12 new activities along with the continuation of another 12 activities. The Global FP VAN featured prominently in this work plan given the pilot's launch (see below). The notional FY19 activities also included proposals to pilot innovative ideas, including real-time data capture in health facilities through the push of a button and establishing a call center to capture logistics data in South Sudan.

[3] All procurement and delivery figures for the PRH task order include Ebola procurements.

[4] Per USAID guidance, all condom procurements are counted under the HIV/AIDS task order.

Exhibit 5. Countries Receiving Support from GHSC-PSM with FP/RH Funding in FY18

Country	Procure-ment	Technical Assistance	Country	Procure ment	Technical Assistance
AFRICA			**AFRICA (cont.)**		
Angola		✓	Mozambique	✓	✓
Burundi		✓	Nigeria	✓	✓
Cameroon	✓		Rwanda	✓	✓
DR Congo	✓		Senegal	✓	
Ethiopia	✓	✓	Sierra Leone	✓	
Ghana	✓	✓	South Sudan		✓
Guinea	✓	✓	Tanzania	✓	
Kenya ^	✓	✓	Togo	✓	
Liberia	✓	✓	Uganda	✓	✓
Madagascar	✓	✓	Zambia	✓	✓
Malawi	✓	✓			
Mali	✓	✓			
			ASIA		
LATIN AMERICA/CARIBBEAN			Bangladesh	✓	
Guatemala^^		✓	Nepal	✓	✓
Haiti	✓	✓	Pakistan		✓
			Yemen	✓	

^ *GHSC-PSM provides technical assistance in Kenya under a unique task order (Task Order 5) overseen by USAID/Kenya.*
^^ *FP/RH funding to Guatemala was put on hold in April 2018.*

Enhancing Visibility of Data on Family Planning Supplies

Throughout Q3, GHSC-PSM contributed extensively to the development of the Global Family Planning Visibility and Analytics Network (FP VAN). This network is the reproductive health community's highly ambitious undertaking to increase supply chain visibility and improve collaboration across major procurers of contraceptives for global health programs. This quarter, work took a major step forward with the launch of the Global FP VAN pilot (see box). To kick things off, in June, the project participated in a design workshop led by the Reproductive Health Supplies Coalition's (RHSC's) software vendor, E2OPEN. The workshop's objective was to discuss and decide on the software solution's design, including determining and integrating the data flows, analytics, and reports needed throughout the supply chain. As a future super-user of the platform, GHSC-PSM helped share and review current processes and provided valuable input on ways to improve procurement data collection, visibility, and usability. These discussions, along with the development of the technical specifications that will define the overall functioning of the VAN, have continued since the workshop with the goal of finalizing the proposed solution in August.

Piloting the Global FP VAN

This quarter, the RHSC and collaborative partners, including GHSC-PSM, launched the Global FP VAN pilot, which includes two countries (Malawi and Nigeria), two product families (implants and oral contraceptive pills), four manufacturers, and current supply chain players.

Tracking Contraceptive Security

GHSC-PSM manages the Contraceptive Security Indicators and Index to help program managers, advocates, and decision-makers track country progress toward contraceptive security. In Q3, the project finalized data validation and analysis of the 2017–18 survey in 36 countries and began developing the final report and the interactive Contraceptive Security dashboard that will be housed on the GHSC website. These deliverables will be finalized in Q4.

Collaborating with Global Stakeholders

In Q3, the project continued to build global partners' awareness of and support for the U.S. government's FP/RH priorities and programs, and to support USAID's leadership in FP/RH commodity availability.

In April, GHSC-PSM staff attended a workshop on *Data for Family Planning Advocacy*. The workshop's content inspired the project to launch a webinar series through the RHSC Systems Strengthening Working Group (SSWG) on supply chain data for FP advocacy. For the first webinar, which was held in June, GHSC-PSM moderated a panel of speakers and introduced the theme, "data is a dialogue." Upcoming webinars will delve into product availability data captured by Track20 and others in specific countries. Track20 promotes use of service statistics to track progress in achieving the global FP2020 initiative's goal, which is to increase the number of modern-method users by 120 million women and girls between 2012 and 2020 in 69 low- and middle-income countries.

In May, GHSC-PSM presented on a RHSC virtual panel titled *Reproductive Health Supplies in Humanitarian Settings: What Can We Learn from 10+ Years of Global Coordination for Routine FP Supplies?* (see box). Given the topic's popularity and interest, the SSWG will make it an area of focus. Also, as chair of the RHSC SSWG, the project supported the RHSC's Innovation Fund by reviewing nine concept notes submitted for funding and leading discussions with members to select two concepts to move forward to the proposal development stage.

Meeting an Information Need

GHSC-PSM's virtual panel on lessons learned from providing FP supplies in humanitarian settings struck a real chord — more than 100 people attended the webinar with more watching live on YouTube.

The FY17 Contraceptives and Condoms Report

GHSC-PSM supported the development of the *Contraceptives and Condoms (C&C) Report,* presenting detailed contraceptive and condom shipment data gathered in FY17 for family planning programs. This was the first time that the project developed this major source of information on FP/RH commodities, which has been produced by USAID since FY08. The report presents and analyzes data on C&C shipments worldwide, by USAID regions, and by commodity types. The FY17 report also includes legacy details on the value and quantity of shipments from FY15 to FY17.

Collaborating Globally to Avert Stockouts and Expiries

In Q3, GHSC-PSM processed data from 61 reports from 48 country programs for the PPMR. Based on the information in the report, the PPMR team worked with the Coordinated Assistance for Reproductive Health Supplies (CARhs) group to:

- Expedite nine shipments to Burundi, Chad, and Madagascar to prevent stockouts of emergency contraceptives, male and female condoms, contraceptive implants, and three-month injectables.
- Facilitate a transfer of Microgynon ED Fe from Benin to Mali to prevent a potential stockout

Using data from the PPMR, donors responded to 18 information requests and provided countries with valuable information on upcoming shipments and other commodity-related procedures.

Commodity Procurement

In this section, we summarize GHSC-PSM activities in procuring FP/RH commodities this quarter.

Commodities Procured for FP/RH Programs

- Consumable kits for implants
- Contraceptive implants
- Cyclebeads®
- Injectables
- Intrauterine devices
- Oral contraceptive pills

Expanding the Supplier Base and Delivering Cost Savings

The project initiated negotiation of indefinite delivery, indefinite quantity contracts (IDIQs) for the supply of contraceptive implants and negotiated and executed two IDIQs for the supply of intrauterine devices. These contracts are expanding the supplier base, increasing supply security, and will deliver cost savings.

Collaborating to Address Scarce Supply

GHSC-PSM attended the Coordinated Supply Planning (CSP) meeting in April in Denmark. The in-person meeting, located at the United Nations Population Fund (UNFPA) Commodity Security Branch office in Copenhagen, included participation by the following organizations: USAID's Commodity Security and Logistics Division, UNFPA Procurement and Supply Branch, John Snow International, Clinton Health Access Initiative (CHAI), the Bill & Melinda Gates Foundation, and RHSC. Representatives from several pharmaceutical and contraceptive manufacturers also joined the meeting. They included Bayer, Dahua/DKT, Merck, and Pfizer. The group met to ensure CSP's work is supporting UNFPA and USAID priorities for 2018 and beyond. This year's meeting focused on implants and injectables, which are experiencing ongoing tight supply due to production constraints and growing demand and included an in-depth review of orders of one-rod implant and three-month intramuscular injectable. Managing these production constraints requires true global collaboration between the major procurers to prioritize and allocate supply of products. This in-depth collaboration with the CSP group, associated with a close monitoring of country orders, stocks, and consumption levels, has enabled GHSC-PSM to maximize the allocation of these commodities to avoid stockouts in countries. GHSC-PSM continues to closely monitor product availability and provides external weekly updates and snapshots highlighting prioritizations and allocations.

Emergency Order for Yemen

At USAID's request, GHSC-PSM is working to fill an emergency order of FP/RH commodities for Yemen worth close to $1.7 million. The project is rapidly designing a supply and shipping plan in coordination with USAID and its in-country implementing partner despite the ongoing conflict in Yemen. The project secured and packed a supply of readily available health commodities from our regional distribution center and undertook new procurements for emergency contraceptives and consumable kits for implants. This cargo is ready to ship as soon as USAID and the implementing partner provide approval.

Delivering Cost Savings for Three-Month Injectables
As a result of tiered pricing negotiated under a strategic long-term agreement (LTA) with a contraceptive injectable supplier, GHSC-PSM delivered $200,000 in cost savings to USAID missions on the procurement of three-month contraceptive injectables.

Saving with Strategic LTA

In a challenging supply market and environment, GHSC-PSM negotiated an innovative tiered pricing structure with a key supplier of contraceptive injectables, saving USAID missions $200,000, with the potential for additional savings in FY19.

Sourcing

This quarter, GHSC-PSM made significant progress in sourcing FP/RH commodities, summarized below.

Evaluating Proposals and Negotiating New IDIQs for Contraceptive Implants
GHSC-PSM evaluated proposals for contraceptive implants that were submitted in response to our Request for Quotations. The project started negotiating with three suppliers of one- and two-rod implants. Forthcoming IDIQs are expected to increase supply security, support market health, and save money.

Negotiating and Executing New IDIQs for Intrauterine Devices (IUDs)
The project evaluated proposals and negotiated two new IDIQs for the supply of IUDs. Under the new IDIQs, a new IUD supplier will be onboarded. The new contracts will generate an average cost savings of approximately 32 percent per unit for USAID.

IUD Cost Savings

Two new IUD supply contracts will save USAID on average approximately 32 percent per unit

Supplier Onboarding
Following the issuance of the above mentioned IDIQs, GHSC-PSM created an onboarding deck for all new and existing suppliers of FP/RH commodities. This tool describes in detail the project's global supply chain processes, including order placement, payment, and order pick-up procedures. In addition to the written material shared with suppliers, GHSC-PSM contacted suppliers to discuss the information and respond to operational questions. The tool familiarizes the suppliers with GHSC-PSM procedures and expectations, which reduces the risk of delays, improves the level of service, and, more generally, helps build long-term relationships with the suppliers.

Country Support

Below, we illustrate the technical assistance that GHSC-PSM provided to strengthen in-country supply chains for FP/RH commodities this reporting period.

Contraceptive Needs Quantified
In Nepal, GHSC-PSM developed a guidebook on quantification of health commodities. The guidebook details forecasting and quantification guidelines for family planning, MNCH, tuberculosis, and HIV/AIDS commodities, vaccines, and essential medicines. The guidebook will be translated into Nepali and disseminated to all Ministry of Health and Population program divisions and to provincial and local governments for use during quantification exercises for these commodities. Under the new decentralized political structure in Nepal, staff in 753 new local government units now are responsible for most of the procurement of health commodities for their areas. This guidebook will help them understand the quantification process.

In Pakistan, Use of Digital Data to Strengthen FP Program Performance

Counseling a family on contraceptive options in Pakistan. *Photo credit: GHSC-PSM*

In Balochistan, GHSC-PSM helped the provincial Population Welfare Department (PWD) assess the root cause of stockouts for FP products at subdistrict levels through a series of consultations with relevant stakeholders. High infant and maternal mortality rates in the province, mainly attributable to nonadherence to proper birth spacing practices, is an ongoing concern for the government. Unavailability of FP products at the last mile, despite sufficient stock at the central level, has been a major hurdle in increasing use of modern contraceptive methods. Through the assessment, the project identified a lack of data visibility around stocks at various levels as the major hindrance to timely requisition and replenishments of FP products at facilities and for community health workers.

To address this, GHSC-PSM trained 19 PWD and Department of Health staff to serve as master trainers on data analytics and use of FP data on an executive dashboard. The health department will use the master trainers to roll out trainings and build similar capacity at district and lower levels. In addition, to overcome Internet connectivity problems in the province's remote areas that hinder timely facility reporting, the project is working with PWD Balochistan to install unstructured supplementary data service (USSD) capability on field worker phones. USSD allows someone with a mobile phone to text information to an application program in a network even in the absence of smartphones and Internet connectivity. USSD installation is being piloted initially in five districts and will be scaled up throughout the province in phases. With the project's advocacy, the health department has set aside funds for this activity to ensure sustainability. Data visibility and use of data for strengthening supply chain processes around FP products will help ensure sufficient stock at the last mile.

B4. Maternal, Newborn, and Child Health

In Brief

GHSC-PSM **supported MNCH in 18 countries**.

This quarter, we procured **$2.9 million in MNCH commodities**.

GHSC-PSM continued to support **appropriate management of oxytocin at the global level and in Ghana**.

Procurement of MNCH Commodities

FY18 Q3:
- $2.9 million

Life of Project:
- $4.2 million

GHSC-PSM worked on **innovations to safeguard the quality** of MNCH commodities.

GHSC-PSM continued to work **to increase availability of data** on MNCH commodities.

Under the task order for maternal, newborn, and child health, GHSC-PSM works to help end preventable child and maternal deaths by increasing access to quality-assured medicines and supplies for MNCH. In collaboration with USAID, the project provides global technical leadership on MNCH commodities and ensures that supply chain management considerations are included in global dialogue and initiatives. GHSC-PSM focused on three key areas during this reporting period: commodity quality, data availability, and coordination with other MNCH partners.

GHSC-PSM supports MNCH programs in 18 countries, as shown in Exhibit 6 on the next page.

Exhibit 6. Countries Receiving Support from GHSC-PSM with MNCH Funding in FY18

Country	Procure-ment	Technical Assistance	Country	Procure-ment	Technical Assistance
AFRICA			**ASIA**		
Dem. Rep. of Congo	✓		Bangladesh	✓	
Ethiopia		✓	Nepal		✓
Ghana		✓	Pakistan		✓
Guinea		✓			
Kenya^		✓	**LATIN AMERICA/CARIBBEAN**		
Liberia		✓	Guatemala		✓
Madagascar	✓	✓	Haiti	✓	
Malawi		✓			
Mali	✓	✓			
Mozambique	✓	✓			
Nigeria	✓	✓			
Rwanda	✓	✓			
Zambia	✓	✓			

^GHSC-PSM provides technical assistance in Kenya under a unique task order (TO5) overseen by USAID/Kenya.

Ensuring the Availability of High-Quality MNCH Commodities

Ensuring Appropriate Management of Oxytocin

GHSC-PSM continued to work to increase appropriate management of oxytocin this quarter. Oxytocin is the WHO-recommended first-line medicine for prevention and treatment of postpartum hemorrhage, a leading cause of maternal mortality.

While oxytocin is widely available in most countries, it is heat sensitive and degrades when exposed to temperatures above 25°C for extended periods of time. GHSC-PSM shared key information and disseminated the new messaging framework about management of oxytocin with partners at the annual meeting of the Postpartum Hemorrhage Community of Practice in June.

Supporting Quality Oxytocin in Ghana

GHSC-PSM also supported the Ghana Health Service Family Health Division in its May launch of a broad strategy to ensure the quality of oxytocin throughout Ghana's health supply chain, building on previous work carried out by PATH and the Family Health Division. During the launch, stakeholders:

- Reviewed the state of oxytocin quality and quality initiatives in Ghana by sharing information from key quality and implementation research studies in Ghana.
- Identified key barriers to increasing access to high-quality oxytocin throughout the health supply chain, i.e., from the point of manufacture, through storage and distribution channels, to the point of use at SDPs.
- Generated short-, medium-, and long-term action for key government and implementing partners.

More than 20 participants from the Ghana Health Service, United Nations Children's Fund (UNICEF), UNFPA, and implementing partners participated in the strategy session. At the session, GHSC-PSM shared findings from a recent desk review report entitled *Streamlining the Supply Chain for Quality Oxytocin in Ghana* and led a prioritization exercise to develop a concrete action plan for partner organizations. Key next steps and priority activities include using the existing national Postpartum Hemorrhage Technical Working Group in Ghana to:

- Promote quality-centered procurement practices at all levels of the health system
- Improve storage and distribution practices to ensure that oxytocin is stored between 2° C and 8° C at all points within the supply chain
- Explore potential options for integrating time temperature indicators into oxytocin packaging
- Improve regulatory functions to safeguard oxytocin quality

Next quarter, GHSC-PSM will support the Family Health Division in coordinating and planning these activities.

Supporting the WHO Prequalification Programme's Collaborative Registration Process

The WHO Prequalification of Medicines Programme (WHO/PQP) was originally established to increase the supply of quality-assured medicines for HIV/AIDS, malaria, and tuberculosis, and commodities for family planning. In the last decade, the program has also prequalified four

MNCH products—oxytocin, misoprostol, magnesium sulfate, and zinc—from nine manufacturers. To facilitate access to these prequalified products in countries where they are most needed, the WHO/PQP supports a collaborative registration process (CRP) whereby WHO has a memorandum of understanding in place with 28 countries to facilitate and accelerate national registration of WHO-prequalified products. However, even with these memoranda in place, many of these products are not registered in USAID's 25 MNCH priority countries.

To understand key barriers and potential opportunities related to increasing CRP use for MNCH products, GHSC-PSM surveyed suppliers of WHO-prequalified MNCH products to ask about their target markets, experiences with country registration and WHO CRP processes, and perspectives on potential solutions for increasing the use of the WHO CRP for MNCH products. Several key themes emerged from responses, including difficulty with cumbersome, varying, and expensive registration processes; challenges in identifying reputable local agents; limited market data to support suppliers' return on investment in country registrations; and the limited scope of the WHO CRP in some countries. The project is working closely with USAID and other partners that provide technical assistance to national medicines regulatory authorities globally to disseminate these supplier insights and to identify concrete opportunities to strengthen use of the WHO CRP for MNCH products.

Priority MNCH Products

- Amoxicillin dispersible tablets
- Chlorhexidine
- Gentamicin
- Magnesium sulphate
- Neonatal resuscitation equipment
- Oral rehydration salts
- Oxytocin
- Zinc

Providing Quality-Centered Procurement Guidance

To support global efforts to increase the supply of quality-assured MNCH commodities, GHSC-PSM commissioned Concept Foundation—an organization that specializes in MNCH quality issues—to develop a technical guidance document on how to procure quality-assured MNCH commodities for procurement agents at national and subnational levels. In most countries, MNCH commodities are procured by the government, sometimes at the subnational level and often by procurement agents who are not specialists in the commodities. This document will provide guidance for these procurement agents to help them ensure the quality of the medicines they procure. In Q3, GHSC-PSM received the Concept Foundation's final draft of the guidance document, which contains general information about quality assurance as well as information specific to key MNCH products. GHSC-PSM is developing a dissemination strategy and plans to distribute the guidance document at global and national levels.

Guidance for Local Manufacturers on Global Standards

To lay the groundwork for global standards implementation at local levels, with MNCH funding, GHSC-PSM developed a guidebook on global standards for local manufacturers. Adoption of global standards has become a foundational piece of GHSC-PSM's efforts to reduce costs, enhance efficiencies, and improve the availability of health commodities worldwide. Furthermore, there is ongoing global promotion of global standards for pharmaceutical traceability that goes beyond GHSC-PSM. Multinational manufacturers are preparing to implement global standards on pharmaceutical labeling, but local manufacturers may lack the human resources, processes, technology, and other resources to meet these requirements. As

many MNCH products are produced locally, manufacturers of MNCH products are at risk of being left behind.

To address this issue, GHSC-PSM developed guidance for policymakers and local manufacturers as they consider implementing global standards at the country level. In Q3, the project concluded primary research at GS1 conferences in Bogota, Colombia, and Addis Ababa, Ethiopia, and interviewed local manufacturing and GS1 representatives. Findings informed a guidance document that, among other things, outlines levers that national governments might use to help local manufacturers adopt global standards through supportive financing models and incentives. Once completed, the guidance document will be shared with all key stakeholder groups, including national regulatory bodies and GHSC-PSM field offices where global standards are already being implemented.

GHSC-PSM's MNCH program provides lifesaving health commodities to children all over the globe like these boys in Ethiopia. *Photo credit: GHSC-PSM*

Monitoring Ambient Temperatures Throughout the Health Supply Chain

In a collaborative effort between the HIV/AIDS and MNCH task orders, GHSC-PSM piloted ambient temperature monitoring at various points in the health supply chain in Mozambique using low-cost sensors and cloud technology. Many health commodities, including oxytocin and ergometrine, are sensitive to heat and humidity — both of which impact a commodity's shelf life and ability to save a patient's life. However, in low-resource settings, temperature and humidity monitoring of ambient products during in-country transport, at storage in facilities, and throughout last-mile distribution (LMD) through community health workers is scarce, if implemented at all. This leaves patients at risk of receiving medicines that are not clinically effective.

During Q3, GHSC-PSM completed the second phase of the temperature monitoring activity, which included installation of additional sensors in: central, provincial, and district warehouses; hospitals and clinic storerooms; trucks and vehicles; and bags that community health workers use to carry medicines to patients. Following installation, four trucks also were painted white to test the impact of the white paint on internal truck temperatures. Also, GHSC-PSM started initial work to monitor ambient temperatures of international shipments.

Key insights from the activity will be shared at the Health and Humanitarian Logistics Conference in Dubai in July 2018. In FY19, the project will analyze data from these monitors and document and disseminate results and recommendations.

Improving Availability of Data on MNCH Commodities

Leveraging data initiatives under the malaria task order, the MNCH task order continues to improve the availability of MNCH commodity data through the revision and rollout of an updated and improved version of the EUV survey. In the past, the EUV survey was used exclusively to help assess malaria commodity stock status and malaria case management practices. However, across low-resource settings, the availability of data on MNCH commodities is limited largely due to local, and often decentralized, procurement of MNCH commodities and the fact that data on these commodities often are not included in the country's LMIS. The new EUV allows countries to include MNCH commodities in the survey. The new EUV also uses an improved sampling strategy that will increase the representativeness of the data collected.

In Q3, GHSC-PSM piloted the new EUV in Ghana and Zambia. The pilots used the updated questionnaire, the MNCH modules, and improved sampling strategies. GHSC-PSM offices in Ghana and Zambia trained two cohorts of data collectors — principally drawn from local ministries of health — on the revised questionnaire. GHSC-PSM is analyzing data from the pilots and will submit findings to USAID in Q4. Also, in Q4, we will develop plans for rollout of the new EUV, create comprehensive data collector training materials, and translate these tools into French.

B5. Other Emerging Health Threats

In Brief

The project **procured $4.9 million in mosquito repellent** for pregnant women to use to prevent Zika.

GHSC-PSM supported **commodity procurement and distribution to antenatal care facilities** to ensure that pregnant women have access to the Zika prevention commodities.

Commodities Procured for Zika Prevention

- Condoms
- Mosquito repellent (DEET-based)

GHSC-PSM is working to build resilient supply chains that are equipped to face the challenge of emerging public health threats when they arise. Specifically, in Q3, GHSC-PSM supported countries dealing with Zika.

Supporting the Zika Response

GHSC-PSM is helping countries address Zika, a virus spread sexually and by mosquitoes, that can cause severe birth defects including microcephaly and Congenital Zika Syndrome. Thus far, the project has procured condoms and ordered mosquito repellent for distribution to antenatal care facilities in Central America and the Caribbean.

GHSC-PSM processed orders for more than 1.1 million units of DEET repellent through a U.S. Environmental Protection Agency-approved supplier. GHSC-PSM is shipping this repellent to ministries of health in the Dominican Republic, El Salvador, Haiti, Honduras, and Jamaica. The repellent then will be distributed to antenatal care clinics and provided to pregnant women. During Q3, GHSC-PSM continued to coordinate closely with government ministries, USAID missions, and other USAID implementing partners to manage the importation, storage, and in-country transport of this commodity.

In June, GHSC-PSM met with the repellent manufacturer and freight forwarder in Miami, Florida, to gain visibility into the production, bottling, and packaging processes for repellent, and to plan the logistics for shipping these commodities.

SECTION C

PROGRESS BY OBJECTIVE

C1. Global Commodity Procurement and Logistics

In Brief

GHSC-PSM delivered 1,535 line-item orders this quarter, with a value of **$194 million**. This reflects an approximate 2 percent increase in the number of line-item orders delivered and a 9 percent increase in the value of commodities delivered over FY18 Q2.

On average, GHSC-PSM **delivered a line item every 1.4 hours** this quarter.

73 percent of line items were delivered on time, based on the defined on-time window (within the period 14 days before or seven days after the agreed delivery date).

The Global Supply Chain At a Glance

- 58 countries served
- 4,219 products in the catalog provided by 258 suppliers
- Five international freight forwarders responsible for 2,746 shipping lanes
- Three regional distribution centers with inventory for rapid response to orders

The project **procured $199 million** in health commodities. Procurement values have reached **$1.35 billion for total life of project**.

The project continues to leverage the data from our Automated Requisition Tracking Management Information System (ARTMIS). This quarter, GHSC-PSM further enhanced our on-time delivery (OTD) dashboard to improve management of orders in progress and introduced an OTD analysis tool to target root causes of completed orders that were late to **improve future OTD rates and cycle time**.

C1a. Global Supply Chain: Focused on Safe, Reliable, Continuous Supply

GHSC-PSM's procurement strategy seeks to continuously identify opportunities to pursue three main objectives:

- Reduce response/cycle times, lead times, and transaction costs
- Increase on-time deliveries
- Balance price, delivery, and quality (i.e., achieve best value)

In Q3 we built on Q2 successes by focusing on the following initiatives.

Ensuring Supply Timeliness and Velocity

Awarding Logistics Contracts

In Q3, GHSC-PSM awarded contracts for freight forwarding to five third-party logistics (3PL) service providers. The new contracts establish performance standards and key performance indicators (KPIs) aligned with GHSC-PSM program goals including OTD, electronic data

interchange, estimated time of arrival, delivery accuracy/reliability, and transit times. The project onboarded all five providers and established monthly performance reviews. These reviews focus on the KPIs, root cause analysis of any poor performance, and joint development of solutions to continually improve service levels. The project also holds weekly reviews with the 3PLs to focus on the accuracy and timeliness of data exchange between the project and the 3PL. These reviews identify issues of data quality that affect visibility across all phases of a shipment.

Managing Supplier Relationships to Improve OTD Performance

While GHSC-PSM often is able to catch up and deliver the goods on time, supplier lateness is often the single most important contributor to our own lateness. Suppliers were late in making their goods available to GHSC-PSM for 9% of all deliveries in Q3. Recognizing this pattern, in May, GHSC-PSM implemented an accelerated supplier relationship management program that drove supplier lateness down from 11% in April to 5.1% in June. This included:

- **Supply base segmentation.** GHSC-PSM segmented suppliers into four levels based on value and risk. This segmentation will help the project prioritize efforts to address supplier on-time performance.
- **Supplier relationship management governance model.** The project established cross-functional teams to identify issues with suppliers and assigned an executive sponsor to deal with key suppliers for each task order.
- **On-time performance scorecards.** The project enhanced our information system to capture both the date the supplier committed to making the goods available and the date the supplier actually made the goods available. This allows us to systematically review suppliers' on-time performance.
- **Supplier review process.** GHSC-PSM continues to conduct regular, systematic supplier reviews, now including detailed review of supplier on-time performance.

Streamlining Processes for Several Countries That Have Long Waiver Times

The length, and, importantly, the variability, of the time it takes to process duty waivers continues to be a challenge in some countries. GHSC-PSM is therefore pursuing several initiatives to shorten cycle time and improve OTD. This includes using blanket waivers and/or taking delivery of commodities in advance of completing customs clearance formalities, which are then performed retrospectively.

As an example, in Q3, GHSC-PSM developed a new order fulfillment strategy for Mozambique-bound shipments to address the long duty waiver wait time and the resulting delays in picking up product from suppliers while waiting to receive waivers. The new strategy involves routing these shipments through the regional distribution center (RDC) in South Africa. With this approach, the project initiates documentation to request the duty waiver and to schedule the pre-inspection (to take place in South Africa) while the shipment is in transit. The new process is expected to reduce overall lead time for shipments into Mozambique.

Adopting a Risk Management Approach to Quality Assurance for Malaria Products

In Q3, PMI approved GHSC-PSM's recommendation to adopt a risk management approach for managing quality assurance for three critical ACTs. GHSC-PSM will establish risk profiles for these medicines that will decrease the percentage of GHSC-PSM-procured batches that are subject to third-party testing. Our recommendation describes the theory behind the risk-based approach, scope of implementation, inputs, outputs, and process for monitoring the risk profiles.

The profiles will consider risk thresholds and lifecycle management controls to continually assess and mitigate risk, while maintaining adequate third-party verification to ensure compliance with internationally recognized quality standards. This approach will enable GHSC-PSM QA to provide better value for money by adequately controlling product risk while shortening lead times and reducing costs associated with GHSC-PSM QA processes.

Improving Performance in Delivering Malaria Commodities

In Q3, GHSC-PSM succeeded in improving on-time delivery of malaria commodities by 17 percentage points to 63 percent, compared to Q2 performance of 46 percent. While OTD rates had improved for other commodities in previous quarters, they were lagging for malaria commodities. The project improved OTD for malaria commodities through continuous improvement initiatives that addressed processes and better coordination, focusing on staff trainings on commodities, existing and new work instructions, and standard operating procedures.

GHSC-PSM worked closely with PMI to develop and continues to pursue several strategic initiatives designed to achieve supply chain efficiencies and overall best value for the malaria program. These include:

- Advance purchases of SPAQ to hedge against persistent supply chain and market challenges and ensure timely access to this critical antimalarial product
- Development of an order placement strategy to support supply chain efficiencies and long-term market health
- Negotiation of new, strategic IDIQs with six malaria RDT manufacturers
- Better use of RDCs and freight
- Enhanced reporting to better support management decisions
- Data quality efforts aimed at improving visibility

Providing Better Visibility into Data and Use of Data

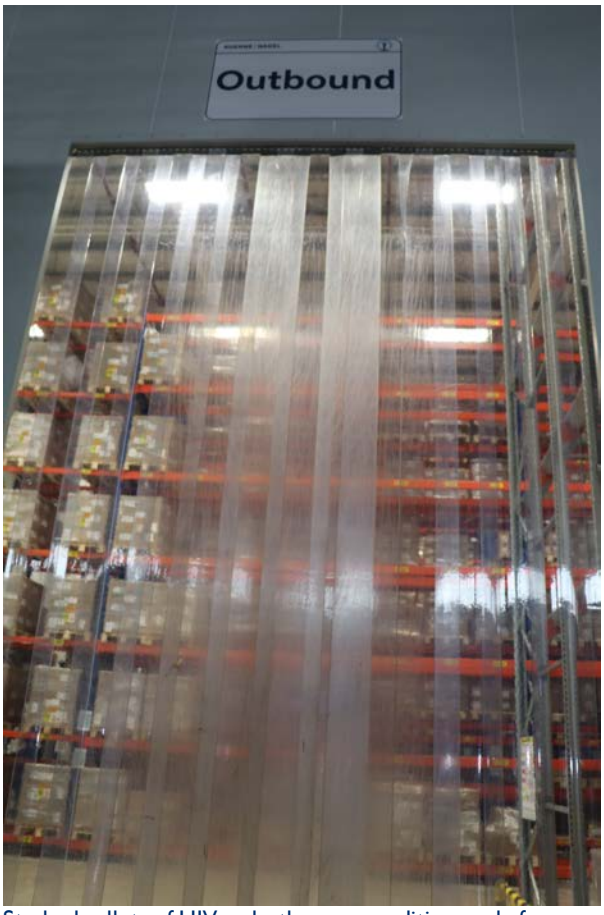
GHSC-PSM's global supply chain continues to benefit from the accuracy, efficiency, and analytics offered by our information system, ARTMIS. In Q3, the project enhanced the OTD dashboard to include more specificity, such as the precise status of waivers, and updated the order promise tool to reflect recent experience with each step of the procurement and logistics process. GHSC-PSM also introduced a new tool to compare the original time we predicted each step of an order would take and the actual time each step took.. This tool generates precise analytics on each variance, both at the aggregate level and filtered by criteria such as time period, commodity group, product type, task order, and country. This tool helps staff hone in on the

Barcoding on health commodities to facilitate tracking and tracing. *Photo credit: GHSC-PSM*

segments that are problematic, enabling a targeted root cause analysis that leads to optimal process improvements.

Gaining More Health Through Strategic Sourcing

Commodity Councils are strategic governance bodies that coordinate the cross-functional development and implementation of sourcing strategies aimed at achieving best value, increasing supply chain efficiencies, and supporting market health within specific product portfolios. GHSC-PSM Commodity Councils' detailed analyses of key health commodity markets and innovative commodity sourcing strategies are aimed at obtaining the best value for the clients and countries that we serve, improving cycle times, and supporting OTD. Part of our efforts have focused on increasing the share of total procurement managed under long-term agreements (whereby GHSC-PSM has an ongoing contract with fixed pricing and agreed-upon terms with a supplier), where appropriate, and reducing use of more labor and time-intensive one-off contracting. Agreements are tailored to address specific supply chain and market challenges inherent to the commodity category.



Stacked pallets of HIV and other commodities ready for shipment from the Dubai RDC. *Photo credit: Carolyn Pryor, GHSC-PSM*

Highlights of GHSC-PSM strategic sourcing achievements in Q3, by commodity category, include:

HIV/AIDS Pharmaceuticals
GHSC-PSM continued the strong collaboration with USAID to support PEPFAR's directive to aggressively shift to TLD while minimizing waste of existing or legacy ARVs. Staff worked to manage the supply of TLD by proactively ordering from suppliers to maximize the current market capacity. This risk mitigation strategy was made possible thanks to USAID's bold leadership and intelligent use of the RDCs. The market changed rapidly this past quarter with supply constraints and demand fluctuation causing countries to re-evaluate their TLD transition plans. GHSC-PSM continues to work closely with USAID and countries to ensure availability of TLD and other ARVs.

Also, GHSC-PSM is finalizing new IDIQ contracts to support firm-fixed pricing for ARVs that will streamline the ordering process.

Laboratory Equipment and Supplies for HIV Testing
GHSC-PSM defined requirements and released a solicitation for a strategic contract with wholesalers covering 823 standard laboratory catalog items. This effort is expected to streamline the ordering process and reduce time for the goods to reach patients.

For VL and EID sourcing, GHSC-PSM is pursuing reagent rental, under which reagents, consumables, equipment placement, and equipment service are sourced through an "all-inclusive" contract. The project has been collecting and analyzing critical business intelligence on price per test by country, instrument mapping by country, and demand and supply data to inform strategic sourcing plans. Staff have worked with beneficiary countries and global partners to refine these plans, identify synergies across organizations, and incorporate local inputs such as country network optimization. GHSC-PSM applied such a cohesive approach in our recent VL and EID RFPs in Haiti, Nigeria, and Zambia, enabling the project to deliver more value to patients through an all-inclusive service package and price.

Furthermore, GHSC-PSM has worked to improve global market health for viral load. In June, the project entered a global long-term agreement with a major molecular technology manufacturer, enabling fast adoption of innovative technology and best value through an all-inclusive price. The project is also working with major global health partners to harmonize key performance indicators and terms and conditions for service-level agreements. GHSC-PSM provided strategic and analytic support to USAID and the Office of the U.S. Global AIDS Coordinator and Health Diplomacy for their response to a supplier's instrument protocol change, including global and country-level information to inform cost negotiations.

In addition to strategic planning and major sourcing initiatives, GHSC-PSM closely tracks price per test on routine commodity bundle procurement. Between January and June, GHSC-PSM negotiated and reduced VL/EID price per test on routine orders in three countries. The accumulated savings is more than $620,000.

VMMC Kits
GHSC-PSM issued new contracts for VMMC kits and rationalized the supplier base. The new contracts include tiered fixed pricing (whereby we obtain different pricing based on volume) as well as vendor-managed inventory, where having the vendor manage kit inventory for the project would be advantageous. We expect a healthier market as the project executes the sourcing strategy that enables more competition and improved vendor performance. Further, the project expects to deliver $1.2 million in cost savings in VMMC kits over one year.

Male Condoms and Lubricants
Following the execution of a new round of IDIQs for male condoms and lubricants, GHSC-PSM initiated implementation of vendor-managed inventory (VMI) for plain male condoms. In Q3, the first VMI No Logo male condom stock was produced and made available by our VMI service provider and the first order was fulfilled from stock. The VMI solution strategically leverages supplier warehousing capacity, delivering cost efficiencies by reducing transport and warehousing costs associated with maintaining stock at project RDCs.

Essential Medicines
For the essential medicines portfolio, the project defined requirements and released a solicitation for a strategic contract that covers 219 standard essential medicines catalog items. Challenges in essential medicines procurement include the number of products, unreliability of

the supplier base, and large volume, low-value orders. The new contracts will cover a consolidated list of the most critical essential medicines. They will include fixed pricing, eliminating the need to negotiate prices for each order. Having a consolidated product list with fixed prices will enable GHSC-PSM to streamline the procurement process, reduce cycle time, and mitigate supplier delays.

Malaria Rapid Diagnostic Tests
In Q3, GHSC-PSM continued final negotiations of strategic long-term agreements with malaria RDT suppliers. Several of the contracts have already been signed; the rest should be signed in Q4. These contracts, coupled with a strategic order allocation methodology, are designed to support sustainable pricing, supply diversity, and long-term market health.

Malaria Pharma
GHSC-PSM developed a new sulfadoxine-pyrimethamine + amodiaquine (SPAQ) sourcing strategy that seeks to address the procurement and contracting-related challenges that stem from having a single manufacturer that is deemed to produce a product of reliable and sufficient quality, coupled with increasing demand and seasonal campaign-based use. GHSC-PSM worked with PMI to enable a direct procurement approach, eliminating pass-through costs inherent to purchasing through a wholesaler and, while retaining project QA, eliminating the wholesaler's QA and extra time associated with that. Through the placement of large inventory orders leveraging the PMI Emergency Loan Fund, GHSC-PSM contractually reserved highly coveted production capacity and time slots. The product will be staged in a regional distribution center, then distributed incrementally to destination countries prior to their planned seasonal malaria chemoprevention campaigns. This approach will ensure a consistent supply of SPAQ within the requested timelines.

Contraceptive Implants
GHSC-PSM evaluated proposals for the supply of contraceptive implants and began negotiations with three suppliers of one- and two-rod implants. The eventual contracts are expected to increase supply security, support market health, and deliver cost savings.

Injectable Contraceptives
As a result of tiered pricing negotiated under a strategic long-term agreement with a contraceptive injectable supplier, GHSC-PSM delivered $200,000 in cost savings to USAID missions on procurement to date of three-month contraceptive injectables.

Intrauterine Devices
The project evaluated proposals and negotiated two new IDIQs for the supply of IUDs that will result in the onboarding of a new IUD supplier and cost savings of about 32 percent per unit for USAID.

C1b. Project Performance

In this section, we summarize findings on key indicators of global supply chain performance. Additional detail on these and other indicators is provided in Annex A. The text box on the following page demonstrates how delivery performance has improved as values and volumes of deliveries have grown over the last year.

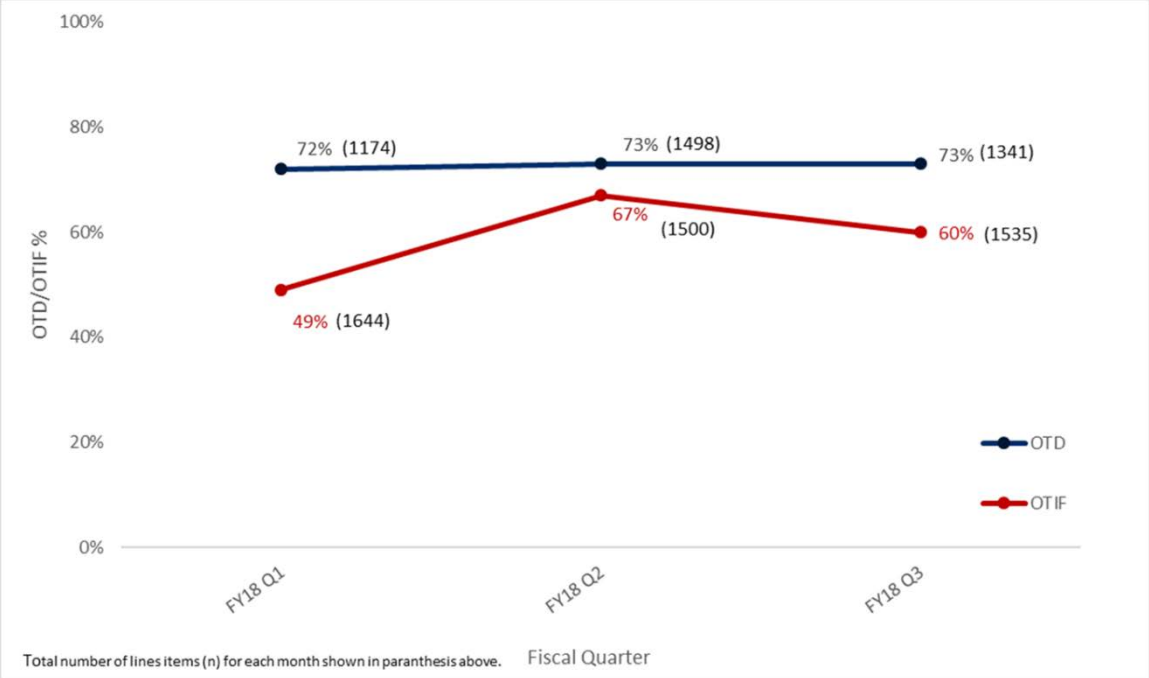
In Q3, GHSC-PSM continued to drive efficiencies in global supply chain processes, while sustaining our OTD performance. In Q3, the project averaged 73 percent OTD, reduced the backlog to 3 percent of annual volume, and maintained a large volume of deliveries. GHSC-PSM procured $199 million in commodities and had 1,341 delivery commitments this quarter.

Timeliness of Delivery

GHSC-PSM measures on-time delivery in two ways.

- On-Time Delivery (OTD) – the number of on-time deliveries as a percentage of expected deliveries in that period.
- On-Time In-Full Delivery (OTIF) – the number of deliveries that are delivered on time and in full as a percentage of actual deliveries in that period.

Exhibit 7. OTD and OTIF in FY18 (year to date)



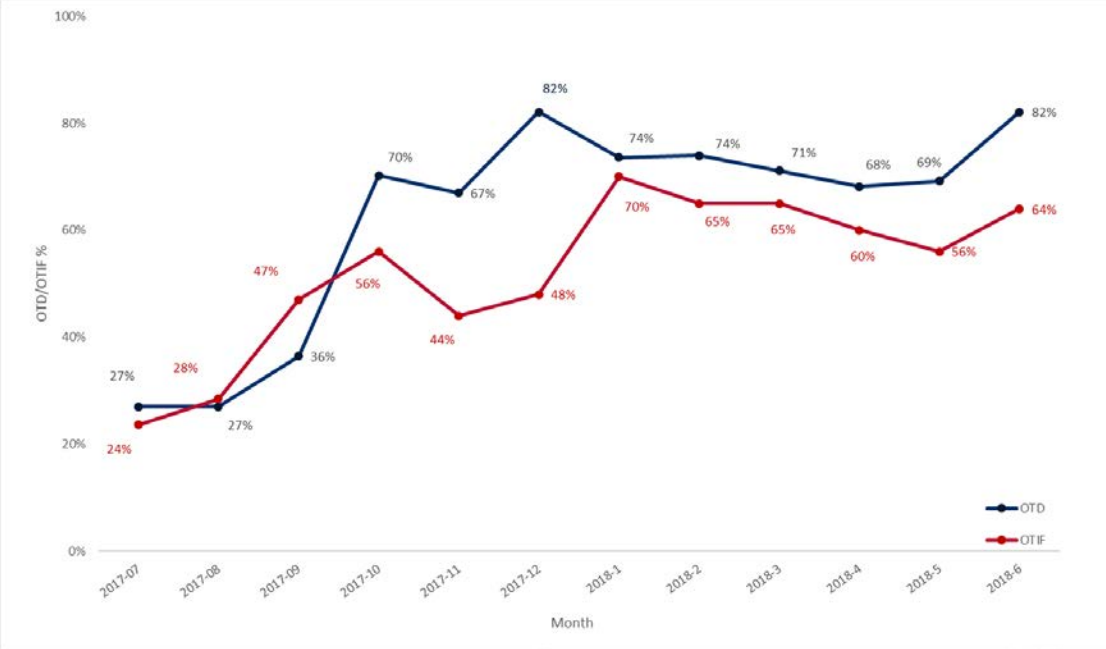
Exhibits 7 and 8 show our OTD and OTIF rates over the last three quarters and over the three months of Q3. The OTD rate remained stable from Q2 to Q3, at 73 percent. Further, using a –30/ + 30 delivery window, OTD was 88 percent for Q3[5].

OTIF decreased to 60 percent in Q3, for three main reasons. First, GHSC-PSM delivered a significant volume of backlog orders and these orders count as not on time and in full. These represented approximately 26 percent of the OTIF figure for the quarter. In addition, there was

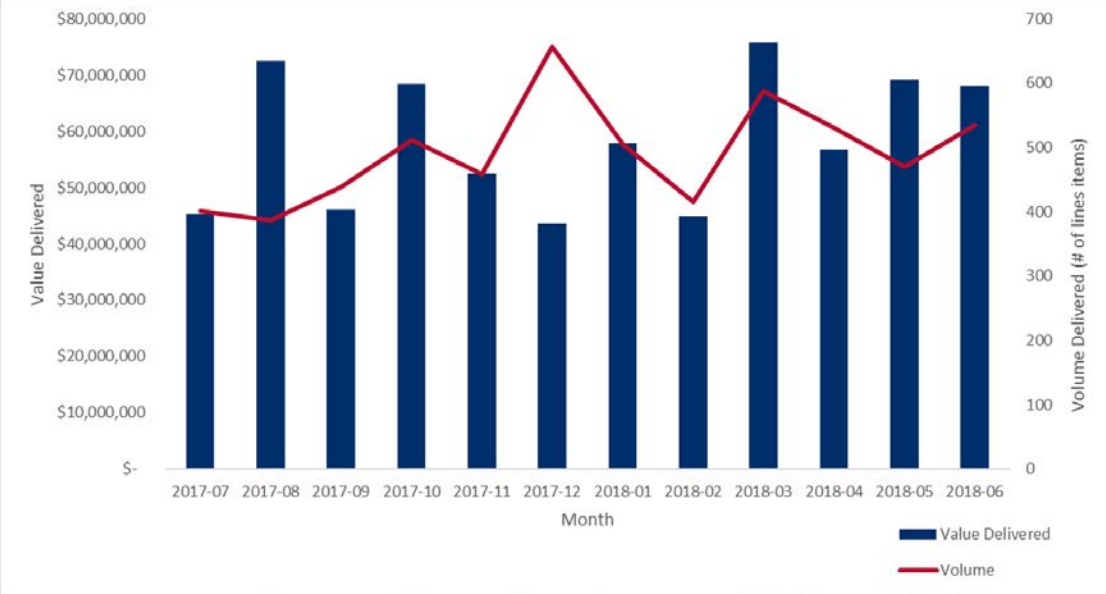
[5] The +30 day window had not closed as of the date of the submission of this report, so the +30 day OTD rate only reflects data as of July 24.

Improving Timeliness While Increasing Value and Volume of Deliveries

The graphic below shows the trajectory of GHSC-PSM's on-time delivery for two metrics (OTD and OTIF for the -14/+7 day window), by month over the last 12 months.



The graphic below shows the increase in value and volume of GHSC-PSM deliveries by month over the last year.

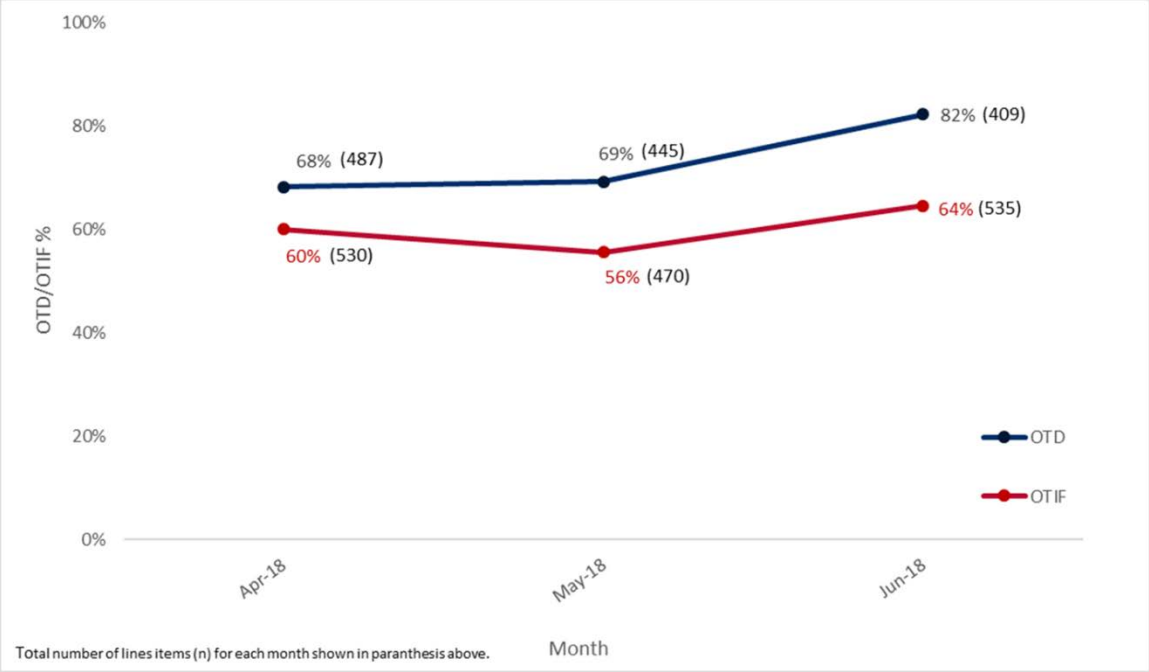


The ability to achieve and maintain high OTD rates with increasing volume and value of deliveries reflects the effectiveness and scalability of GHSC-PSM's improvement measures.

an uptick in line items delivered on-time but not in-full in Q3 as the project split orders at the request of the client due to the large volume of some consignments or to ensure that central warehouses had needed product. Furthermore, some line items with an agreed delivery date at the end of the quarter (the last week of June) were delivered in early July 2018. These deliveries count as on time in June for the OTD metric, positively affecting the Q3 OTD, and in July for the OTIF metric, which will positively affect the Q4 OTIF[6].

The percentage of line items that are backlogged is down 1.3 percentage points from Q2, and now comprises 3 percent of annual volume (below the target ceiling of 5 percent).

Exhibit 8. OTIF and OTD in Q3



As shown in Exhibit 8, while quarterly OTD stayed steady between Q2 and Q3, the project saw improved monthly OTD performance. There was a 14 percentage point increase in monthly OTD from the first month of the quarter (68 percent) to the last month (82 percent).

As can be seen from Exhibit 9 below, an analysis of OTD performance over the quarter identified the three main reasons for order lines not being delivered on time:

1. Unrealistic agreed delivery date, i.e., the agreed delivery date quoted to the client was set too early: 6 percent

[6] Orders that are delivered on time can count towards on-time delivery in different time periods, depending on which metric is used. For example, a delivery with an agreed delivery date at the end of June that is made the first week of July counts as on-time in June (or Q3) with the OTD metric. That same delivery counts as on-time in July (or Q4) with the OTIF metric.

2. Order release delay, i.e., after receipt of client approval, there was a delay in releasing the purchase order to the supplier: 9 percent
3. Goods availability delay, i.e., the supplier did not make the order available for pick up by the promised date: 9 percent

GHSC-PSM conducted a root-cause analysis on the late orders at the end of each month and identified appropriate corrective/preventative measures (see Exhibit 10). As a result of this continuous improvement process, OTD performance improved over the quarter and reached 82 percent in June.

Exhibit 9. Root-Cause Analysis of OTD

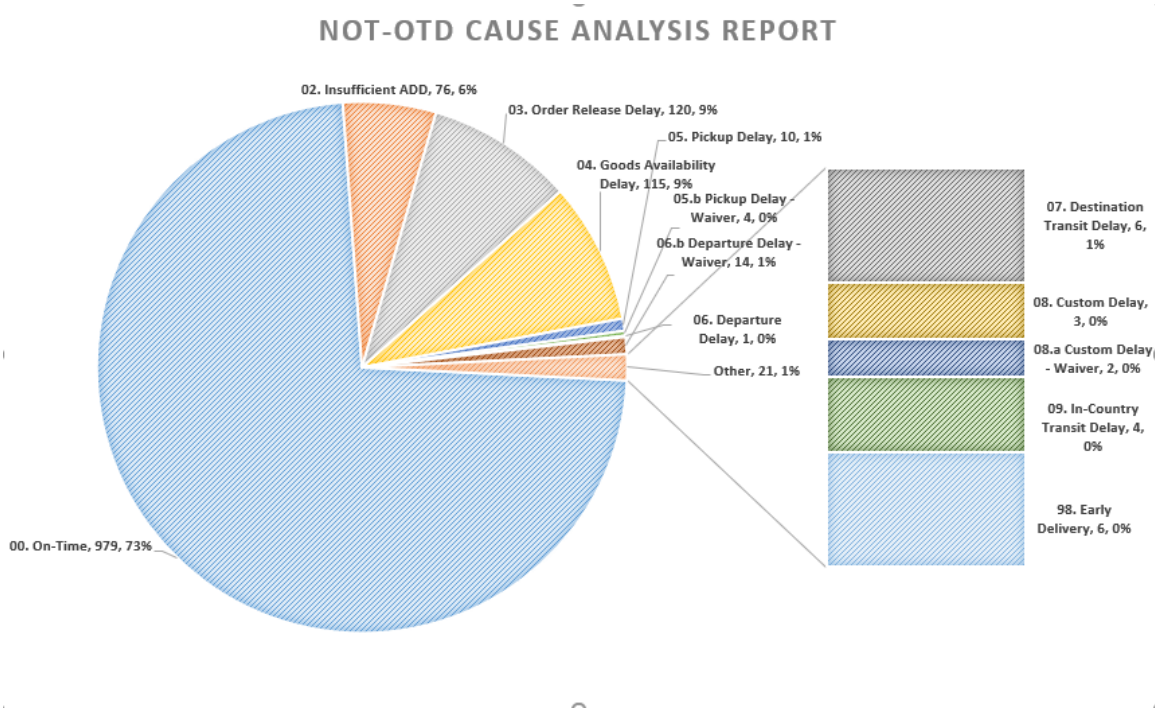
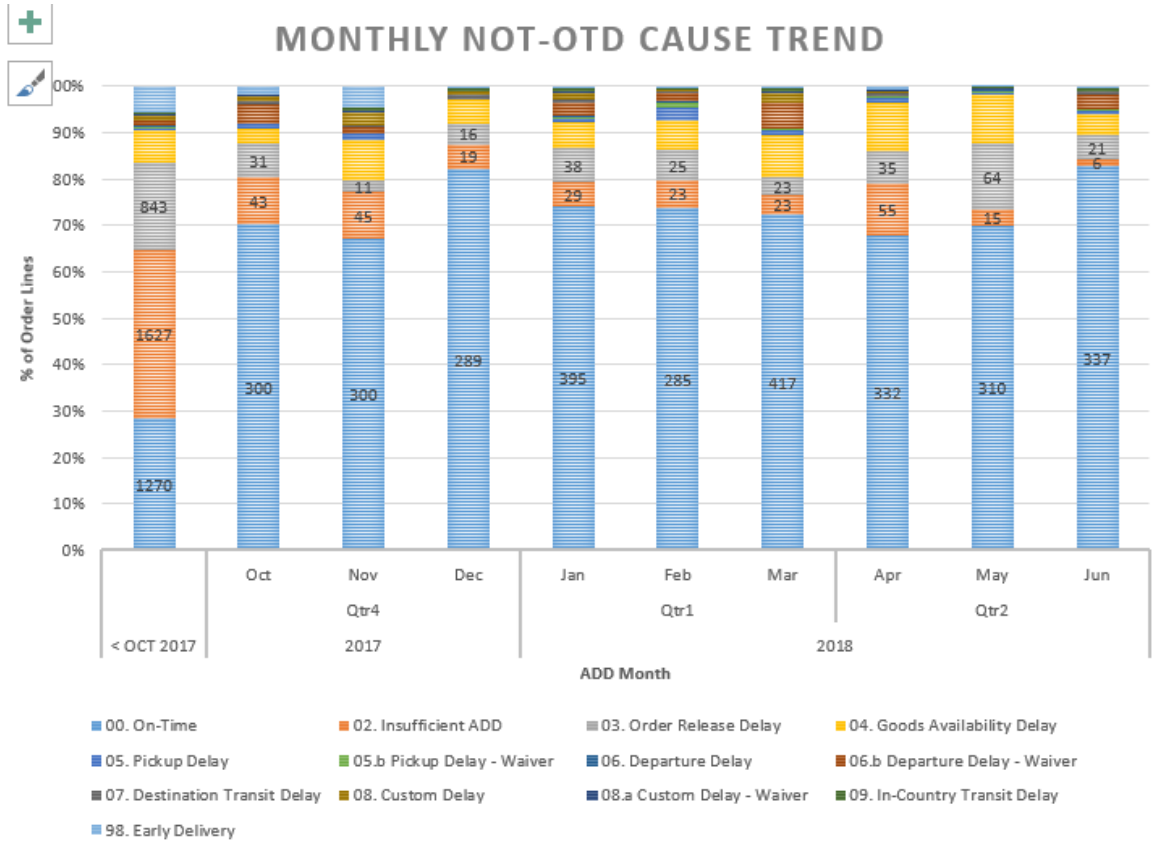


Exhibit 10: Trends in Delivery Timeliness and Causes of Delay



C2. Systems Strengthening Technical Assistance

In Brief

GHSC-PSM continued **start-up activities in Niger and Sierra Leone**, with funding emphasis on malaria.

The project made significant strides in advancing training programs associated with **health supply chain workforce development.**

Systems strengthening through country programs
33 country-specific and regional field offices (with office opening soon in Niger)
41 countries supported
More than 1,280 staff

The project helped launch use of a **Warehouse Management System (WMS)** in **Lesotho** and delivered **133 temperature monitoring sensors** to eight warehouses in Burkina Faso, achieving significant savings and other value.

USAID and GHSC-PSM hosted **23 representatives** from the central medical stores and missions of Lesotho, Uganda, and Zambia during a **study tour to Lesotho to leverage experiences and share advances** made in logistics.

GHSC-PSM **received 83 supply plans** from 22 countries, including 75 required plans. The team reviewed and provided feedback on 53 supply plans.

A strong national health system requires a supply chain that consistently provides affordable, high-quality medicines and other health products at all health service delivery points. GHSC-PSM maintains field offices in 33 countries and has provided long- and/or short-term technical assistance to ministries of health and other key stakeholders in 41 countries to achieve these goals.

GHSC-PSM's vision is for every country to have a government-led health supply chain that is integrated, optimized, accountable, agile, lean, and able to sustainably supply quality products to all citizens. Each supply chain system should emphasize automated data capture, real-time end-to-end data visibility, pharmaceutical-grade infrastructure, and efficient distribution. Each supply chain should be managed by supply chain professionals in a culture of quality improvement. GHSC-PSM works to achieve this vision through four key methods:

- **Strategy:** Developing project-wide global technical approaches and assisting country teams in applying these to their context.
- **Implementation:** Providing technical assistance and tools and building technical capacity to help country teams implement activities.
- **Monitoring:** Engaging continuously with country teams to monitor and support technical progress toward long-term goals.
- **Thought Leadership:** Curating, creating, and disseminating content related to technical knowledge in health supply chain management.

C2a. Activities and Achievements

GHSC-PSM maintains 33 field offices with a total of 1,286 staff. This includes a new office in Sierra Leone (see box).

GHSC-PSM regularly refines our health supply chain systems strengthening technical approaches in response to USAID priorities and our experiences in country implementation. Following are highlights of where and how GHSC-PSM applied these approaches globally and in specific countries in Q3.

New Office in Sierra Leone

The new GHSC-PSM office in Sierra Leone, funded by PMI, will provide technical support and commodity distribution for the government of Sierra Leone. Technical support will focus on forecasting and supply planning, LMIS, and warehouse and inventory management to support the National Malaria Control strategy.

Cross-cutting Health Supply Chain Systems Strengthening

In April, GHSC-PSM facilitated the well-received *Introduction to Supply Chain Management and Commodity Security for Health Commodities* course for USAID staff at the GHSC-PSM headquarters. A total of 21 USAID staff members from missions and USAID/Washington participated in the week-long course. Participants learned about monitoring supply chain performance, reporting requirements, data standards, supply chain costing, system strengthening approaches, and other topics through lectures, hands-on seminars, and simulations.

In May, GHSC-PSM held a one-day technical workshop on *Strategy to Action* with USAID. The workshop sought to harmonize technical interventions/activities to advance end-to-end visibility across public health supply chains. Country case studies, technical presentations, and small group discussions showcased the interdependence and linkages between health supply chain systems strengthening technical areas, specifically, how progress in one technical area can be leveraged to advance priorities and activities in other technical areas. Outputs from this workshop are informing project work planning for FY19.

Globally, GHSC-PSM is aligning our strategies and technical approaches with government priorities for improving supply chains, with the goal of achieving more sustainable supply chains. This starts with understanding a supply chain's strengths, weaknesses, and national priorities for improvement. The project uses several tools to support this, including the National Supply Chain Assessment (NSCA) 2.0 tool.

Health Supply Chain Systems Strengthening Technical Areas

- Forecasting and supply planning
- Governance and leadership
- Global standards
- Health-care waste management
- Laboratory networks
- Management information systems
- Process improvement
- Procurement
- Strategy and design
- VMMC
- Warehousing and distribution
- Workforce development

In April, GHSC-PSM, the GHSC-TA NSCA Task Order, and USAID co-hosted a training on the recently updated NSCA 2.0 tool. The new tool will better identify the performance and capabilities of supply chain functions. Several global organizations attended, including CHAI, the Global Fund, UNICEF, and stakeholders from the government of Uganda. In May, GHSC-PSM supported the Ugandan government in implementing the NSCA 2.0. Insights from this report — to be delivered next quarter

— will guide the government of Uganda, USAID, and the Global Fund in developing coordinated supply chain investments to improve health outcomes in Uganda.

In **Namibia**, GHSC-PSM received a Certificate of Appreciation from USAID for work between October 2016 and April 2018, when USAID accelerated VMMC, HIV testing, pre-exposure prophylaxis, antiretroviral therapy, and malnutrition interventions to support Namibia's effort to reach its 90-90-90 goals. Namibia is expected to be one of the first countries to achieve HIV epidemic control by 2020. GHSC-PSM's achievements in Namibia reflect wide-ranging technical assistance in strategy and planning, forecasting and supply planning, procurement, warehousing and inventory management, MIS, governance and financing, and human resources capacity development.

Workforce Development

GHSC-PSM continues to provide support to **Angola**, **Burma, Cameroon, Ethiopia, Madagascar, Malawi, Mozambique, Nepal, Nigeria, Pakistan**, and **Rwanda** to strengthen their public health supply chain workforces. These interventions help build sustainable workforces through professionalization and systematic approaches to workforce development.

GHSC-PSM supported the health ministry in **Burma** to improve access to essential health commodities through efficient data management and use of data to inform decision making in three regions. The project introduced a data utilization tool, trained 26 staff, and provided on-the-job supervision in analyzing health facility data. They identified 113 health facilities that were overstocked or understocked. They reallocated commodities from 36 overstocked health facilities and supplied commodities from township stores to another 60 health facilities to avoid stockouts.

In **Cameroon,** GHSC-PSM has supported 12 districts of the Yaoundé and Douala clusters to form supply chain taskforces that provide continuous follow-up on key supply chain management issues. Taskforces make reminder calls to sites before the deadline for report submission, provide coaching to site personnel, review monthly data, use the data to place resupply orders, and set monthly targets. In some districts, mentors have been assigned to coach and mentor site personnel on supply chain management. Through this program, staff have reallocated commodities from sites with excess stock to sites at risk of stockout. Based on this initial success (see box), the program will expand to other areas of the country.

Taskforces and Mentors Yield Results in Cameroon

District taskforces, mentors, and coaches have led to improvements in supply chain indicators between February and May 2018, including:

- an **increase in stocked according to plan** from 64 percent to 70 percent
- a **decrease in stockouts** from 11 percent to 5 percent.

The Ministry of Public Health in **Madagascar** and GHSC-PSM trained 95 central-level trainers and 680 district and regional managers as part of a national "cascade" training strategy to strengthen the capacity of professionals at each level of the supply chain. The 2017 EUV survey had assessed 81 out of 2,000 health facilities in Madagascar (not a nationally representative sample) and found that only 57 percent of district pharmacy managers and 51 percent of community medical storekeepers were trained in warehousing and inventory management, and

most lacked a clear understanding of roles and responsibilities within the supply chain. Topics in the training included supply chain roles and responsibilities, use of management tools, storage guidelines, and expiry management. The cascade training will eventually reach 115 district pharmacy providers, 2,623 heads of health facilities, and around 40,000 community health volunteers, who are the pillars of ensuring availability of commodities to the end-users in the most remote communities.

In **Malawi,** GHSC-PSM supported the health ministry in reviewing and improving existing supportive supervision procedures and in training district supply chain supervisors to effectively conduct supportive supervision of health facility supply chain staff. The new approach emphasizes joint problem solving, mentoring, and two-way communication between the supervisor and those being supervised. It covers stock management, store management, ordering and reporting, prescribing, and dispensing. The new approach is expected to strengthen relationships and optimize teamwork, optimize resource allocation, foster high standards, and ultimately promote consistent availability of essential medicines and medical supplies at all levels of the health system.

GHSC-PSM supported the University of Health Sciences (UHS) in Lahore, **Pakistan**, to independently launch its first public health supply chain management short certificate course to train government and nongovernmental officials who work in supply chain management. UHS is now playing a central role in building the public health supply chain workforce capacity in Punjab. The certificate course will be offered on a quarterly basis, and UHS plans to develop a two-year degree program in health supply chain management for preservice students.

Educating Future Supply Chain Managers in Pakistan

University of Health Sciences in Lahore launched its first public health supply chain management certificate course with plans to further develop a degree program.

Management Information Systems

GHSC-PSM continues to provide support to many countries, including but not limited to **Guinea, Nigeria, Malawi,** and **South Sudan,** with their supply chain information systems. Although at different levels of supply chain maturity, these countries are on a path to developing end-to-end visibility, with data-driven mechanisms to support evidence-based decision making.

Working with the government of **Nigeria** through the National Supply Chain Integration Project and donors like the Global Fund and UNFPA, GHSC-PSM supported Phase 1 of the e-LMIS rollout (see box). The e-LMIS, commonly called Navision, offers an innovative approach to ensuring accuracy, efficiency, and integration of data management for health commodity logistics. Before its introduction, different donor-funded programs collected and managed logistics data in siloed structures and used data from their supported health facilities independently, with limited visibility to the government and other partners for their respective program areas. Accessing, aggregating, and analyzing national logistics data was a laborious and time-intensive endeavor. The e-LMIS, which will collect logistics data from about 19,000 sites through state and local government structures, now allows all key stakeholders to log on to the platform simultaneously and view the same data in real time. Key decision makers within the government of Nigeria and donors like USAID can view the status of commodities at the health facility level with just a few clicks. The number of participating facilities will continue to increase as the rollout continues.

GHSC-PSM is supporting the Ministry of Health of **Guinea** in automating its paper-based LMIS. The Logistics Management Unit and GHSC-PSM completed rollout of the eLMIS in selected regions and trained 53 supply chain staff from the regional prefectural and hospital levels in the use of eLMIS to support reporting, aggregation, and visualization of logistics data from health facilities. Rollout of the new eLMIS in three regions in Guinea resulted in 100 percent reporting rates in April, improving data availability and visibility for decision making — ultimately improving health outcomes.

GHSC-PSM is addressing limited data visibility outside of **South Sudan's** capital city of Juba by piloting an innovative call center that effectively tracks HIV/AIDS commodity availability at various facilities throughout the country. By leveraging a call center model traditionally used in the private sector, Juba-based staff conduct routine calls to HIV/AIDs treatment facilities to check on stock status. With this information, the GHSC-PSM team can identify and develop plans to alleviate supply risks. The data will eventually inform forecasting and supply planning and will expand to include other health commodities, including malaria and FP/RH commodities. The call center offers a flexible solution for accessing data despite the lack of a functioning LMIS.

Warehousing and Distribution

GHSC-PSM continues to provide support to **Burkina Faso, Cameroon, Ethiopia, Ghana, Lesotho, Mozambique, Namibia,** and **Zambia** to improve their warehousing and distribution systems. Our approaches seek to improve data-driven decision making across the supply chain, optimize in-country warehouse networks, and increase efficiencies in warehousing and distribution operations. Promoting alternative ownership and management models for medical stores and distribution is another key approach.

In **Burkina Faso**, GHSC-PSM supported CAMEG (Central Medical Stores) with temperature monitoring in its central warehouses, delivering 133 sensors that were installed at eight warehouses in Ouagadougou. The sensors monitor temperatures in climate-controlled rooms, cold rooms, freezer boxes, and other areas. GHSC-PSM and CAMEG monitor the temperature data maps generated by the sensors to help CAMEG ensure its warehouses meet WHO guidelines for storage of time-and temperature-sensitive pharmaceutical products, such as artesunate injectable for severe malaria management. These sensors are helping to ensure the potency of temperature-sensitive drugs and helping CAMEG to improve environmental temperature stability in its warehouses.

GHSC-PSM worked with the Global Fund and **Ghana** Health Services to launch LMD activities in all 10 regions, covering health facilities nationwide. LMD has replaced ad hoc distributions of health commodities from regional medical stores with streamlined, scheduled distributions to SDPs by private-sector third-party logistics service providers along optimized routes.

GHSC-PSM provided technical assistance to **Lesotho's** central medical stores in the "Go Live" process of its enhanced warehouse management system. The warehouse management system now will use a handheld barcode scanner to track inventory, significantly improving operational efficiency. This technology will:

- Save time and money by
    - Providing a quick and easy alternative to arduous manual inventory tracking
    - Eliminating the need for annual closure of the warehouse for inventory

- Improve data accuracy and decision-making power by
    - Improving inventory accuracy and removing the possibility of human error through use of barcodes
    - Achieving faster receiving, picking, and dispatch functions with ongoing and continuous inventory

GHSC-PSM supported the delivery of more than 105 metric tons of TSF to district hospitals. *Photo credit: GHSC-PSM*

In **Namibia**, GHSC-PSM worked with the health ministry to incorporate therapeutic and supplementary food (TSF) into the pharmaceutical supply chain. Namibia introduced TSF in 2011 to support better nutrition and improve health outcomes among undernourished HIV/AIDS patients. Previously stored and distributed separately, there were prolonged periods of TSF shortages at HIV/AIDS treatment facilities, particularly in remote areas in the north of the country where the largest number of patients are located. Since March, health facilities order and receive TSF through routine orders as is done for other pharmaceuticals, and the government uses existing trucks, transportation routes, and schedules for distribution. Also, data are captured on the existing electronic inventory management tools. Recent site-level supportive supervision visits found TSF products available in the six highest-HIV-burden regions. Ultimately, integration of TSF with other pharmaceutical products means a reliable supply of lifesaving commodities for people living with HIV/AIDS.

Leadership, Governance, and Procurement

GHSC-PSM continues to provide support to several countries, including **Lesotho, Uganda,** and **Zambia,** to put in place foundational leadership, governance, and procurement approaches to ensure more self-sustaining supply chains. Key approaches seek to establish and strengthen logistics management units, improve legislative frameworks for procurement, and improve procurement procedures.

GHSC-PSM and USAID hosted 23 representatives from the central medical stores and USAID missions of **Lesotho, Uganda,** and **Zambia** on a study tour to Lesotho. The tour allowed the three countries to share advances in how they conduct their operations and to discuss the technical and financial feasibility of each new approach. The three topics were:

- Lesotho's implementation of activity-based costing to better understand and control the actual cost of every aspect of its operations. (GHSC-PSM has supported this work.)
- Uganda's achievement of International Organization for Standardization (ISO 9001-2008) certification for its National Medical Stores, including the process for achieving certification and the benefits that it has derived.

- Zambia's establishment of a commodity security center to collect and process information from every stage of the logistics cycle to inform quantification, procurement, and distribution planning.

The study tour included a visit to the central warehouse in Lesotho, allowing participants to observe the impressive progress in modernizing warehouse operations and instituting warehouse best practices there, also with the support of GHSC-PSM.

GHSC-PSM worked with the government of **Uganda**, USAID, and other partners to **reduce long and inconsistent lead times for importing health commodities.** GHSC-PSM had experienced unpredictable importation lead times and delays in import clearance and presented these challenges to the Ministry of Health. Recognizing that all donor-funding programs had a stake in this challenge, the Ministry of Health led discussions with all key partners that identified several solutions:

According to **Harriett Akello, Senior Pharmacist at the Ministry of Health in Uganda,** "The NDA MIS has reduced verification lead time from between two weeks to two months to approximately one week."

- The National Drug Authority (NDA), the entity responsible for import clearance, pledged to streamline the review process for import applications by limiting questions to only those related to product quality and safety.
- NDA customized the management information system used to process clearance applications; now GHSC-PSM and other partners can enter their requests online, reducing the time needed by about five days. GHSC-PSM hosted an NDA orientation to the system to show partners how to use the system effectively.
- NDA agreed to fast-track clearance of applications for import verification certificates, reducing the process by about 10 working days for medical devices, diagnostics, and registered pharmaceuticals.

Consequently, lead time for processing preclearance documents with NDA fell by as much as eight weeks to an average of four, and the process now has a more predictable timeframe to use in planning procurement and delivery. This creative collaboration benefitted all stakeholders, most importantly, the patients who rely on lifesaving health commodities.

Country-Level Process Improvement

GHSC-PSM field offices assist with analyzing, evaluating, and developing recommendations for system and process improvements, optimization, and/or operations sustainment efforts for countries.

In **Guatemala,** GHSC-PSM helped the Ministry of Health's Logistics Management Unit develop an online software tool to link the Ministry of Health's and the Ministry of Finance's disparate codes for medicine. The health ministry used 1,863 codes to place purchase orders for medicines, surgical equipment, and other health supplies, while the finance ministry used 4,726 different codes to initiate the actual procurement processes. This led to unnecessary confusion and delays, as it was difficult to track procurements and to assess stock levels between the two ministries. By aligning these two different code sets, the ministries now have a consistent

reference point for each medicine, aiding in procurement transparency and stock data availability. GHSC-PSM facilitated a review of the different sets of codes using the software tool and is helping establish unified codes for all medicines. The revised codes will be used in the Medicines Catalogue that GHSC-PSM is developing for the Ministry of Health.

In **Rwanda,** GHSC-PSM's ongoing collaboration with the health ministry to implement a Quality Management Improvement Approach (QMIA) and use of its eLMIS has achieved strong results. GHSC-PSM visited all 585 SDPs to support capacity building and to monitor supply chain performance. Results (shown in the box) were impressive. Further, stakeholders are relying on the high-quality data in the eLMIS to inform forecasting and supply planning and to support quarterly review of supply plan implementation.

Strong Performance from eLMIS and QMIA in Rwanda

Use of the eLMIS

- 100% of SDPs use the eLMIS for ordering commodities
- 87% for recording consumption
- 85% for recording receipt of products

Other supply chain indicators

- 82% of sites store health commodities in appropriate conditions
- 74% of facilities had a random selection of tracer products stocked according to plan
- The stockout rate was less than 5% for all program products
- OTD from district pharmacies to SDPs was 90%
- OTD from the central medical store to district pharmacies was 92%.
- e-LMIS data accuracy is above 85%

Forecasting and Supply Planning

GHSC-PSM continues to provide forecasting and supply planning (FASP) support to all GHSC-PSM countries that purchase commodities through our project. In addition, we provided technical support to **Botswana, Burundi, Côte d'Ivoire, Guinea, Indonesia, Jamaica, South Sudan, Suriname,** and **Zambia,** as those countries seek to institutionalize FASP processes, moving from reliance on external technical support to **developing their own fully integrated FASP capabilities**.

Countries develop and submit to GHSC-PSM supply plans for up to eight commodity groups. Supply plans are the source of field office procurements, based on projections of consumption and inventory. For Q3, GHSC-PSM received 75 supply plans from 22 countries; 66 of these were for commodities procured by GHSC-PSM. (Although the additional plans may not include GHSC-PSM procurements, they provide the project with insight on the market size and scope for various commodities and can be shared with global community stakeholders.) GHSC-PSM monitors supply plans quarterly to identify common errors and omissions across countries or commodity categories, to assess results from earlier improvement efforts, and to identify areas for additional guidance and mentoring. The quality of the plans is assessed against 15 criteria, with the reviews generating actionable recommendations for improvement.

GHSC-PSM supported the National AIDS and Tuberculosis Programs in **Burma** to develop its national forecasts for HIV/AIDS and tuberculosis commodities, with proposed procurement of more than $20 million in drugs in 2019. The project oriented 25 focal persons from the National AIDS Program and implementing partners to refresh their knowledge of forecasting and supply planning. The project also helped the National Tuberculosis Program adopt the Quan TB tool for estimating multi- and extremely drug-resistant (MDR and XDR) tuberculosis drugs. The planned

procurements will support treatment needs of more than 177,000 adult and pediatric HIV/AIDS and 3,655 MDR and XDR tuberculosis patients.

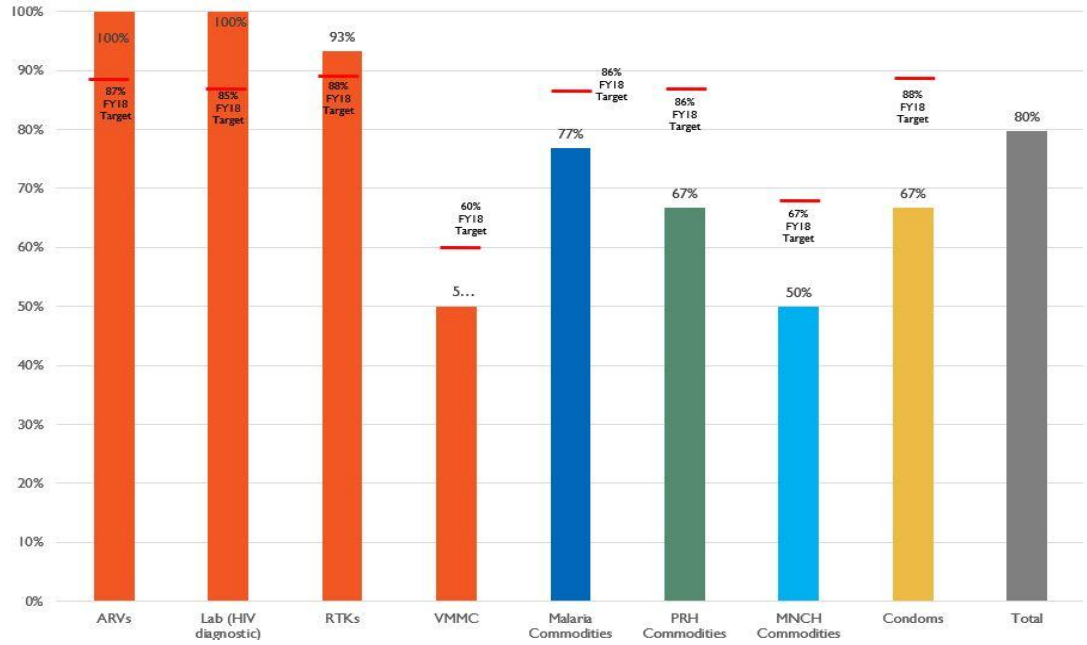
In **Suriname**, GHSC-PSM provided training on the use of Quantimed and PipeLine software to 16 staff from the National AIDS Program and the central medical store. This training exercise demonstrated how quantification can provide visibility into other challenges in a health system. Analysis of the country's data identified issues that could stem from irrational dispensing, irrational prescribing, irrational use, and/or poor reporting practices. These have a direct impact on the accuracy and validity of quantification outputs, but also reflect problems in health service delivery. GHSC-PSM has recommended that the government of Suriname evaluate the root causes of these data flaws and offered to assist in this effort.

C2b. Project Performance

GHSC-PSM collects and analyzes data on a variety of indicators of national supply chain system health to understand the environments in which we operate and to help us calibrate our work. These indicators also help establish priorities for our health supply chain systems strengthening support and, over time, will allow us to assess the outcomes of our technical assistance. Values for these indicators are provided in Annex A. Below, in Exhibit 11, we present results for one indicator — percentage of countries conducting quarterly supply plan updates — that is critical to ensuring procurements are planned well ahead and that adequate stock levels are maintained in the supply chains that we support.

Percentage of Countries Conducting Quarterly Supply Plan Updates

Exhibit 11. Percentage of Required Supply Plans Submitted to GHSC-PSM during Q3 by Commodity Group



Under the quantification paradigm supported by GHSC-PSM, supply plans take a regularly updated, forward-looking view of demand for 18 months. This **comprehensive, systematic, and long-term approach to supply planning** provides visibility into monthly demand even if a single quarterly update is not submitted.

Across all commodity groups, 75 required quarterly supply plans were submitted, representing 80 percent of the Q3 required supply plan expectation. This ranged from 100 percent of required supply plans submitted for lab (HIV diagnostics), 100 percent for ARVs, and 77 percent for malaria commodities to 50 percent (three of six) for MNCH commodities. While the supply plan submission rates are slightly down across all task orders, the raw number of supply plans submitted remained steady due to an increase in the expected number of supply plans.

C3. Global Collaboration

In Brief

GHSC-PSM conducted market dynamics research for HIV/AIDS, malaria, and FP/RH to **identify ways to strengthen markets for key commodities**.

The project made significant progress in **incorporating global standards** throughout our supply chain. This will help improve efficiency, reduce costs, and improve end-to-end data visibility.

GHSC-PSM continued to **participate actively in global fora**, sharing data and promoting new approaches, and to **test innovations** in our global and country-level procurement and logistics work.

C3a. Activities and Achievements

Our global collaboration in Q3 focused on strategic engagement, market dynamics, and other research, awareness, and advocacy efforts. GHSC-PSM is also working to scale successful innovations in multiple countries and within the global health supply chain space. The scale, scope, and complexity of managing a global supply chain requires the project to collaborate with many global and local partners to ensure the availability of health commodities. By integrating our work across health sectors and sharing information, resources, activities, and capabilities, we can achieve together what we could never achieve alone.

Strategic Engagement

As described throughout this report, GHSC-PSM engages actively with other global players to promote availability of health commodities. We do so by providing supply chain expertise to important global fora; working with other global partners to allocate scarce supply; promoting harmonization in standards and practices; and working to manage commodity stock information as a global good. The project's contributions in these areas in Q3 are recapped below.

Providing Supply Chain Expertise to Important Global Fora

GHSC-PSM represents the supply chain point of view in key global meetings to ensure donors and governments take supply chain considerations into account when planning their programs. This helps donors get timely access to the commodities needed for their programs. Participation in these meetings also helps GHSC-PSM stay current with emerging requirements so we are ready to respond to global health commodity needs. Specifically, this quarter, GHSC-PSM:

- Launched the RHSC Systems Strengthening Working Group webinar series with a first webinar titled *Data is Dialogue*.
- Presented a well attended virtual panel for the RHSC on *Reproductive Health Supplies in Humanitarian Settings*.
- Collaborated on the design of the information system solution for the Global FP VAN.

- Shared information on one-rod implants and three-month injectables at the Coordinated Supply Planning meeting.

- Shared the oxytocin messaging framework at the annual meeting of the Postpartum Hemorrhage Community of Practice.

- Hosted a training on the revised NSCA tool's improved scoring features for participants from CHAI, the Global Fund, UNICEF, and various development agencies working on supply chain systems strengthening.

- Provided input to a feasibility study funded by Gavi to establish an Asian Regional Supply Chain Management Center of Excellence.

Collaborating to Allocate Scarce Supply
Through our PPMR and PPMR-HIV processes, the project supported donor review and planning around commodity overstocks and low stocks.

For FP/RH commodities, GHSC-PSM participated in the biannual Coordinated Supply Planning meeting for FP/RH commodities. This included a detailed review of DMPA-IM and one-rod implant orders to mitigate the risk of stockouts given the tight supply of these commodities. The project provides weekly updates to this group on product availability and on efforts to allocate product to achieve priorities.

Also, GHSC-PSM processed data from 48 country programs for the PPMR this quarter. Based on these reports, the CARhs group expedited nine shipments to prevent stockouts in Burundi, Chad, and Madagascar, and transferred Microgynon ED Fe from Benin to avert a stockout in Mali.

GHSC-PSM started supporting two new countries — Burundi and Zimbabwe — in reporting to the PPMR-HIV. The project also hosted planning meetings for the Coordinated HIV/AIDS Supplies Group, working with the Global Fund, the other major international donor of HIV commodities, to establish a process for identifying gaps and areas of duplication in providing HIV commodities that uses PPMR-HIV data.

Research and Innovation

GHSC-PSM is engaged in cutting-edge research that helps shape global markets to meet countries' needs for health commodities and that explores better ways to get these products to the people who need them.

The project continued a robust program of research into the health commodity marketplace, with significant progress this quarter. Insights from our market dynamics research inform our approaches to working with the private sector to ensure long-term market responsiveness, efficiency, and sustainability.

Global Packaging Requirements
In Q3, GHSC-PSM, in coordination with UNFPA, documented packaging specifications for USAID- and UNFPA-procured male condoms, female condoms, personal lubricants, implants, injectables, and oral contraceptives. This exercise revealed where UNFPA's and USAID's

packaging specifications align and diverge at the pallet, export carton, and saleable unit levels. Also, we drafted key informant interview guides for interviews to be conducted in Zambia, Rwanda, and Mozambique in Q4 to document the needs of in-country programs and the impact of changing packaging specifications. Increased packaging harmonization could increase efficiencies and realize cost savings.

CPhI North America

GHSC-PSM attended the annual meeting of CPhI North America, an established pharmaceutical event that brings together key industry stakeholders. At the meeting, GHSC-PSM staff learned about recent developments in cost-effective flow processes and the advantages of continuous processing compared with the traditional batch process methods, including cost incentives and how they tie into the research being done under Medicines for All. In particular, continuous flow technology could help change the market for low-volume products and potentially shift manufacturing to Africa for specific items due to the small infrastructure footprint required by this approach, reduced environmental impacts from green chemistry, and streamlined quality assurance processes.

Other Examples of Research and Innovation

GHSC-PSM, working closely with PMI, implemented a new sourcing strategy for SPAQ. GHSC-PSM used the PMI Emergency Loan Fund to place large orders for SPAQ, giving our customers access to highly coveted production capacity and time slots for this product that has only one supplier.

GHSC-PSM also tested a revised approach for third-party testing of ALu. With this new approach, we establish risk profiles for the three priority ALu suppliers and then test samples based on these approaches. This controls product risk while shortening lead times and reducing costs associated with QA.

The project surveyed suppliers of WHO-prequalified MNCH products to understand barriers and opportunities to increase use of the WHO Collaborative Registration Procedure. We are working with USAID and partners that provide technical assistance to national medicines regulatory authorities around the world to disseminate supplier insights into barriers and to identify ways to address these barriers and increase use of WHO collaborative registration.

New Approaches and Technologies at the Country Level

GHSC-PSM also supported wide-ranging innovation in the many countries we serve, helping them introduce new approaches and new technologies to improve their supply chain performance. Examples include the following:

Approaches

- The government of Mozambique introduced use of maintenance contracts that will hold VL testing service providers more accountable and improve instrument performance.

- In Zimbabwe, the most recent EUV survey adopted a sampling strategy that involved weighting for recent malaria incidence to increase the likelihood that facilities in higher-burden malaria areas were selected for the survey.

- New EUV surveys that strengthened the sampling strategy and harmonized key questions across countries for improved data quality. The survey has been modularized

to allow for additional areas to be selectively assessed in countries, including an MNCH module that was piloted in Zambia and Ghana.

- Through an innovative partnership between the Ministry of Health and the Ministry of Environment in Cambodia, forest rangers started delivering LLIHNs to forest-dwelling communities that live in environmentally protected areas.

- The National Council of Women of Madagascar helped develop training materials and supported women's involvement in the LLIN campaign there.

- The government of Mozambique piloted school-based distribution of LLINs as part of a continuous distribution strategy.

- The government of Uganda implemented the new NSCA 2.0 assessment tool. Results will be used to determine priorities for system strengthening.

- The government of Cameroon formed supply chain task forces in 12 districts to provide continuous follow-up on key supply chain management issues, reminding sites when reports are due, coaching site personnel, reviewing monthly data, and placing resupply orders.

- The government of Namibia implemented a new strategy to deliver therapeutic and supplementary food using the pharmaceutical supply chain's existing trucks, transportation routes, and schedules. Integrating these foods that complement HIV treatment will end shortages that often plague remote areas.

Technologies

- The Ministry of Public Health in Madagascar piloted use of the DHIS2 to obtain access to data from all levels of the health system in all geographies in real time.

- The government of Zambia started using a new molecular method for VL testing, the first such clinical use of this method for a PEPFAR program.

- VMMC providers in Zimbabwe shifted to ordering detachable couches that are more portable to support their prevention activities.

- To address high levels of stockout of family planning commodities at subdistrict levels, the government of Balochistan in Pakistan built staff capacity to analyze stock-level data using a dashboard. The government installed USSD data service capability on field worker cell phones in remote parts of the province that enabled them to transmit stock data by SMS text even where Internet service is not available.

- The Ministry of Health and Sports in Burma introduced a new data utilization tool that already has helped township managers identify stock imbalances and reallocate stocks from 36 facilities.

- More than 19,000 facilities in Nigeria will upload data onto the new eLMIS, which integrates data from multiple donors' stove-piped health programs and information systems.

- The government of Guinea rolled out a new eLMIS in three regions, resulting in a 100 percent reporting rate in April.

- The central medical stores in Burkina Faso installed temperature sensors in eight warehouses/warehouse compounds. This will allow the government to ensure its warehouses meet WHO guidelines for storage of temperature-sensitive pharmaceutical products, such as severe malaria medications.

- The National Drug Service Organisation of Lesotho introduced a new warehouse management system and approach that will support ongoing cycle counting of stock, rather than an annual inventory that requires the warehouse to close. Operations and accuracy are improved by use of handheld barcode readers.

We note that new approaches or adoption of new technology by one health area often benefit other health areas, multiplying the impact of supply chain innovations.

Building Awareness and Advocacy for Change in Supply Chain Issues

GHSC-PSM works to build awareness of key supply chain issues and advocates for change around them at global and country levels. Examples are provided below.

Global Standards

Use of global standards has been a strategic enabler of supply chain efficiency, effectiveness, and innovation for numerous industries across the globe. Adoption of global standards has become a central part of the entire GHSC program to reduce costs, enhance efficiencies, and improve the availability of health commodities worldwide. To this end, in Q3, GHSC-PSM:

- Worked with the Ghana health ministry's LMIS subcommittee to provide training on master data management and to advocate for adopting GS1 standards as the primary coding system for the LMIS implementation.

- Attended the first African GS1 Healthcare Conference, which was held in May in Addis Ababa, Ethiopia. GHSC-PSM supported 30 participants from 19 countries and presented our draft country implementation guidance in a think-tank session for country regulators. The day after the conference, GHSC-

First African Global GS1 Healthcare Conference. Addis Ababa, Ethiopia. *Photo credit: GS1 Global Office*

PSM convened USAID activity managers and project field office representatives to discuss how to operationalize conference outcomes in FY19 work plans.

- Co-hosted a workshop in June in Rwanda on implementing GS1 standards to educate and build awareness of pharmaceutical traceability and global standards among key stakeholders. More than 55 participants across government agencies and implementing partners attended the event. On Day 2, the group established a five- to 10-year vision for traceability in Rwanda, assessed the current situation, and developed a roadmap for how to move forward with implementation.

- Worked with the GS1 and the Global Data Synchronization Network™ community to introduce several features to enhance GS1 use in global health, including developing a set of attributes to capture market authorization data, which enables the system to automate obtaining product registration information across countries direct from suppliers. The project also introduced a new development assistance target market that allows suppliers to send product-related information to donors. GHSC-PSM received recognition for this work.

Recognition for GHSC-PSM's Contributions

For our work promoting and facilitating use of GS1 in global health, **GHSC-PSM received an Innovation Award in June from 1WorldSync**, a leading network content provider. Each year, 1WorldSync recognizes entities that show leadership and have a major impact on their trading partner community.

- Continued work with the RHSC and UNFPA to create a common product master data file that includes attribute information for hormonal contraceptives. To be shared with the reproductive health community, this file will serve as the basis for master data for countries receiving program commodities. In Q4, it will be made available to the public on the RHSC website.

Other Advocacy

GHSC-PSM also completed the following initiatives to promote change in supply chain policies and regulations:

- **Shelf-Life Regulation Paper.** Many countries have regulations about the percentage of shelf-life that must remain for commodities to be approved for importation. GHSC-PSM produced a paper that outlines the negative impact of importation regulations based on the percentage of shelf-life remaining, recommending instead a shift to months of remaining shelf-life. We shared the document with WHO and plan to include it in an advocacy toolkit to improve the regulatory environment for the importation of life-saving medications.

- **Global Standards and Local Manufacturers.** GHSC-PSM worked on a guidance document for regulators as they develop legislation related to adopting global standards that takes into consideration the needs of local manufacturers.

- **Quality of Oxytocin in Ghana.** GHSC-PSM supported the government of Ghana and donors there in developing an action plan to ensure the quality of oxytocin throughout Ghana's supply chain. This included changing procurement, storage, and distribution practices and improving regulatory functions to safeguard oxytocin quality.

- **Streamlining Importation Processes in Uganda**. GHSC-PSM worked with the government of Uganda and USAID to streamline the review process for import applications, improve the management information system used to process clearance applications, and achieve government agreement to fast-track clearance applications for donor-funded health commodities.

Collaborating Across GHSC-PSM Health Areas and With Other GHSC Projects

Collaboration and Synergies Across Health Areas

GHSC-PSM works to maximize synergies among the various health programs we support. One way we achieve this is by developing approaches and/or systems in one health area that diffuse to other areas. For example, GHSC-PSM is piloting an innovative call center to track HIV/AIDS commodity availability at facilities throughout South Sudan. The call center offers a flexible solution for accessing data despite the lack of a functioning LMIS. Eventually, this approach will expand to capture data on other health commodities, including malaria and FP/RH commodities.

As described in Section C3b below, GHSC-PSM **trained more than 4,600** host-country government and other supply chain staff this quarter. This health supply chain training strengthens a country's supply chain for all commodities and health areas.

Collaboration with Other GHSC Projects

GHSC-PSM is a member of the GHSC program family and interacts regularly with the other GHSC projects. Below we summarize examples of collaboration with other GHSC projects from Q3.

- **GHSC-RTK.** GHSC-PSM supports the GHSC-RTK project in ensuring availability of HIV RTKs. Our extension of supply planning efforts to cover RTKs and our regular sharing of RTK supply plans gives the GHSC-RTK project good visibility into needs for its product 18 months into the future.

- **GHSC-QA.** GHSC-PSM interacts continuously with GHSC-QA, implemented by FHI 360, to coordinate QA efforts for HIV, FP/RH, and MNCH commodities. We are working closely with the GHSC-QA project to find creative ways for completing QA processes at different logistics stages to shave cycle time and improve on-time delivery performance.

- **GHSC-Business Intelligence and Analytics (BI&A).** The GHSC-BI&A project, implemented by IntelliCog, aggregates data from all GHSC projects so that USAID and external parties can examine performance and help ensure accountability for U.S. government funding. GHSC-PSM regularly submits our datasets to the BI&A project. The BI&A project also participated in CHAS planning meetings, where we discussed sharing information on HIV commodity procurements and national stock levels with the Global Fund.

- **GHSC-Technical Assistance (TA).** GHSC-PSM collaborates with the GHSC-TA contractors that provide health supply chain systems strengthening support in West Africa and in Tanzania. We prepared background supply chain information for several of these countries for the PEPFAR COP18 meetings and presentations.

C3b. Project Performance

People Trained

A performance measure related to global collaboration and cross-cutting activities is the number of people trained. This indicator provides a basic illustration of where the project is focusing its capacity-building resources and where it might expect related supply chain outcomes to improve.

A total of 4,662 individuals were trained in Q3, including 2,810 men and 1,852 women. Ethiopia alone trained 1,675 people (1,095 men and 580 women).

Most trainings were cross-cutting, meaning they addressed topics relevant to multiple health areas. For funding source, 31 percent were trained with HIV/AIDS funding; 40 percent with malaria funding; 25 percent with FP/RH funding; and 4 percent with MNCH funding.

The trainings focused on:

- Governance and financing: 26 percent
- MIS: 23 percent
- Warehousing and inventory management: 23 percent
- Transportation and distribution: 5 percent
- Forecasting and supply planning: 5 percent
- Quality assurance: 2 percent
- Monitoring and evaluation: 1 percent

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Annex A. M&E Indicators

The Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project tracks a full array of performance indicators that span commodity procurement and logistics, global collaboration, and several cross-cutting issues (e.g. training). Our commodity procurement and logistics indicators capture efficiency, effectiveness, quality, and cost of our service delivery, in line with the industry-standard Supply Chain Operations Reference (SCOR) model. Other indicators reflect performance of project partners (e.g. vendors), providing insight into how we plan, procure, and deliver high-quality health commodities through our management of subcontractors. Our global collaboration and cross-cutting indicators track contributions to the global community as well as project-wide services and contributions (e.g. number of innovations developed). In-country performance indicators capture the availability of stock at central and subnational warehouses, the extent of health facility-level stockouts by product, health element, and country, health facility reporting rates to the logistics management information system (LMIS), product loss while under GHSC-PSM control, project-led innovations, trainings, and support to developing or updating supply chain policies, regulations, and standard operating procedures. Finally, our context indicators provide information on the country supply chain environments in which we operate to inform decision-making and monitor critical assumptions.

Data Use

GHSC-PSM advocates for transparent access to appropriate data as a means of encouraging accountability, transparency, and evidence-based management. In the following tables, we capture the program activities and results, as specified in the project's Monitoring and Evaluation plan.

The GSHC-PSM field offices and headquarters use the data captured here to continuously improve results. The overall goal of the program is to ensure uninterrupted supplies of health commodities; the data that inform these indicators contribute to this. A visual management system of our progress (updated and utilized daily) allows managers to hone in on and troubleshoot these individual orders. Across all field offices, GHSC-PSM and our partners and counterparts actively use ARTMIS and in-country logistics management information system (LMIS) data to monitor stock levels and inform procurement planning.

Methodology Notes for Measuring Impact

In this report, we share the following results, each based on products delivered between the start of the project through June 30, 2018:

1. Number of years of antiretroviral (ARV) treatments delivered by GHSC-PSM
This report only includes Adult Efavirenz/Lamivudine/Tenofovir (TLE) and Nevirapine/Lamivudine/Zidovudine (NLZ) – and for the first time, Dolutegravir/Lamivudine/Tenofovir (TLD). Doses for calculating treatments are based on World Health Organization (WHO)-recommended guidelines. The calculation of patient- years allows GHSC-PSM to monitor effectiveness and efficiency by a standard unit.

2. Number of full doses of malaria treatment
Includes malaria treatments delivered over the life of the project, with "full dose" based on WHO-recommended treatment guidelines. Specific medicines counted are limited to those used only for treatments, and not primarily as prophylaxis. Specifically, it includes only Artemether/Lumefantrine and Artesunate/Amodiaquine formulas this quarter.

3. Number of Couple Years Protection (CYP) provided by delivered contraceptives

CYP is a standard indicator calculated by multiplying the quantity of each contraceptive method distributed by a conversion factor, to yield an estimate of the duration of contraceptive protection provided per unit of that method. The CYP for each method is then summed for all methods to obtain a total CYP figure. CYP conversion factors are based on how a method is used, failure rates, wastage, and how many units of the method are typically needed to provide one year of contraceptive protection for a couple. The calculation takes into account that some methods, e.g., condoms and oral contraceptives, may be used incorrectly and then discarded, or that intrauterine devices (IUDs) and implants may be removed before their life span is realized. This GHSC-PSM measure includes all condoms, IUDs, and hormone (oral, injectable, and implantable) contraceptives delivered over the life of the project, with the conversion factor provided by USAID/MEASURE (see https://www.usaid.gov/what-we-do/global-health/family-planning/couple-years-protection-cyp for details).

Explanatory notes on current data

Data for the project's core global logistics indicators were fully generated using ARTMIS reports. This includes all data for both on-time, in-full (OTIF) and on-time delivery (OTD), cycle time, backlog, framework contracts, and price variance. The Global Supply Chain team is actively using system-generated data on a daily basis.

Delivery data presented in this report reflect orders captured in the system and marked as delivered or agreed to be delivered between April 1 and June 30, 2018. Data were analyzed on July 24, 2018 to account for delivery windows, proof of deliveries being attained, and data quality assessments being conducted. Given that indicator A16, "percentage of backlogged line items," must be calculated two weeks after the reporting period end date, data were analyzed on July 15, 2018 for A16. Because GHSC-PSM continues to clean and update the data in the system daily, as described below, data pulled at a different point in time for the same time period may reflect additional updates. GHSC-PSM will continue to push for timely data entry; however, some degree of data lag is inherent in the global supply chain data system. Due to continuous data quality assessment actions, the figure presented in an annual report may differ slightly from a calculation derived from previously reported data.

During this reporting period, Q3FY18, some noteworthy milestones were reached:
- Three new reports available to ARTMIS users:
    - Country Delivery Totals
    - Country Procurement Totals
    - IDIQ and Task Order Procurement Totals
- End Use Verification survey refinements were piloted in Zambia and Ghana
- National Supply Chain Assessment (NSCA) 2.0
    - Training done at GHSC-PSM April 9-12, 2018 that included international donors, and implementers and government teams
    - NSCA 2.0 Carried out in Uganda
- Regular contributions to reinforce USAID evidence base

Data Quality
GHSC-PSM continues its commitment to providing internal and external stakeholders with the highest possible data quality. This is accomplished through a range of continuous actions specifically designed to identify, validate, and revise incorrect data. Actions include:
1. Ad hoc data quality improvement:
When users identify inaccurate data, they report the necessary changes to the ARTMIS HelpDesk. Progress for resolving data-quality tickets is reviewed twice a week.

2. Data Quality Assessment (DQA):
Each quarter, key data underlying the OTD calculations for line items with a delivery date in the current quarter are validated through two independent mechanisms.

a. Actual delivery date validation
The actual delivery date is the date that GHSC-PSM delivers a line item to the recipient. To assess the quality of this data field in ARTMIS, we surveyed data from each Incoterm group and used lot quality assurance sampling (LQAS) to confirm that the data fields are accurate to >95% (with < 5% α or β errors). If a group does not pass this test, evidence is inspected to confirm the ARTMIS data of each and every line item within that group. If applicable, the original scan of the proof of delivery (PoD) is retrieved, examined, and verified. After each line item was reviewed, we corrected any discrepancies before calculating the reported data.

b. Agreed delivery date (ADD)
The ADD is the date that GHSC-PSM commits to deliver a line item to the recipient. It is established at the time that a requisition order (RO) is approved and is the point of reference for determining if an order was delivered on time. Because the ADD is now system-generated – it is automatically designated according to product specifications and other attributes – it is not subject to input error. However, if an ADD is modified for any reason, this risk is re-introduced. All adjusted ADDs were validated and the following attributes were confirmed: 1) they were only changed for reasons considered valid by USAID, and 2) they were substantiated with the requisite approvals and backup documentation.

This systematic review demonstrated that actual delivery dates and ADDs in ARTMIS are valid (>99%).

Field Office Reporting and Data Validation

Each quarter, the field offices face an expedited data collection, reporting, and analysis schedule. They must submit their indicator data within five working days of the period end. Once the data are transmitted by field offices, the GHSC-PSM headquarters M&E team conduct a systematic review to validate the data before additional analysis and aggregation can be done. Working closely with technical and M&E staff in the field, we ensure that each data point is uniformly high quality and can be harmonized across the project. This schedule allows us to be responsive to the quick turnaround required for appropriate document review and finalization. However, it makes it difficult for teams to digest the results, incorporate evidence, and report on the usage of indicator data in this document. We continue to promote additional feedback measures that will contribute to even greater usage.

Summary of Performance

The following tables include indicator values for performance indicators, presented by quarter, health area, and tracer product, as relevant. These performance indicators assess the outcomes of routine supply chain operations. While the performance on many of these indicators may not be immediately attributable to GHSC-PSM's activities in the short term, all are related to the project's long-term goal of ensuring an uninterrupted supply of health commodities in country public health systems.

We also report on context indicators, providing values by country. With each indicator table, we provide a definition of the indicator, our analysis, and known data limitations. For country performance indicators, targets are set in-country through consultations that include field offices, USAID missions, government counterparts, and project technical staff and leadership. Progress on these indicators, including B1, B2, B3, and C10, will be monitored against the country-level targets and used for management and decision making.

Context Indicators

Context indicators are meant to provide high-level insight into the public health commodity supply chain systems that GHSC-PSM and our partners are working to strengthen. They guide strategic direction for stakeholders (including GHSC-PSM field offices, ministries of health, donors, NGOs, and others) working to improve supply chain performance. GHSC-PSM will routinely monitor these indicators to identify areas where systems strengthening is needed and to assess the effectiveness of system strengthening approaches. With the collective contribution of GHSC-PSM and other key stakeholders, we expect to see improvements in these indicators over time.

The majority of context indicators are compiled from existing in-country data platforms such as LMIS and warehouse management systems, which GHSC-PSM is working to strengthen in many countries to enable governments to more fully use the data for supply chain decision-making. GHSC-PSM compiles context indicator data for all countries in which the project maintains a field office, regardless of the extent of the project's engagement in the country. Therefore, the results in a given country, for a specific point in time, are not solely a consequence of GHSC-PSM's activities, but rather are reflective of the many stakeholders and elements that influence in-country supply chain performance.

Beyond system strengthening activities, these contextual data (including data from the Procurement Planning and Monitoring Report [PPMR], Procurement Planning and Monitoring Report for Malaria [PPMRm], Pipeline, and other platforms, in addition to GHSC-PSM's context indicators) are the basis for the GHSC-PSM-led regional approach to address commodity imbalances across countries. GHSC-PSM works with the international donor community to identify and respond immediately to shortages of life-saving commodities.

Section A: Fiscal Year 2018 Key Performance Overview-IDIQ							
Reporting Period (Quarter) Start Date			**10/01/2017**	**01/01/2018**	**04/01/2018**	**07/01/2018**	**10/01/2017**
Reporting Period (Quarter) End Date			**12/31/2017**	**03/31/2018**	**06/30/2018**	**09/30/2018**	**09/30/2018**
Summary Performance to Date			**FY2018 Q1**	**FY2018 Q2**	**FY2018 Q3**	**FY2018 Q4**	**FY2018**
Global Supply Chain							
A1a.	Percentage of line items delivered on time and in full, within the minimum delivery window – %		49%	67%	60%		
A1b.	Percentage of line items delivered on time, within the minimum delivery window – %		72%	73%	73%		
A3.	Cycle time (average) – # (days per shipment)		212	202	226		
A4.	Inventory turns (average number of times inventory cycles through GHSC-PSM-controlled global facilities) – ratio		Annual Indicator				
A5.	Total landed cost (logistics costs) – %		9%		Semiannual		
A13.	Percentage of batches of product showing nonconformity (out of specification percentage) – %		0.4%	0.2%	0%		
In-Country							
B1.	Stockout rate at SDPs – %		12%	15%	15%		
B2.	Percentage of stock status observations in storage sites where commodities are stocked according to plan, by level in supply system – %		26%	23%	24%		
B3.	SDP reporting rate to the logistics management information system (LMIS) – %		84%	85%	85%		
B8.	Percentage of initially GHSC-PSM-supported supply chain functions carried out by national authorities without external technical assistance – %		**Annual Indicator**				
Cross-cutting							
C2.	Number of people trained – #	TO-Specific Trainings Combined	1,723	4,587	2,318		
		Cross-TO Trainings	1,879	3,015	2,344		
		All Trainings (TO-Specific & Cross-TO)	3,602	7,602	4,662		

Important: Key performance metrics on this page are intended to provide an overall snapshot of the project's performance. They may conceal nuances of TO performance and must be interpreted in light of individual TO performance or granular data.

Section B: Fiscal Year 2018 Key Performance Overview by Task Order

Performance to Date

		IDIQ	Task Order 1					Task Order 2					Task Order 3					Task Order 4				
		FY18 Target*	TO1 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	TO2 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	TO3 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	TO4 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3
Global Supply Chain																						
A1a	Percentage of line items delivered on time and in full, within the minimum delivery window – % *(in parentheses: Total number of line items delivered)*	80%	N/A	35% (985)	50% (1,505)	61% (1,042)	61% (1,240)	N/A	14% (108)	32% (82)	43% (137)	50% (220)	N/A	28% (57)	62% (42)	94% (311)	78% (60)	N/A	100% (1)	80% (15)	70% (10)	67% (15)
A1b	Percentage of line items delivered on time within the minimum delivery window – % *(in parentheses: Total number of ADDs in the quarter)*	80%	N/A	31% (1181)	73% (1,061)	69% (1,013)	75% (1,059)	N/A	19% (77)	59% (66)	46% (145)	63% (218)	N/A	59% (29)	79% (34)	94% (331)	72% (47)	N/A	50% (2)	85% (13)	100% (8)	82% (17)
A2	Percentage of QA processes completed within the total estimated QA lead times - %		N/A					80%	74%	82%	99%	84%	N/A					N/A				
A3	Cycle time (average) – # (days per line item delivered)		158	185	206	212	213	262	313	316	267	296	RDC: 176 Direct Drop: 224	250	RDC: 236 Direct Drop: 217	RDC: 189 Direct Drop: 129	RDC: 193 Direct Drop: 285	N/A	26	190	235	233
A4	Inventory turns (average number of times inventory cycles through GHSC-PSM-controlled global facilities) – ratio		4	3.3	Annual			3	2.0	Annual			3	2.1	Annual			N/A				
A5	Total landed cost (logistics costs) – %	8%	N/A	7%	7%		Semi-Annual	N/A	15%	16%		Semi-Annual	N/A	14%	9%		Semi-Annual	N/A	2%	19%		Semi-Annual
A6a	Absolute percent supply plan error, with variants mean absolute percent error (MAPE) and forecast bias – %	30%	See A6a indicator pages for detailed data for this indicator.																			
A6b	Absolute percent forecast error, with variants mean absolute percent error (MAPE) and forecast bias – %	35%	See A6b indicator pages for detailed data for this indicator.																			
A7	Percentage of line items imported using a temporary registration waiver (temporary waiver percentage) – %		Not required	N/A	N/A	N/A	N/A	Not required	N/A	N/A	N/A	N/A	Not required	65%	N/A	N/A	N/A	Not required	N/A	N/A	N/A	N/A
A8	Average percentage of shelf life remaining for warehoused commodities, weighted by the value of each commodity's stock (product at risk percentage) – %		78%	79%	82%	81%	81%	70%	61%	74%	74%	70%	75%	75%	81%	84%	86%	N/A				

A2 (QA lead times) is not reported for TO1, TO3, or TO4. Reason: QA processes for these TOs are managed by the GHSC-QA project.

A7 (temporary waiver percentage) is not reported. Reason: The project is still operationalizing sources and indicator calculations.

****Targets reflect anticipated project performance by end of FY18 (September 30, 2018).***

Performance to Date

Indicator			IDIQ	Task Order 1					Task Order 2					Task Order 3					Task Order 4					Cross-Cutting				
			FY18 Target*	TO1 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	TO2 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	TO3 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	TO4 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3
A10	Percentage of product procured using a framework contract (framework contract percentage) – %			75%	74%	71%	70%	65%	30%	11.0%	24%	29%	37%	95%	98%	99%	99%	100%	55%	98%	100%	100%	100%	N/A				
A12	Percentage of price variance between the median unit price paid during the quarter and the median unit price paid over the life of the project – %			See A12 indicator page for detailed data for this indicator. Target not required.																								
A13	Percentage of batches of product for which the final result is showing nonconformity (out of specification percentage) – %			N/A					<1%	2%	0.4%	0.2%	0.0%	N/A					N/A					N/A				
A14	Average vendor rating score – rating	Suppliers		Not required	87%	N/A	N/A	N/A	Not required	94%	N/A	N/A	N/A	Not required	94%	N/A	N/A	N/A	Not required	N/A	N/A	N/A	N/A	Not required				
		Laboratory QA								46%	77%	86%	80%															
		Freight forwarders																							64%	76%	73%	76%
A15	Percentage of QA investigation reports submitted within 30 calendar days of outcome determination (QA investigation report submission) – %			N/A					90%	67%	100%		Semi-Annual	N/A					N/A					N/A				
A16	Percentage of backlogged line items – %		<5%	N/A	N/A	5%	4%	2%	N/A	N/A	6%	7%	7%	N/A	N/A	1%	2%	2%	N/A	N/A	10%	0%	3%	N/A				
In-Country Performance and Sustainability																												
B1	Stockout rate at SDPs – %			Set at the country level	5%	6%	9%	9%	Set at the country level	19%	13%	16%	16%	Set at the country level	29%	13%	18%	17%	Set at the country level	N/A				N/A				
B2	Percentage of stock status observations in storage sites where commodities are stocked according to plan, by level in supply system – %				35%	33%	34%	36%		21%	25%	24%	28%		14%	19%	15%	16%		30%	29%	13%	16%	N/A				
B3	SDP reporting rate to the logistics management information system (LMIS) – %				90%	83%	88%	91%		83%	83%	89%	89%		80%	79%	82%	80%		78%	72%	80%	81%	N/A				
B4	Average rating of in-country data confidence at the central, subnational, and SDP levels – rating (0-9 scale)			Not required	5.4	Annual			Not required	5.9	Annual			Not required	6.3	Annual			Not required	5.7	Annual			N/A				

A9 and A11 have been dropped from the GHSC-PSM M&E plan with approval from USAID.

A13 (out of specification percentage) is not reported for TO1, TO3, or TO4. Reason: QA processes for these TOs are managed by the GHSC-QA project.

A14 (average vendor rating score) is not reported for QA vendors for TO1, TO3, or TO4. Reason: QA processes for these TOs are managed by the GHSC-QA project. Supplier scorecard is undergoing revisions; data to be reported in a future report.

A15 (QA investigation report submission) is not reported for TO1, TO3, or TO4. Reason: QA processes for these TOs are managed by the GHSC-QA project.

****Targets reflect anticipated project performance by end of FY18 (September 30, 2018).***

Performance to Date

Indicator		Task Order 1					Task Order 2					Task Order 3					Task Order 4					Cross-Cutting				
		TO1 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	TO2 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	TO3 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	TO4 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3
B5	Percentage of required annual forecasts conducted – %	Annual Indicator Targets: ARV 87%, RTK 88%, Condoms 88%, Lab (HIV diagnostic) 85%, VMMC 60%, Malaria 86%, PRH 86%, MNCH 67%																								
B6	Percentage of required supply plans submitted to GHSC-PSM during the quarter – %	See B6 indicator page for detailed data for this indicator. Targets: ARV 87%, RTK 88%, Condoms 88%, Lab (HIV diagnostic) 85%, VMMC 60%, Malaria 86%, PRH 86%, MNCH 67%																								
B7	Percentage of total spent or budgeted on procurement of commodities for public sector services by the government, the U.S. government, the Global Fund, or other sources – %	Annual Indicator. Target not required.																								
B8	Percentage of initially GHSC-PSM-supported supply chain functions carried out by national authorities without external technical assistance – %	Annual Indicator. Targets set at the country level.																								
B9	Supply chain technical staff turnover rate – ratio	Annual Indicator. Target not required.																								
B10	Percentage of countries that have a functional logistics coordination mechanism in place – %	Not required	80%	Annual			Not required	92%	Annual			Not required	93%	Annual			Not required	70%	Annual			N/A	N/A	Annual		
B11	Percentage of leadership positions in supply chain management that are held by women (in countries where GHSC-PSM is providing technical assistance related to workforce development) – %	Not required	53%	Annual			Not required	33%	Annual			Not required	41%	Annual			Not required	46%	Annual			N/A	N/A	Annual		
B12	Mean absolute percent consumption forecast error, with forecast bias variant – %	Annual Indicator. Target not required.																								
C1	Number of innovations (including operations research studies) that were developed, implemented, or introduced and are related to the health commodity market or supply chain best practices – #	Not required	4	3	1	2	Not required	1	1	1	1	Not required	2	2	3	2	Not required	0	0	1	0	N/A	5	3	4	4
C2	Number of people trained – #	Not required	1,056	1,362	505	725	Not required	430	37	2,146	1,028	Not required	14	99	1,936	565	Not required	0	225	0	0	N/A	6,253	1,879	3,015	2,344

C3 has been dropped from the GHSC-PSM M&E plan with approval from USAID.

****Targets reflect anticipated project performance by end of FY18 (September 30, 2018).***

Performance to Date

Indicator		Task Order 1					Task Order 2					Task Order 3					Task Order 4					Cross-Cutting				
		TO1 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	TO2 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	TO3 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	TO4 FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3	FY18 Target*	2017 Q4	2018 Q1	2018 Q2	2018 Q3
C4	Percentage of required files submitted to BI&A in the reporting period – %	N/A					N/A					N/A					N/A					TBD	N/A	77%	88%	92%
C5	Percentage of required files timely submitted to BI&A in the reporting period – %	N/A					N/A					N/A					N/A					TBD	N/A	77%	86%	92%
C6	Percentage of complete submissions reported to BI&A in the reporting period – %	N/A					N/A					N/A					N/A					TBD	N/A			
C7a	Percentage of product lost due to expiry while under GHSC-PSM control (product loss percentage – Expiry) – %	See C7a indicator page for detailed data for this indicator. Target not required.																								
C7b	Percentage of product lost due to theft, damage, or other causes while under GHSC-PSM control (product loss percentage – theft, damage, other) – %	See C7b indicator page for detailed data for this indicator. Target not required.																								
C8	Number of global advocacy engagements in support of improved availability of essential health commodities – #	Not required	4	4		Semi-Annual	Not required	3	3		Semi-Annual	Not required	6	10		Semi-Annual	Not required	6	0		Semi-Annual	Not required	13	5		Semi-Annual
C10	Percentage of GHSC-PSM-procured or supported molecular instruments that remained functional during the reporting period – %	Set at the country level	88%	89%	72%	68%	N/A					N/A					N/A					N/A				

C6 (accurate submissions to BI&A) is not reported at this time. Reason: The project is still operationalizing sources and indicator calculations.

C9 has been dropped from the GHSC-PSM M&E plan with approval from USAID.

****Targets reflect anticipated project performance by end of FY18 (September 30, 2018).***

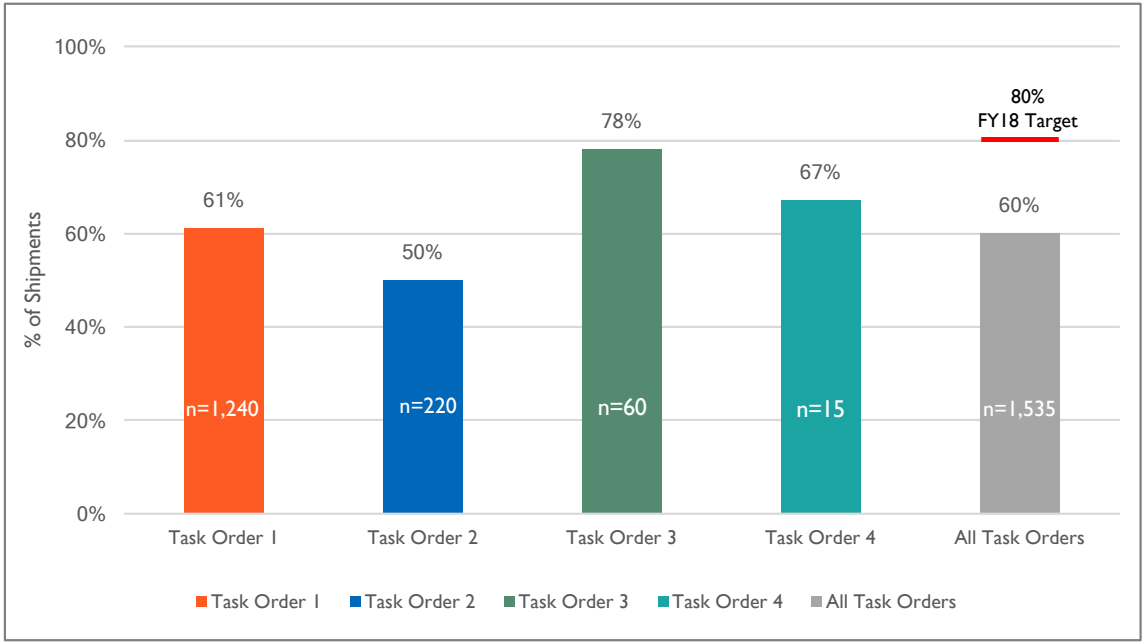
A1a. Percentage of line items delivered on time and in full, within the minimum delivery window

Measure Definition

Numerator: Number of line items delivered to the recipient on time and in full during the quarter.
Denominator: Total number of line items delivered to the recipient during the quarter.
Purpose: On time, in full (OTIF) is a measure of supply chain reliability. This indicator depicts the degree to which the right products are delivered on time (defined for the project as no more than 14 days before or 7 days after the agreed delivery date) and in the right quantity, as specified by the customer.

Task Order	FY18 Target	Achievement FY2018 Q3	Achievement Year to Date*
TO1	N/A	61%	58%
TO2	N/A	50%	46%
TO3	N/A	78%	89%
TO4	N/A	67%	71%
All TOs	80%	60%	60%

Indicator Performance FY2018 Q3



Analysis

- Three factors drove OTIF to decrease to 60 percent in Q3 2018 and diverge slightly from OTD. 1) GHSC-PSM continued to deliver a significant volume of back log orders and these orders count as not on time and in full. 2) An uptick in line items delivered on-time but not in-full in Q3. The project split some orders to ensure that at least partial orders reached central warehouses on time. 3) Line items with an agreed delivery date at the end of the quarter (the last week of June) were delivered in early July 2018. These deliveries count towards Q3 OTD but Q4 for OTIF (as OTIF denominator based on delivery date not agreed delivery date).

Data Notes

- Line items are considered on time if they are delivered between 14 calendar days before and up to 7 calendar days after the agreed delivery date.
- All male and female condom and lubricant deliveries are reported under TO1.
- Targets reflect anticipated project performance by end of FY18 (September 30, 2018)
- *Year to Date performance is calculated using all data currently available, which may include data that was not available at the time of reporting for previous quarters. Current year to date figures may differ slightly from a calcuation derived from previously reported data.

A1a. Percentage of line items delivered on time and in full, within the minimum delivery window (tracer product category)

HIV	Total number of line items delivered	Number of line items delivered on time and in full	On time in full (%)
Task Order 1	1,240	758	61%
Adult ARVs	131	81	62%
Condoms	42	28	67%
Food and WASH	4	3	75%
HIV RTK			
Laboratory	760	478	63%
Other Non-pharma	125	71	57%
Other Pharma	68	31	46%
Other RTK	7	4	57%
Pediatric ARVs	72	41	57%
Prefab			
Vehicles and Other Equipment	5	4	80%
VMMC	26	19	73%

Malaria	Total number of line items delivered	Number of line items delivered on time and in full	On time in full (%)
Task Order 2	220	109	50%
ACTs	77	63	82%
Laboratory	34	7	21%
LLINs	29	6	21%
mRDTs	25	14	56%
Other Non-Pharma	11	1	9%
Other Pharma	15	10	67%
Severe Malaria Meds	22	6	27%
Sulphadoxine-pyrimethamine	7	2	29%

PRH - Method Level	Total number of line items delivered	Number of line items delivered on time and in full	On time in full (%)
Task Order 3	60	47	78%
Combined Oral Contraceptives	10	5	50%
Copper-bearing Intrauterine Devices			
Emergency Oral Contraceptives			
Implantable Contraceptives	11	10	91%
Injectable Contraceptives	13	8	62%
Progestin-only Pills	2	2	100%
Standard Days Method			
All Other TO3 Products	24	22	92%

Maternal and Child Health	Total number of line items delivered	Number of line items delivered on time and in full	On time in full (%)
Task Order 4	15	10	67%
Laboratory			
Other Non-pharma	7	9	78%
Other Pharma	6	3	50%

Blank rows indicate that no line items for these product categories were delivered this quarter.

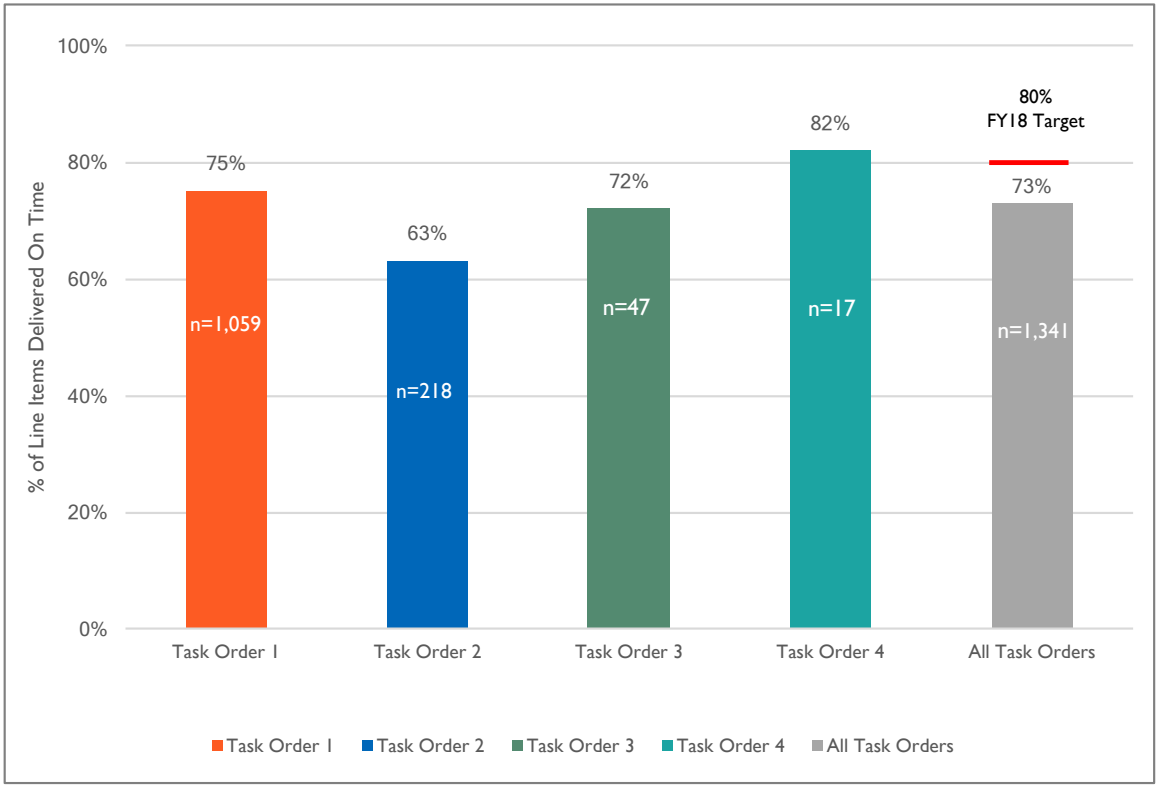
A1b. Percentage of line items delivered on time, within the minimum delivery window

Measure Definition

Numerator: Number of line items with an agreed delivery date during the quarter that were delivered to the recipient on time.
Denominator: Total number of line items with an agreed delivery date during the quarter.
Purpose: On time delivery (OTD) is an essential, industry-standard measure of supply chain reliability. It reflects the extent to which customers can be confident that their order will arrive at the right time, defined for the project as no more than 14 days before or 7 days after the agreed delivery date.

Task Order	FY18 Target	Achievement FY2018 Q3	Achievement Year to Date*
TO1	N/A	75%	72%
TO2	N/A	63%	57%
TO3	N/A	72%	91%
TO4	N/A	82%	87%
All TOs	80%	73%	73%

Indicator Performance FY2018 Q3



Analysis

- On-time delivery performance has remained steady over the course of FY2018, staying at 73 percent overall for Q3. Volume of commitments also increased for all task orders except TO3 (which had seen an artificial spike in Q2 due to Ebola orders).
- Task Order 2 saw a signifcant improvement from the previous quarter, rising from 46 to 63 percent. Rates for ACTs, mRDTs, and severe malaria medicines were all above 80 percent for Q3.
- Task Order 1 also improved, from 69 to 75 percent. For adult ARVs specifically, performance climbed from 57 percent in Q2 to 77 percent in Q3. Pediatric ARVs and condoms also performed above 80 percent this quarter.
- The project has identified three main causes for orders that were not delivered on time: 1) delivery date quoted to the recipient was set too short to meet actual expected lead times, per the Order Promise Tool; 2) delays in releasing orders to suppliers after client approval, and 3) supplier delays in making goods available for pick up. Teams conducted root cause analysis on late orders at the end of each month and identified appropriate corrective or preventive measures. This continual improvement process will be conducted on an ongoing basis as the project drives toward its OTD target.

Data Notes

- Line items are considered on time if they are delivered between 14 calendar days before and up to 7 calendar days after the agreed delivery date.
- All male and female condom and lubricant deliveries are reported under TO1.
- Targets reflect anticipated project performance by end of FY18 (September 30, 2018).
- *Year to Date performance is calculated using all data currently available, which may include data that were not available at the time of reporting for previous quarters. Current year-to-date figures may differ slightly from a calcuation derived from previously reported data.

A1b. Percentage of line items delivered on time, within the minimum delivery window (tracer product category)

HIV	Total number of line items with ADDs in the quarter	Number of line items with ADDs in the quarter delivered on time	On Time Delivery (%)
Task Order 1	1,059	791	75%
Adult ARVs	117	90	77%
Condoms	36	29	81%
Food and WASH	4	4	100%
HIV RTK			
Laboratory	651	475	73%
Other Non-pharma	122	89	73%
Other Pharma	39	31	79%
Other RTK	5	5	100%
Pediatric ARVs	55	45	82%
Prefab			
Vehicles and Other Equipment	5	4	80%
VMMC	25	19	76%

Malaria	Total number of line items with ADDs in the quarter	Number of line items with ADDs in the quarter delivered on time	On Time Delivery (%)
Task Order 2	218	137	63%
ACTs	88	70	80%
Laboratory	34	7	21%
LLINs	37	16	43%
mRDTs	23	22	96%
Other Non-Pharma	8	1	13%
Other Pharma	17	11	65%
Severe Malaria Meds	8	7	88%
Sulphadoxine-pyrimethamine	3	3	100%

PRH - Method Level	Total number of line items with ADDs in the quarter	Number of line items with ADDs in the quarter delivered on time	On Time Delivery (%)
Task Order 3	47	34	72%
Combined Oral Contraceptives	10	6	60%
Copper-bearing Intrauterine Devices			
Emergency Oral Contraceptives			
Implantable Contraceptives	13	10	77%
Injectable Contraceptives	10	8	80%
Progestin-only Pills	3	2	67%
Standard Days Method	2	0	0%
All Other TO3 Products	9	8	89%

Maternal and Child Health	Total number of line items with ADDs in the quarter	Number of line items with ADDs in the quarter delivered on time	On Time Delivery (%)
Task Order 4	17	14	82%
Laboratory			
Other Non-pharma	9	7	78%
Other Pharma	8	7	88%

Blank rows indicate that no line items for these product categories had ADDs in this quarter.

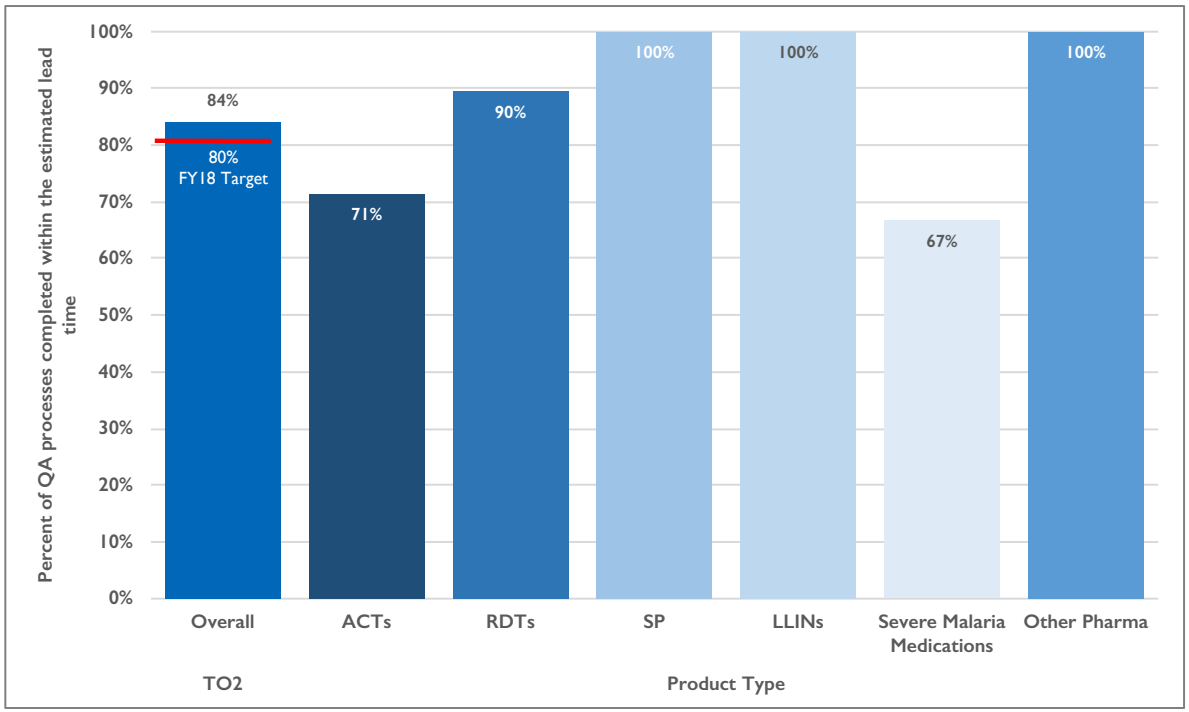
A2. Percentage of quality assurance (QA) processes completed within the total estimated QA lead times

Measure Definition

Numerator: Number of consignments complying with the pre-established QA lead times during the quarter.
Denominator: Total number of consignments requiring QA processes that were cleared for shipment during the quarter.
Purpose: This indicator reports on the timeliness of completion of quality assurance (QA) processes. It gives insight into how well the project is managing its QA subcontracts and the impact of QA procedures on the overall product procurement and delivery cycle time.

Task Order	FY18 Target	Achievement FY2018 Q3	Achievement Year to Date
TO1	N/A	N/A	N/A
TO2	80%	84%	88%
TO3	N/A	N/A	N/A
TO4	N/A	N/A	N/A

Indicator Performance FY2018 Q3



Analysis

- Across TO2 consignments requiring QA processes, 84 percent were completed within the designated lead times. This is in line with the target of 80 percent compliance with lead times and was achieved even as consignment volume increased. The 82 consignments this quarter represents a 24 percent increase in volume from Q2, and a 67 percent increase from Q1.
- For ACTs, lab capacity was strained due to a large number of shipments of the same products with similar Goods Availability Dates. Products were tested in two labs simultaneously to speed up testing. GHSC-PSM TO2 QA is working with the procurement team to prioritize orders according to their ADDs, and to highlight the lab constraints that arise when multiple orders of the same product are required at the same time.
- PMI has also reviewed and approved risk profiles for three key ACT products, which will decrease the percentage of batches that must be tested for these products. The new approach will go into effect in August and is expected to result in time savings.
- Decreased performance for severe malaria medicines was driven by artesunate suppositories, which experienced minor delays that are not expected to result in late deliveries.

Data Notes

- Total number of consignments requiring QA processes that were cleared for shipment this quarter is 82. Consignment is defined as a shipment of commodities, including one or more line items. QA process transactions are managed at the consignment level, regardless of the number of line items in the consignment.
- Exceptional procedures outside of routine QA testing and clearance have been excluded from the indicator. This includes consignments requiring QA investigations, method transfers, non-PMI procurements, post-shipment quality control, and LLIN shipments requiring witnessing of loading and/or sealing of goods. Four consignments were excluded this quarter for these reasons.
- All QA activities for TO2 are conducted by GHSC-PSM. All QA activities for TO1, TO3, and TO4 are managed by the USAID GHSC-QA contract. GHSC-QA may be contacted for data related to these TOs.
- Target reflects anticipated average project performance for the full 2018 fiscal year (October 2017-September 2018).

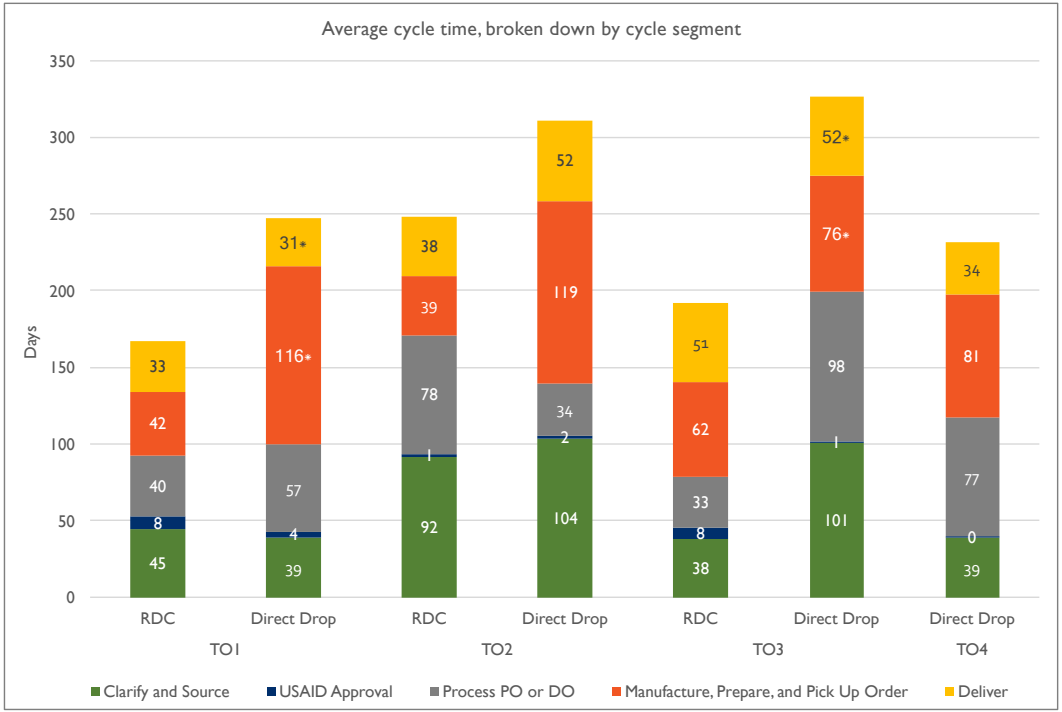
A3. Cycle time (average) - # (days per line item delivered)

Measure Definition

Numerator: Sum of cycle time for all line items delivered during the quarter.
Denominator: The count of all line items delivered during the quarter.
Purpose: Cycle time is the number of days between when a customer order is submitted and when it is filled. It reflects the responsiveness of the GHSC-PSM supply chain and how quickly customer orders are being filled.

Task Order	FY18 Target	Achievement (All Modes) FY2018 Q3	Achievement (All Modes) Year to Date*
TO1	158	213	209
TO2	262	296	290
TO3	176 (RDC); 244 (direct drop)	193 (RDC) 285 (DD)	201 (RDC) 149 (DD)
TO4	N/A	233	217
All TOs	N/A	226	212

Indicator Performance FY2018 Q3



Analysis

- Overall average cycle time increased this quarter, from 202 to 226 days per line item delivered. TO4 had a slight drop, from 235 to 233, but all other task orders and fulfillment methods saw increases.
- Despite these increases, overall actual cycle time is shorter than "projected" cycle times (based on the time from order entry to Agreed Delivery Date). This has been observed for two quarters and is in keeping with the project's sustained on-time delivery performance.
- The greatest increase was in Task Order 2, which rose from 267 to 296 days in Q3. This current performance still represents a 5 percent reduction in cycle time from Q1.
- Cycle times have been increasing for the "Manufacture, Prepare and Pick Up" segment. This segment includes manufacture time with the supplier, order preparation time at the RDCs, and pick up time by 3PL providers. It may also include QA process time. If orders are placed early due to good planning processes, and released expediently to suppliers far in advance of the manufacture lead time, this segment may also show longer cycle times.
- In addition to the routine cycle segments shown here, the project added 45 items to the catalog as a result of customer requests for new products. The average time for a new product to be added to the catalog was 15 days. Several products were requested for unique cases and required additional time to confirm eligibility with USAID.
- Several malaria RDT line items transited through the RDC after being fulfilled directly from the supplier, due to some country and product specificities. These items had a longer average cycle time than other direct drop mRDTs, which was planned and accounted for during order placement, resulting in on time deliveries.

Data Notes

- **Due to system requirements, items that are fulfilled via direct drop but then transit through the RDC are tracked and reported as RDC fulfillments. This occurs most often on TO2 and occastionally on TO3.**
- Additional milestones and cycle segments are defined in the GHSC-PSM M&E plan. Data for additional segments will be included as the quality and completeness of ARTMIS milestone data improve. At this time, less than 60 percent of line items delivered in the quarter have data available for RO validation and actual goods available date (GAD) milestones. The project has recently changed its systems and policies to improve the quality and capture of actual GADs, which will allow improved reporting in future quarters. These milestones will be excluded from cycle time reporting until data completeness meets this threshold, per the GHSC-PSM M&E plan.
- Task Order 2 quality assurance process segment cycle time (time from Actual GAD to QA Completed Date) could not be calculated this quarter because the start and ending milestones do not meet the 60 percent completeness threshold noted above. However, per the results of indicator A2, 84 percent of QA processes were completed within the pre-established lead times.
- * The K+N LMIS captures and reports logistics milestone dates for line items picked up and delivered by 3PLs. In cases where suppliers (not 3PLs) are responsible for some or all delivery processes (i.e. "C" and "D" Incoterms), GHSC-PSM does not typically receive data on logistics milestone dates. Without pick up dates, the "Manufacture, Prepare, and Pick Up" and "Deliver" segments cannot be calculated for these line items. TO1 and TO3 Direct Drop had large quantities of these line items this quarter, which means that these segments are calculated and reported above with less than 60 percent completeness for each segment, indicated with a (*). Data for these segments is 55 percent complete for TO1 Direct Drop line items and 47 percent complete for TO3 Direct Drop line items.
- Please note that overall cycle time data presented in this report are inclusive of all days from order entry date to actual delivery date, including all manufacture time and any time an order spends on hold. The MIS and GSC teams are working on procedures to apply hold flags to line items in ARTMIS when appropriate, so that hold time may be excluded from future cycle time calculations, per the project M&E plan. The M&E plan also specifies that a variation of cycle time will be presented with the manufacturing segment (PO release date - actual goods availability date) removed. This segment has not been removed at this time due to incomplete data for GADs, as noted above. Once data completeness for this milestone has improved, the project will present a version of overall cycle time less manufacture time, per the M&E plan.
- Data on overall cycle start and end dates are complete for all line items delivered this quarter. However, internal milestone data are not complete for some line items (as with the GAD example mentioned previously). In these cases, line items with incomplete data are excluded from the segment averages. For this reason, the sum of all segments may not be equal to the overall average per task order and fulfillment channel.
- *Year to Date performance is calculated using all data currently available, which may include data that were not available at the time of reporting for previous quarters. Current year-to-date figures may differ slightly from a calculation derived from previously reported data.
- Targets reflect anticipated project performance by end of FY18 (September 30, 2018).

A3. Cycle time (average) - Tracer product category

HIV	All channels and modes	Air		Sea		Land		Multiple	
		Warehouse Fulfillment	Direct Drop Fulfillment	Warehouse Fulfillment	Direct Drop Fulfillment	Warehouse Fulfillment	Direct Drop Fulfillment	Warehouse Fulfillment	Direct Drop Fulfillment
# of Line Items Delivered	1,240	17	651	19	60	12	478	1	2
Task Order 1	213	121	241	213	242	170	176	182	340
Adult ARVs	239	119	250	156	269	151		182	445
Condoms	244	361		234	244				
Food and WASH	210				208		212		
HIV RTK									
Laboratory	200		223		236		178		
Other Non-pharma	191		227		238		157		
Other Pharma	313	61	318		334		350		
Other RTK	243		243						
Pediatric ARVs	255	126	274	163	184	63			235
Prefab									
Vehicles and Other Equipment	109						109		
VMMC	172	55	153	211	207	195	135		

Malaria	All channels and modes	Air		Sea		Land	Multiple
		Warehouse Fulfillment	Direct Drop Fulfillment	Warehouse Fulfillment	Direct Drop Fulfillment	Direct Drop Fulfillment	Direct Drop Fulfillment
# of Line Items Delivered	220	50	138		26	3	3
Task Order 2	296	249	305		337	109	504
ACTs	284	277	291				
Laboratory	273		273				
LLINs	368		690		339		504
mRDTs	233	324	215				
Other Non-Pharma	226		269		277	109	
Other Pharma	205	53	307				
Severe Malaria Meds	441		441				
Sulphadoxine-pyrimethamine	329	53	375				

PRH - Method Level	All channels and modes	Air		Sea		Multiple
		Warehouse Fulfillment	Direct Drop Fulfillment	Warehouse Fulfillment	Direct Drop Fulfillment	Warehouse Fulfillment
# of Line Items Delivered	60	11	26	19	3	1
Task Order 3	239	176	275	202	311	470
Combined Oral Contraceptives	208	102		218		470
Copper-bearing Intrauterine Devices						
Emergency Oral Contraceptives						
Implantable Contraceptives	276	198	508	149	339	
Injectable Contraceptives	207	223		199	254	
Progestin-only Pills	198			198		
Standard Days Method						
All Other TO3 Products	256		256			

Maternal and Child Health	All channels and modes	Air	Sea	Land
		Direct Drop Fulfillment	Direct Drop Fulfillment	Direct Drop Fulfillment
# of Line Items Delivered	15	9	6	
Task Order 4	233	226	243	
Other Non-Pharma	176	170	184	
Other Pharma	318	297	361	

Blank rows indicate that no line items for these product categories were delivered this quarter.

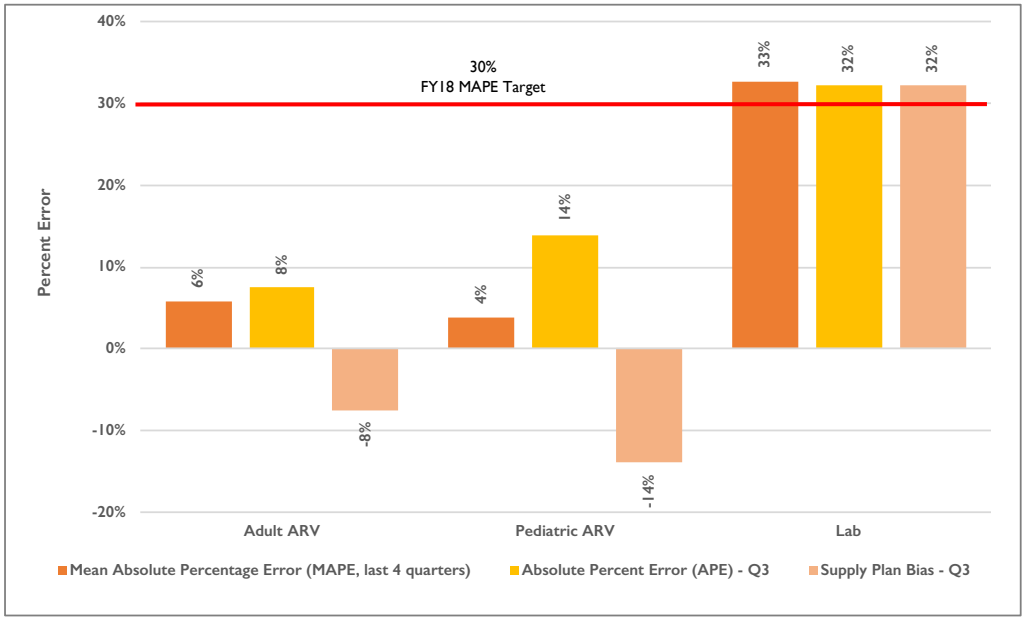
A6a. Absolute percent supply plan error, with variants mean absolute percent error (MAPE) and supply plan bias

Measure Definition

Numerator: Absolute value of the differences between the actual quantities with requested delivery dates during the quarter minus the quantities planned for delivery according to country supply plans.
Denominator: Sum of the actual quantities with requested delivery dates during the quarter.
See Data Notes below for variant definitions.
Purpose: This indicator looks at how well country commodity supply plans match the commodities which were actually delivered. It is used to assess the accuracy of country supply plans and to promote efficient supply management practices.

		FY2018 Q3		Last Four Quarters	
Product	FY18 Target: MAPE	Supply plan error (%)	Supply plan bias (%)	MAPE (%)	Supply plan bias (%)
Adult ARV	<30%	8%	-8%	6%	6%
Pediatric ARV	<30%	14%	-14%	4%	-4%
Lab	<30%	32%	32%	33%	33%

Indicator Performance FY2018 Q3



Analysis

- Mean absolute supply plan error (MAPE) for adult and pediatic ARVs over the last four quarters has improved and is well within the targeted range of less than 30 percent. For lab products, performace is slightly outside the target, at 33 percent.
- Both adult and pediatric ARVs were overforecasted this quarter. A large order for Tanzania was planned for June, but the actual order was split into deliveries in both Q3 and Q4.
- Variance between forecasts and orders for lab products is due to two countries placing unplanned orders, as well as exclusions of orders for some consumable items from some plans.
- Global Supply Chain's Demand Planning team and Health Systems Strengthening's FASP team continue to work cross-functionally to streamline the review process. The teams continue to work to reduce manual data cleaning through automated data alignment. During the review process itself, discrepancies identified between plans and order are incorporated into technical reviews and clarifications with the field offices. The field office teams respond to this feedback loop and take recommended actions.

Data Notes

- Planned quantities are drawn from an aggregation of country supply plans submitted in the prior quarter, including only the quanties that are forecasted to be procured through GHSC-PSM. Actual quantities are derived based on the requested delivery dates for products included in customer ROs submitted to ARTMIS.
- See GHSC-PSM's IDIQ Monitoring and Evaluation Plan for complete details on indicator defintions and calculations. Simplifed versions of the definitions are provided below for reference:

Supply plan error: $$\frac{|(Actual\ ordered\ quantity) - (Planned\ quantity)|}{(Actual\ ordered\ quantity)}$$

Supply plan bias: $$\frac{(Actual\ ordered\ quantity) - (Planned\ quantity)}{(Actual\ ordered\ quantity)}$$

MAPE: $$\frac{|(Sum\ of\ actual\ ordered\ quantity\ in\ last\ 4\ quarters) - (Sum\ of\ planned\ quantity\ in\ last\ 4\ quarters)|}{(Sum\ of\ actual\ ordered\ quantity\ in\ last\ 4\ quarters)}$$

Supply plan bias (last four quarters): $$\frac{(Sum\ of\ actual\ ordered\ quantity\ in\ last\ 4\ quarters) - (Sum\ of\ planned\ quantity\ in\ last\ 4\ quarters)}{(Sum\ of\ actual\ ordered\ quantity\ in\ last\ 4\ quarters)}$$

Supply plan bias definitions are under review and may be refined in the future.

- Negative supply plan bias indicates fewer products requested compared to the forecast. Positive supply plan bias indicates more products ordered than forecasted.
- At the present time, GHSC-PSM does not measure supply plan accuracy for TO2 or TO4. Forecast accuracy (indicator A6b) is measured for TO3.
- Targets reflect anticipated project performance on the four-quarters MAPE indicator by end of FY18 (September 30, 2018).

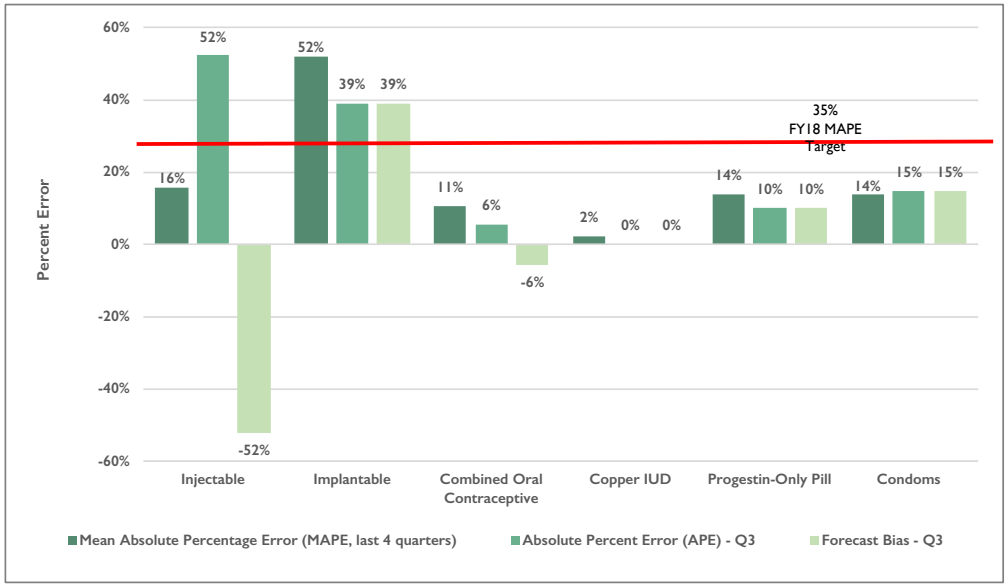
A6b. Absolute percent forecast error, with variants mean absolute percent error (MAPE) and forecast bias

Measure Definition

Numerator: Absolute value of the differences between the actual quantities with requested delivery dates during the quarter minus the quantities planned for delivery according to the global demand forecast.
Denominator: Sum of the actual quantities with requested delivery dates during the quarter.
See Data Notes below for variant definitions.
Purpose: This indicator looks at how well country global demand forecasts for commodities (based on the country supply plan together with variables such as country order history, data from planning groups, and global market dynamics) match the commodities actually delivered. It will be used to assess the accuracy of the global demand forecasts and promote efficient supply management practices.

Product	Target Annual	FY2018 Q3		Last Four Quarters	
	FY18 Target: MAPE	Absolute percent error (%)	Forecast bias (%)	MAPE (%)	Forecast bias (%)
Injectable	<35%	52%	-52%	16%	16%
Implant	<35%	39%	39%	52%	52%
Combined Oral	<35%	6%	-6%	11%	11%
Copper IUD	<35%	0%	0%	2%	-2%
Progestin Pill	<35%	10%	10%	14%	-14%
Condoms	<35%	15%	15%	14%	14%

Indicator Performance FY2018 Q3



Analysis

- MAPE over the last four quarters is within the targeted range for five out of six products for which GHSC-PSM develops a global demand forecast. The one product outside the range is implants, which have been underforcasted for several quarters.
- Oral contraceptives and IUDs had strong performance this quarter due to a lack of new demand, and minimal shifts in order quantity or Requested Delivery Dates on actual orders placed. Overforecast of injectables this quarter was driven mainly by a reduction in one order quantity due to budget constraints.
- Three-month injectable contraceptives and one-rod implants are both facing global supply constraints. The Coordinated Supply Planning (CSP) Group is managing the allocation of product to countries, so GHSC-PSM is managing expectations with countries by recommending delays in RDD or partial quantities. These measures should help to improve the forecast accuracy for these products.

Data Notes

- Forecasted or planned quantities are drawn from the GHSC-PSM global demand forecasts for each product, which are based on an aggregation of country supply plans submitted in the prior quarter and additional inputs, such as country order history, data from coordinated planning groups, and global market dynamics indicators. Actual quantities are derived based on the requested delivery dates for products included in customer ROs submitted to ARTMIS.
- See GHSC-PSM's IDIQ Monitoring and Evaluation Plan for complete details on indicator definitions and calculations. Simplified versions of the definitions are provided below for reference:

Absolute percent error: $$\frac{|(Actual\ ordered\ quantity) - (Planned\ quantity)|}{(Actual\ ordered\ quantity)}$$

Forecast bias: $$\frac{(Actual\ ordered\ quantity) - (Planned\ quantity)}{(Actual\ ordered\ quantity)}$$

MAPE: $$\frac{|(Sum\ of\ actual\ ordered\ quantity\ in\ last\ 4\ quarters) - (Sum\ of\ planned\ quantity\ in\ last\ 4\ quarters)|}{(Sum\ of\ actual\ ordered\ quantity\ in\ last\ 4\ quarters)}$$

Forecast bias (last four quarters): $$\frac{(Sum\ of\ actual\ ordered\ quantity\ in\ last\ 4\ quarters) - (Sum\ of\ planned\ quantity\ in\ last\ 4\ quarters)}{(Sum\ of\ actual\ ordered\ quantity\ in\ last\ 4\ quarters)}$$

Forecast bias definitions are under review and may be refined in the future.

- Negative forecast bias indicates fewer products requested compared to the forecast. Positive forecast bias indicates more products ordered than forecasted.
- At the present time, GHSC-PSM does not create demand forecasts for TO2 or TO4. Supply plan error (indicator A6a) is measured for TO1.
- Targets reflect anticipated project performance on the four-quarters MAPE indicator by end of FY18 (September 30, 2018).

A8. Average percentage of shelf life remaining for warehoused commodities, weighted by the value of each commodity's stock (product at risk percentage)

Measure Definition

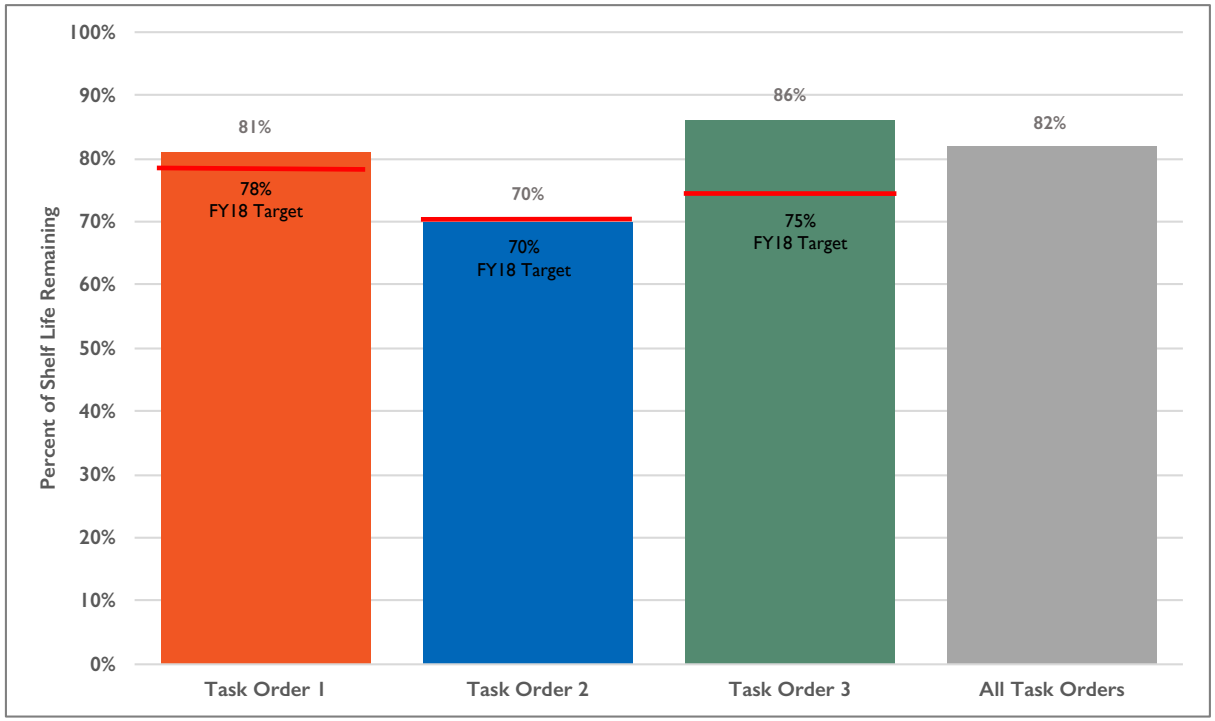
Numerator: Percentage of shelf life remaining at the end of the quarter, weighted by value of commodities, summed across all products.

Denominator: Total value of commodities, summed across all products, at the end of the quarter.

Purpose: This indicator, a measure of warehouse efficiency at GHSC-PSM regional distribution centers (RDCs) or stockpiles, can be used to gauge the amount of product that is at risk of expiration in a specified time. The information it provides helps maximize the efficiency of product turnover.

Task Order	FY18 Target	Achievement FY2018 Q3	Achievement Year to Date
TO1	78%	81%	81%
TO2	70%	70%	73%
TO3	75%	86%	84%
TO4	N/A	N/A	N/A
All TOs	NA	82%	82%

Indicator Performance FY2018 Q3



Analysis

- Shelf life remained consistent from Q2, with overalls percetange the same (TO1), slightly increased (TO3), and slighly decreased (TO2).
- Task Order 2 experienced a decrease in shelf life during the quarter. SPAQ, a commodity not reguarly maintained in the RDCs, was ordered and subsequently cancelled. Additionally, the product is still on QA hold, which inhibits PSM from moving the stock to other potential buyers.
- Task Order 3 shelf life remainig increased slightly from quarter 2, rising from 84% to 86%. Task Order 3 also increased inventory during the quarter as well by $3.5 million.

Data Notes

- Total value of stock on hand as of June 30, 2018 is as follows: Task Order 1 - $18,917,201. Task Order 2 - $2,826,672. Task Order 3 - $ 15,022,742.
- Task Order 1 stock on hand includes all condoms. No inventory is kept for Task Order 4.
- Some expiries for Task Order 1 occurred this quarter. These quantities are excluded from the numerator and denominator of this indicator, as this stock was not available for allocation at the end of the quarter. See indicator C7a (percent of product loss due to expiry) for reporting on these expirations.
- Targets reflect anticipated project performance by end of FY18 (September 30, 2018).

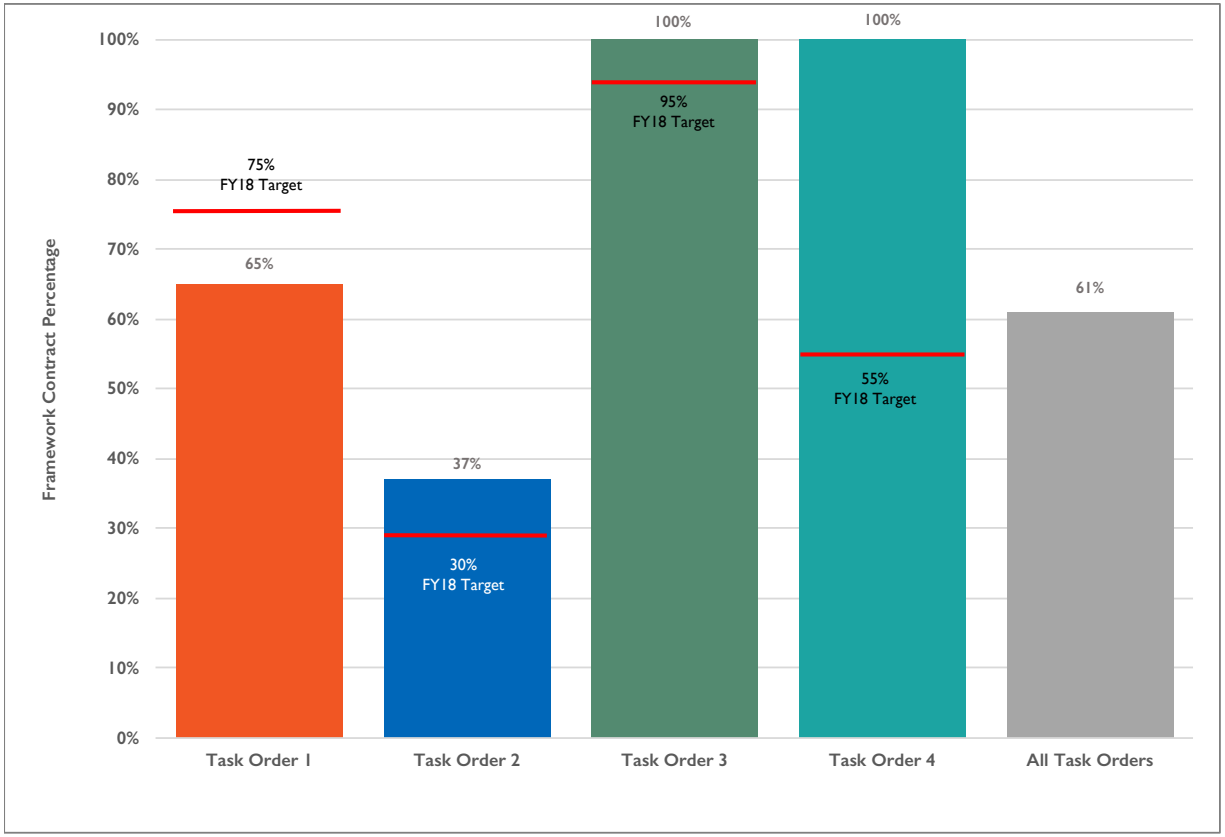
A10. Percentage of product procured using a framework contract (framework contract percentage)

Measure Definition

Numerator: Value of product purchased through framework contracts during the quarter.
Denominator: Total value of commodities purchased during the quarter.
Purpose: This indicator, which refers to the proportion of products purchased through framework contracts with suppliers, helps assess whether GHSC-PSM is promoting strategic sourcing to ensure the best value for customers. Framework contracts, in addition to being suited for negotiation for best value, also eliminate steps in the procurement process, enabling a quicker cycle time and reduced transaction costs.

Task Order	FY18 Target	Achievement FY2018 Q3	Achievement Year to Date*
TO1	75%	65%	66%
TO2	30%	37%	29%
TO3	95%	100%	99%
TO4	55%	100%	100%
All TOs	NA	61%	58%

Indicator Performance FY2018 Q3



Analysis

- Trends were largely consistent with last quarter, with the exception of an increase for Task Order 2 from 29 to 37 percent, and a decrease for Task Order 1 from 70 to 65 percent.
- The slight reduction in lab framework contracts from 9 to 6 percent accounted for most of the decrease in TO1 overall. Most lab procurements fall under Mozambique's lab reagent rental agreement, structured as an IDIQ. Mozambique procured $2.7 million under this contract in Quarter 3, down from nearly $4.8 million in Quarter 2. Spending under this reagent rental contract has accounted for 91 percent of TO1 lab framework contracting in FY2018 to date.
- The increase for Task Order 2 to 37 percent now exceeds its target of 30 percent. IDIQ contracts for ACTs (98 percent), other pharmaceuticals (100 percent), and severe malaria medications (71 percent) have driven performance over the target. However, the high value and volume of LLIN procurements continues to be the main driver of TO2 performance on this indicator.
- GHSC-PSM has been expanding framework agreements from Mozambique to more countries, including high-volume countries and those needing urgent access to reagents and capacity. The work-in-progress includes VL reagent rental agreements in Haiti, Zambia, and Nigeria, and also an IDIQ to streamline CD4 procurement in all GHSC-PSM countries. In June 2018, GHSC-PSM signed a long-term Basic Ordering Agreement with an emerging VL supplier who offers innovative VL technology and a new contracting model through a global framework agreement.

Data Notes

- Commodities are considered "purchased" during the quarter if the "PO Released for Fulfillment Date" in ARTMIS is between April 1 and June 30, 2018.
- Framework contracts include indefinite delivery, indefinite quantity contracts (IDIQs), blanket purchase agreements (BPAs), and basic ordering agreements (BOAs). Non-framework contracts include firm fixed price and fixed unit price subcontracts, simplified purchase agreements, and other types of one-off purchase orders.
- Procurement totals per task order are as follows: Task Order 1 (including all condoms and decentralized procurement): $119,497,407. Task Order 2: $57,812,607. Task Order 3: $14,248,965. Task Order 4: $7,589,087.
- *Year to Date performance is calculated using all data currently available, which may include changes to procurements that occurred in previous quarters, such as cancellations. Current year-to-date figures may differ slightly from a calculation derived from previously reported data.
- Targets reflect anticipated project performance by end of FY18 (September 30, 2018).

A10. Percentage of product procured using a framework contract (framework contract percentage) - Tracer product category

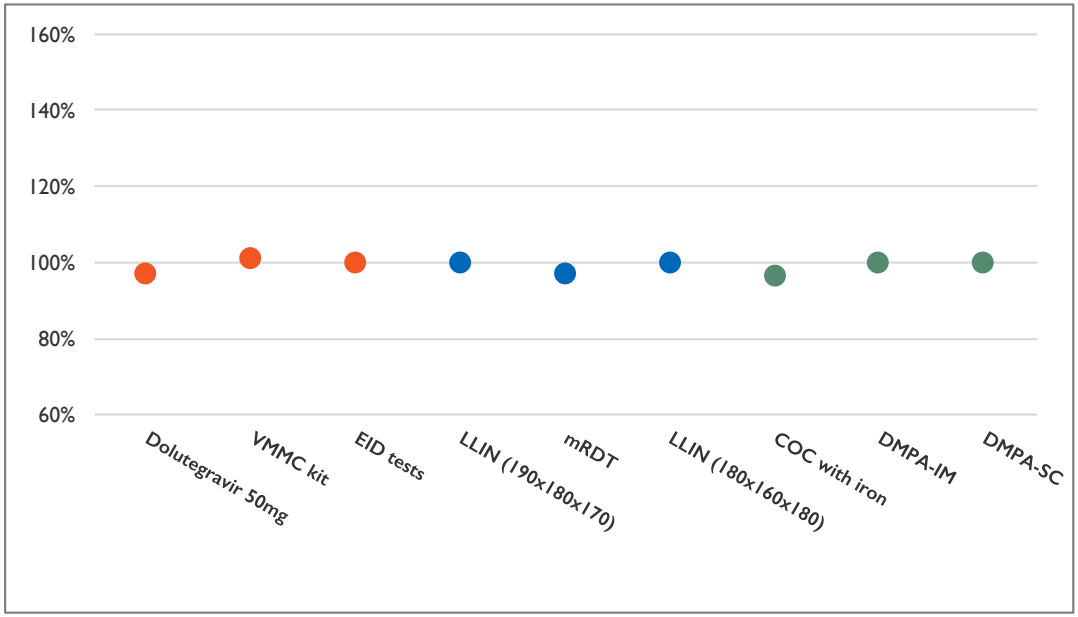
HIV	Total value of all product procured	Framework contract percentage	Malaria	Total value of all product procured	Framework contract percentage	PRH - Method Level	Total value of all product procured	Framework contract percentage	Maternal and Child Health	Total value of all product procured	Framework contract percentage
Task Order 1	$119,497,407	65%	Task Order 2	$57,812,607	37%	Task Order 3	$14,248,965	100%	Task Order 4	$7,589,087	100%
Adult ARVs	$50,799,624	100%	ACTs	$10,369,993	98%	Combined Oral Contraceptives	$489,154	100%	Food and WASH	$9,570	100%
Condoms	$6,319,776	100%	LLINs	$25,867,116	0%	Copper-Bearing Intrauterine Devices	$43,014	100%	Other Non-Pharma	$5,089,893	100%
Food and WASH	$1,445,026	100%	Laboratory	$510,337	0%	Emergency Oral Contraceptives	$23,204	100%	Other Pharma	$2,489,625	100%
HIV RTK			Other Non-Pharma	$111,000	0%	Implantable Contraceptives	$3,806,674	100%			
Laboratory	$42,242,554	6%	Other Pharma	$6,873,908	100%	Injectable Contraceptives	$8,349,104	100%			
Other Non-pharma	$986,130	15%	Severe Malaria Meds	$5,964,361	71%	Other Non-Pharma	$1,488,568	100%			
Other Pharma	$7,930,655	90%	mRDTs	$8,115,892	0%	Progestin Only Pills	$49,248	100%			
Other RTK	$642,094	0%									
Pediatric ARVs	$7,708,863	100%									
Prefab											
VMMC	$1,328,637	100%									
Vehicles and Other Equipment	$94,050	0%									

A12. Percentage price variance between the median unit price paid during the quarter and the median unit price paid over the life of the project

Measure Definition

Numerator: Median price paid per base unit of measure during the quarter.
Denominator: Median price paid per base unit of measure over the life of the project.
Purpose: This indicator allows GHSC-PSM to track variation in price for commodities ordered. Price variations can reflect a variety of market and supply chain realities, including but not limited to market stability, pricing structure in strategic contracts, and fluctuations in demand and capacity.

Indicator Performance FY2018 Q3



Analysis

- Prices paid this quarter were generally in line with life-of-project median prices, with some price reductions for dolutegravir (three percent reduction), malaria rapid diagnostic tests (three percent reduction), and combined oral contraceptives (four percent reduction).

Data Notes

- Targets not required for this indicator, per the GHSC-PSM M&E plan.
- The three most frequently ordered catalog products in the quarter are analyzed. Order frequency for this indicator is measured by the number of line items ordered per product per quarter. In cases where services, low value or non-core items (e.g. pipettes, lab refrigerators) are among the top orders in a quarter, GHSC-PSM may report on core items in their place.
- Exact product names and life-of-project median unit prices for the products shown above are as follows: Dolutegravir 50 mg Tablet, 30 Tablets, $3.70. MC Kit, Sterile, Single Use, For All Surgical Procedures, 1 Kit, $12.58. COBAS TaqMan AmpliPrep, HIV-1 Qualitative Test, 48 Tests, $554.00. Long-Lasting Insecticide Treated Net (LLIN) 190x180x170 cm (LxWxH) Rectangular Polyester (White), 1 Each, $1.96. Malaria Rapid Diagnostic Test (RDT) HRP2 (Pf) cassette, 25 tests, $4.50. LLIN 180x160x180 cm (LxWxH) Rectangular (Blue), 1 Each, $2.06. Levonorgestrel/Ethinyl Estradiol 150/30 mcg + Fe 75 mg, 28 tablets/cycle (PS and SM), 1 cycle, $0.27. Depot (IM) medroxyprogesterone acetate 150 mg/mL (1 mL) vial, w/AD syringe, burn boxes, 1 each, $0.88. Depot (SC) Medroxyprogesterone Acetate 104 mg/0.65 mL, Pre-Filled Uniject Device, 1 Syringe, $0.85.
- Order frequency may differ from the project's highest value products. The top three products per task order with the highest value of orders placed include TLD, viral load reagents, and LPV/r for TO1, two sizes of LLIN and mRDTs for TO2, and 2-rod implants,1-rod implants, and 3-month injectable contraceptives (DMPA-IM) for TO3.

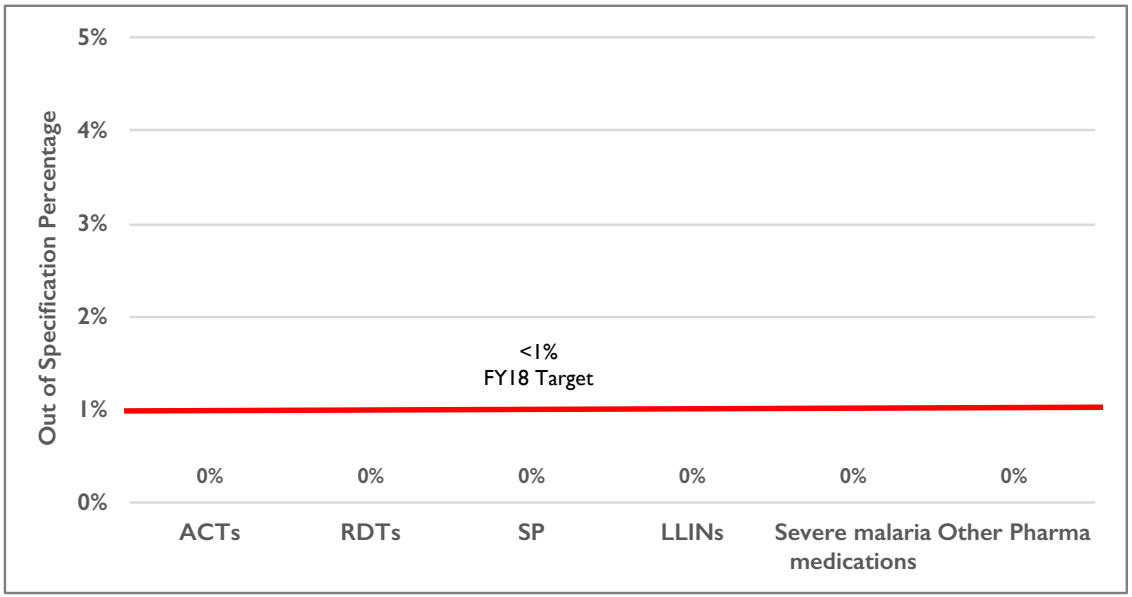
A13. Percentage of batches of product for which the final result is showing nonconformity (out-of-specification-percentage)

Measure Definition

Numerator: Total number of batches of product showing nonconformity during the quarter.
Denominator: Total number of batches tested during the quarter.
Purpose: This indicator measures whether manufactured products meet acceptance criteria and critical quality standards as defined by regulatory authorities.

Task Order	FY18 Target	Achievement	
		FY2018 Q3	Year to Date
TO1	N/A	N/A	N/A
TO2	<1%	0.0%	0.2%
TO3	N/A	N/A	N/A
TO4	N/A	N/A	N/A

Indicator Performance FY2018 Q3



Analysis

- No tested batches had any out of specification result this quarter.

Data Notes

- Total number of batches of malaria products tested this quarter is 613.
- All QA testing for TO2 is conducted by GHSC-PSM. All testing for TOs 1, 3, and 4 is conducted via the USAID GHSC-QA contract. GHSC-QA may be contacted for out-of-specification data for these TOs.
- Target reflects anticipated average project performance for the full 2018 fiscal year (October 2017-September 2018).

A14. Average vendor rating score

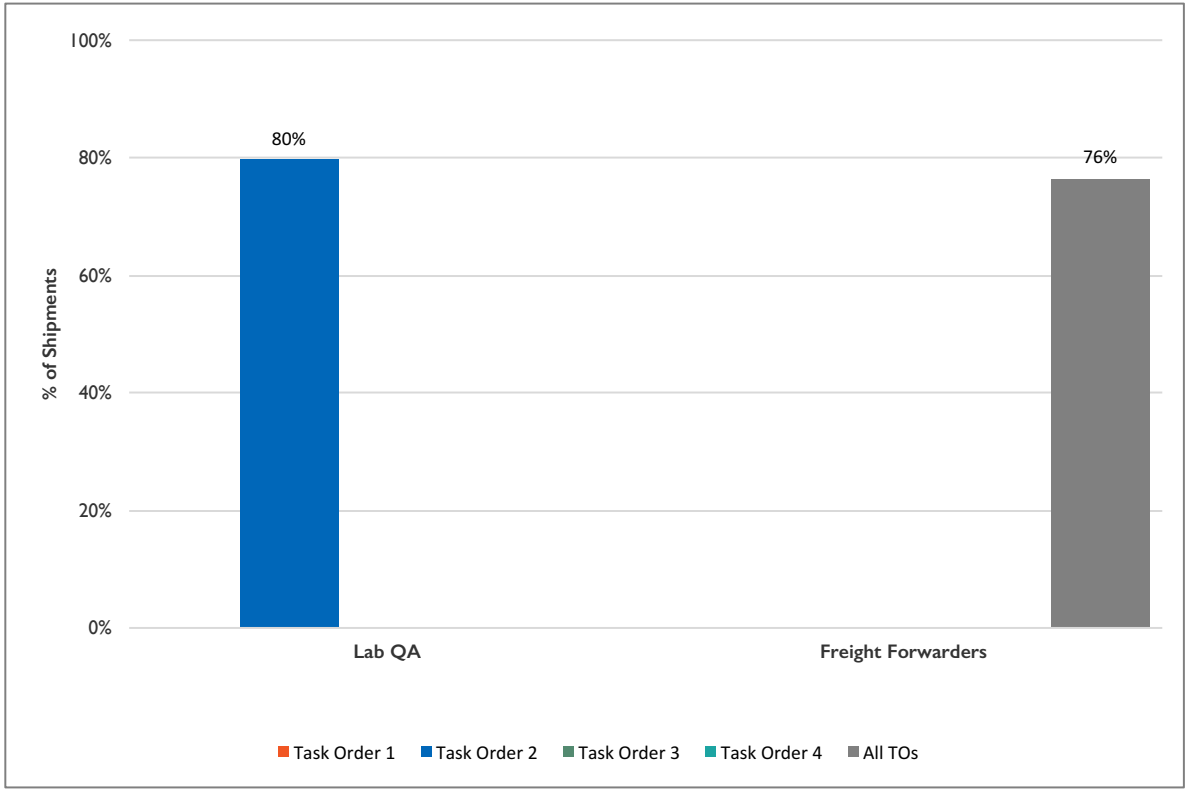
Measure Definition

Numerator: Sum of all key vendor ratings.
Denominator: Number of vendors from whom GHSC-PSM procured products/commodities, lab testing services, or freight forwarding during the quarter.
Purpose: This indicator enables GHSC-PSM and USAID to monitor performance of their vendors. This information helps the project to better manage vendor relations and can be used as a factor in vendor selection. Project vendors include manufacturers of health commodities (suppliers), freight forwarders (third party logistics providers), and labs providing quality assurance testing of commodities.

Achievement

Task Order	FY2018 Q3 Lab QA	FY2018 Q3 Freight Forwarders
TO1		
TO2	80%	
TO3		
TO4		
All TOs	N/A	76%

Indicator Performance FY2018 Q3



Analysis

- Lab vendor performance decreased slightly this quarter from 86 to 80 percent, with reliability (timeliness of service) and service decreasing the most (from 82 to 63 percent and from 80 to 67 percent, respectively). Two of the three labs had double the normal volume of tests to process, contributing to the increase in lead times.
- The GHSC-PSM Deliver/Return team conducted a competitive bidding process for 3PL providers during the previous quarter, resulting in one of the previous 3PLs being replaced. This quarter, the Deliver/Return team also revamped the 3PL scorecard to better target specific areas of performance for monitoring. The components of the new scorecard include: 1) Electronic data interchange (EDI) status performance, 2) Estimated time of arrival (ETA) delivery accuracy/reliability, 3) customer service, 4) invoicing accuracy, 5) on-time performance, 6) on-time spot quote turnaround, 7) rate of non-compliance reports, and 8) responsiveness. The score for this quarter across the five 3PLs was 76 percent.

Data Notes

- Lab QA vendors (all TO2): Three labs were evaluated this quarter.
- Freight forwarders (no TO disaggregation): Five freight forwarders were evaluated this quarter.
- Supplier scorecard is undergoing revisions; data to be reported in a future report.
- Target not required for this indicator.

A14. Average vendor rating score - further score breakdowns by component

Commodity Suppliers

	Result (Total Score)	Product Quality	Order Fullfillment (On Time In Full)	Invoicing Accuracy	Service
TO1 (n=					
TO2 (n=					
TO3 (n=					
All TOs					

QA Lab Vendors (TO2 Only)

Criteria	Reliability (Timeliness of Service)	Responsiveness	Completeness (of Documentation)	Cost	Service	Total
Title	Does the lab provide on-time provision of completed test reports?	Does the lab provide prompt response after receipt of GHSC-PSM request for testing?	Frequency of modification to certificates of analysis (CoAs)	Submitted invoices for routine testing adhere to set IDIQ pricing	Qualitative: Adherence to other terms and conditions (not related to reliability, responsiveness, completeness, and cost)	
Weight	43%	15%	18%	15%	10%	100%
Average Score (n=3)	**63%**	**94%**	**99%**	**98%**	**67%**	**80%**

3PL Vendors (n=5)

#	Component	Numerator	Denominator	Score	Indicator Weight	Component Weight	Weighted Score
1-EDI Status Performance						5%	5%
1a	Completeness - % of status messages received out of the total number of expected status messages (calculated as a product of number of delivered shipments and 8 shipment statuses)	Number of status messages received	Number of expected status messages during the reporting period (for the delivered shipments)	92%	5%		
		6689	7271				
2-ETA Delivery Accuracy/ Reliability						8%	8%
2	Percentage of shipments for which Actual Delivery Date was within ETA Delivery estimate sent on EDI statuses from 3PL PENDING	Number of shipments delivered during the reporting period which arrived within the approved window	Number of shipments delivered during the reporting period				
	(+5/-5 calendar days window)	879	879	100%	3%		
	(+2/-2 calendar days window)	879	879	100%	5%		

3PL Vendors (n=5)							
#	Component	Numerator	Denominator	Score	Indicator Weight	Component Weight	Weighted Score
4-Invoicing Accuracy						10%	7%
4a	Completeness - % of invoices received for shipments that have been fully delivered more than 7 days ago	Number of invoices received for shipments that have been fully delivered	Number of shipments delivered during the reporting period	65%	3%		
		579	886				
4b	Timeliness - % of invoices received within 30 days of delivery	Number of invoices received within 30 days of delivery	Number of invoices received during the reporting period	56%	2%		
		326	579				
4c	Accuracy - % of invoices received without exceptions	Number of invoices received without exceptions	Number of invoices processed during the reporting period	78%	5%		
		540	689				
5-On-time performance						40%	27%
5a	RFQ Transit Time - % of transport orders delivered according to the 3PL's committed transit time per mode and per lane requested "port to door" (temporary) (window +/-5 days)	Number of shipments delivered during the reporting period which arrived within the LSP's committed transit time per mode and per lane requested	Number of shipments delivered during the reporting period	67%	20%		
		583	868				
5b	Delivery - % of transport orders delivered within the Agreed Delivery Date window (where sufficient lead time has been provided, window +7/-14)	Number of shipments delivered during the reporting period which arrived within the Agreed Delivery Date window	Number of shipments delivered during the reporting period	67%	20%		
		423	636				
6- On-time spot quote turnaround						10%	8%
6a	Spot/Emergency Timeliness - % of emergency spot quote requests for which a response was received within 1 business day	Number of emergency spot quote responses provided within 1 business day	Number of emergency spot quotes requested during the reporting period				
		0	0				
6b	Spot/Non-emergency Timeliness- % of non-emergency spot quote requests for which a response was received within 3 business days	Number of non-emergency spot quote responses provided within 3 business days	Number of non-emergency spot quotes requested during the reporting period	83%	10%		
		135	163				
7- Rate of Non-compliance Reports (NCR)						10%	9%
7	Percentage of shipments for which an NCR was opened during the reporting period (lower percentage = higher score)	Number of NCRs opened during the reporting period	Number of shipments delivered during the reporting period	93%	10%		
		53	790				
8-Responsiveness						5%	5%
8	Timeliness - % (percentage of shipments for which booking was confirmed "on time" within 2 business days)	Number of shipments booked during the reporting period for which booking was confirmed by the 3PL within 2 business days	Number of shipments booked during the reporting period	91%	5%		
		785	867				
						Total Score	**76%**

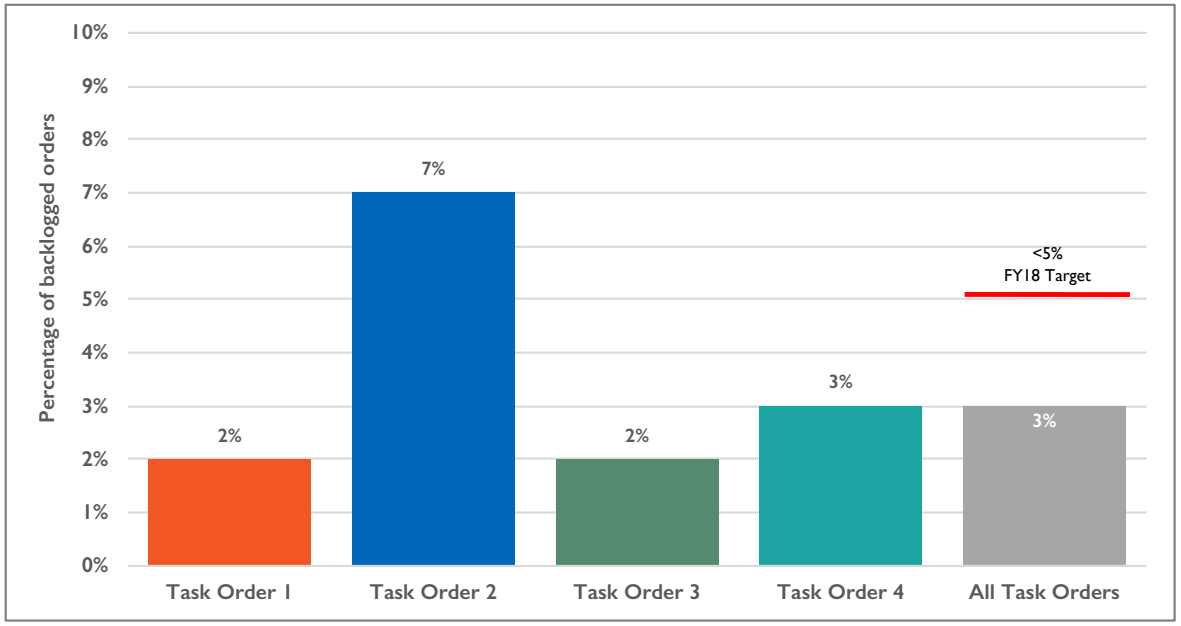
A16. Percentage of backlogged line items

Measure Definition

Numerator: Number of line items with an agreed delivery date (ADD) on or before the reporting period end date within a rolling 12-month period, that have not been canceled or put on hold and that are currently undelivered and late.
Denominator: Total number of line items with an ADD on or before the reporting period end date, within a rolling 12-month period, that have not been canceled or put on hold.
Purpose: Measuring and tracking backlogged items helps to prioritize and quickly resolve undelivered late orders to mitigate downstream impacts.

Task Order	FY18 Target	Achievement FY2018 Q3
TO1	NA	2%
TO2	NA	7%
TO3	NA	2%
TO4	NA	3%
All TOs	<5%	3%

Indicator Performance FY2018 Q3



Analysis

- Backlog percentage for the period is 2.8%, down from 4.3% in the previous quarter. Our backlog continues to fall below our target of 5% for FY2018 and continues to support the convergence of our OTD rate and OTIF rate (see indicator A1a and A1b). Given that the indicator measures only the number of line items within a rolling 12-month period, eight line items which are undelivered and late fall outside of this window. Most of these line items outside of the rolling 12-month period are currently clearing customs or have been shipped to their final destination.

Data Notes

- The total number of line items with agreed delivery dates in the last 12 months are as follows: Task Order 1 (including all condoms for any TO) - 4,414. Task Order 2 -518. Task Order 3 - 435. Task Order 4 - 40.
- The project currently has 8 undelivered line items with an ADD before the 12 month period of this indicator.
- Targets reflect anticipated project performance by end of FY18 (September 30, 2018).

A16. Percentage of backlogged items

HIV	**Denominator** (Total number of line items with an ADD on or before the reporting period end date, within a rolling 12-month period, that have not been cancelled or put on hold.)	Percentage of backlogged items
Task Order 1	4,414	2%
Adult ARVs	463	4%
Condoms	211	2%
Food and WASH	30	0%
HIV RTK		
Laboratory	2,680	2%
Other Non-pharma	448	2%
Other Pharma	226	8%
Other RTK	18	0%
Pediatric ARVs	232	4%
Prefab		
Vehicles and Other Equipment	17	12%
VMMC	89	0%

Malaria	**Denominator** (Total number of line items with an ADD on or before the reporting period end date, within a rolling 12-month period, that have not been cancelled or put on hold.)	Percentage of backlogged items
Task Order 2	518	7%
ACTs	197	8%
Laboratory	47	2%
LLINs	104	14%
mRDTs	48	4%
Other Non-Pharma	31	0%
Other Pharma	22	18%
Severe Malaria Medicines	46	2%
Sulphadoxine-pyrimethamine	23	0%

PRH - Method Level	**Denominator** (Total number of line items with an ADD on or before the reporting period end date, within a rolling 12-month period, that have not been cancelled or put on hold.)	Percentage of backlogged items
Task Order 3	435	2%
Combined Oral Contraceptives	25	0%
Copper-bearing Intrauterine Devices	10	0%
Emergency Oral Contraceptives		
Injectable Contraceptives	49	4%
Implantable Contraceptives	49	2%
Progestin-only Pills	8	13%
Standard Days Method	6	33%
All Other TO3 Products	288	0%

Maternal and Child Health	**Denominator** (Total number of line items with an ADD on or before the reporting period end date, within a rolling 12-month period, that have not been cancelled or put on hold.)	Percentage of backlogged items
Task Order 4	40	3%
Laboratory		
Other Non-Pharma	10	0%
Other Pharma	30	3%

B1. Stockout rate at SDPs

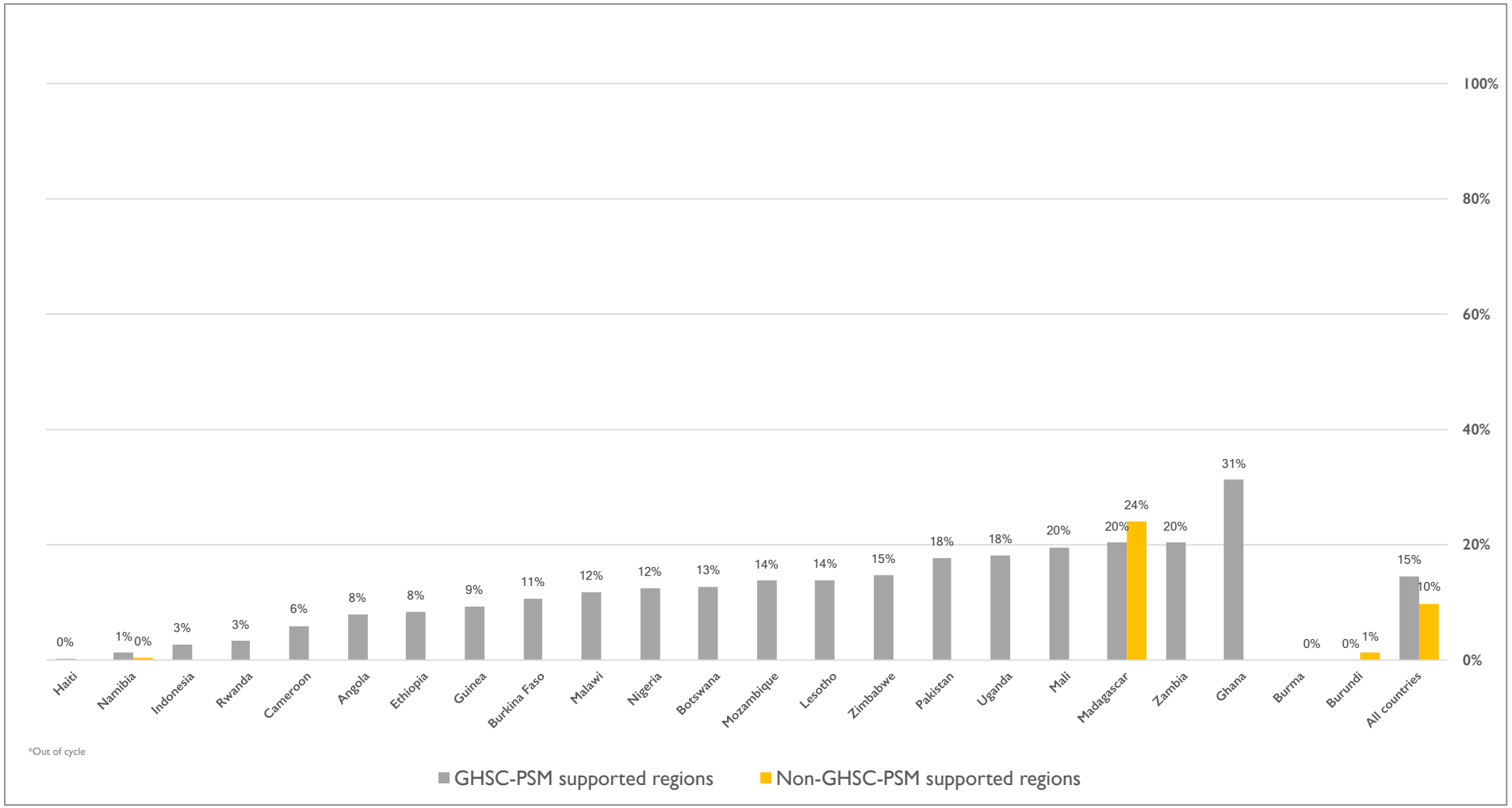
Measure Definition

Numerator: Number of SDPs that were stocked out of a specific tracer product according to the ending balance of the most recent logistics report (or on the day of site visit).
Denominator: Total number of SDPs that reported/were visited in GHSC-PSM-supported countries that offer the tracer product.
Purpose: This indicator determines the prevalence of commodity stockouts (meaning either unavailable, or available but unusable due to damage or expiry) at facilities or service delivery points. In conjunction with other data, stockout information helps determine the location of bottlenecks in the supply chain. This enables GHSC-PSM to focus on those areas to reduce future stockouts.

Task Order	Overall Stockout Rate Achievement	
	FY2018 Q3	Year to Date
TO1	9%	8%
TO2	16%	15%
TO3	17%	15%
All TOs	15%	14%

▸ Targets for this indicator are set at the country level

Overall Stockout Rate by Country



Out-of-cycle countries are not counted toward overall totals.
Stockout rates presented are for all key products offered in each country, irrespective of the funder of those products.
Note also that GHSC-PSM does not provide technical support to all levels of the supply chain in all countries.

B1. Percentage of SDPs with stockouts of tracer products

	Countries	Angola	Botswana	Burkina Faso	Burma Non-GHSC-PSM-supported	Burundi Non-GHSC-PSM-supported	Cameroon	Ethiopia	Ghana	Guinea	Haiti	Lesotho	Madagascar	Madagascar Non-GHSC-PSM-supported	Malawi	Mali	Mozambique	Namibia	Namibia Non-GHSC-PSM-supported	Nigeria	Rwanda	Uganda	Zambia	Zimbabwe
HIV	Task Order 1	2%	13%		0%	2%	6%	10%	13%		0.1%	14%			8%		8%	1%	0.4%	8%	3%	18%	11%	10%
	First-line Adult ARVs	0%			0%	2%	9%	2%	10%		0%	1%			0%		1%	0%	0%	5%	2%	10%	0%	6%
	Second-line Adult ARVs	0%			0%	2%	0%	2%	8%		0%	9%			11%		3%	8%	3%	7%	2%		3%	5%
	First-line Pediatric ARVs	20%			0%	5%	0%	5%			1%	0%			3%		2%	0%	0%	4%	4%	20%	9%	5%
	First RTKs	0%	15%			1%	8%	13%	11%		0%	19%			6%		23%	0%	0%	4%	4%	6%	6%	5%
	Second RTKs	0%				2%	2%	12%	9%		0%	8%			13%		26%	0%	0%	15%	0%	9%	3%	26%
	Tie-breaker RTKs							14%				7%						0%	0%	12%		20%		20%
	Male Condoms**	0%	21%			2%		6%	27%		0%	5%			10%		25%	0%	0%	9%	3%		21%	1%
	Female Condoms**	0%	11%			0%						11%			12%		36%	0%	0%	10%	5%		37%	5%
	EID Consumables		20%		0%			6%												5%	0%			
	EID Reagents		20%		0%			0%				100%					0%			9%	0%	0%	8%	0%
	Viral Load Consumables				0%			34%												5%	0%			
	Viral Load Reagents							0%				0%					0%			5%	0%	0%	0%	0%
	Ready-to-use Therapeutic Foods (RUTF)							23%				63%										55%		
Malaria	Task Order 2	15%		11%		1%		12%	42%	8%			19%	19%	13%	13%	22%			16.0%	4%	8%	21%	22%
	First-line ACTs (AL 6X1)	13%		3%				13%		6%					16%	10%	17%			11%	3%		14%	16%
	First-line ACTs (AL 6X2)	14%		5%				12%		6%					28%	10%	26%			13%	1%		24%	28%
	First-line ACTs (AL 6X3)	11%						18%		5%					22%	29%	27%			24%	3%		20%	43%
	First-line ACTs (AL 6X4)	9%						8%	34%	10%					16%	13%	29%			13%	10%		26%	16%
	First-line ACTs (AL inability to treat)	0%		1%				4%		1%					7%	1%	4%			4%	0%	1%	3%	3%
	First-line ACTs (AS/AQ 100/270mgx3)			24%		0%							14%	16%						24%				
	First-line ACTs (AS/AQ 100/270mgx6)			18%		1%							14%	12%						28%				
	First-line ACTs (AS/AQ 25/67.5mg)					0%			65%				17%	19%						13%				
	First-line ACTs (AS/AQ 50/135mg)					0%			58%				10%	12%						26%				
	Rapid Diagnostic Tests for Malaria	30%		5%		1%		10%	27%	4%			12%	12%	1%	9%	12%			14%	1%	7%	10%	10%
	Sulphadoxine-pyrimethamine (SP)	0%		10%		3%			27%	10%			32%	32%	12%	9%	24%			12%		10%	31%	17%
	LLINs			9%		1%				18%			62%	50%	12%	9%	29%			20%				

* Out of cycle

** Male and female condoms are reported under both TOs 1& 3.

B1. Percentage of SDPs with stockouts of tracer products

	Countries	Burundi Non-GHSC-PSM-supported	Ethiopia	Ghana	Guinea	Haiti	Madagascar	Madagascar Non-GHSC-PSM-supported	Malawi	Mali	Mozambique	Nigeria	Pakistan	Rwanda	Uganda	Zambia	*Nepal (FY18 Q2)
PRH**	Task Order 3	1%	6%	38%	11%	0.2%	23%	32%	26%	26%	24%	10%	18%	3%	30%	29%	12%
	Copper-bearing Intrauterine Devices	1%	3%		10%	0%	50%	44%	6%	31%	17%	5%	23%			37%	
	Calendar-based Awareness Methods					0%	43%	58%		35%							
	Male Condoms* **	2%	6%	27%	6%	0%	27%	63%	10%	22%	25%	9%	16%	3%		21%	11%
	Female Condoms* **	0%					56%	64%	12%	40%	36%	10%		5%		37%	
	Injectable Contraceptives	0%	3%	38%	8%	0%	10%	13%	11%	9%	5%	4%	17%	4%	30%	44%	9%
	Depot Medroxyprogesterone Acetate 104 mg/0.65 mL		3%								63%						
	Depot Medroxyprogesterone Acetate 150 mg Vial, SR	0%		38%	8%	0%	10%	13%	11%	9%	24%	8%	17%	4%	30%	36%	9%
	Norethisterone Enanthate											7%				43%	
	Implantable Contraceptives	0%	3%	38%	9%	0%	23%	23%	18%	21%	16%	8%		7%		34%	
	Etonogestrel 68 mg/Rod, 1 Rod Implant	0%	7%				23%	23%	6%			14%		4%		32%	
	Levonorgestrel 75mg/Rod, 2 Rod Implant		5%	38%	9%	0%			15%	21%	16%	12%		2%		30%	
	Combined Oral Contraceptives	1%	9%	49%	14%	1%	12%	18%	11%	19%	19%	15%	16%	4%		21%	17%
	Levonorgestrel/Ethinyl Estradiol 150/30 mcg + Fe 75 mg, 28 Tablets/Cycle	1%	9%	49%	14%	1%	12%	18%		19%			16%	4%		21%	17%
	Levonorgestrel/Ethinyl Estradiol 150/30 mcg 28 Tablets/Cycle								11%		19%	15%					
	Emergency Oral Contraceptives	4%	6%						27%		16%						
	Levonorgestrel 0.75 mg, 2 Tablets	4%	6%						27%		16%						
	Levonorgestrel 1.5 mg, 1 Tablet																
	Progestin-only pills	1%	9%		17%		21%	38%	15%	36%	24%	9%		4%		35%	
	Levonorgestrel 30 mcg 35 Tablets/Cycle	1%	9%		17%		21%	38%	15%	36%	24%	9%		4%		35%	

* Out of cycle

The PRH "method level" **(in bold) refers to the percent of facilities stocked out of all products the facility offers within a given method. A stockout at the "product level" refers to the number of sites stocked out of that particular product (depending on what is offered at a particular facility). A facility could be stocked out of one product and not stocked out at the method level.

***Male and female condoms are reported under both TOs 1 & 3.

B1. Stockout rate - granular-level analysis

Analysis

Overall stockouts fell half a percentage point since Quarter 2, driven by Task Order 3 dropping one percentage point from 18 to 17 percent stocked out across countries.

Out of the 22 countries that reported on SDP stockout rate this quarter, nine (41 percent) saw their stockout rates drop, three (14 percent) remained the same, and ten (45 percent) saw increases in stockouts ranging from 0.2 percentage points (Namibia) to 9 percentage points (Lesotho, where PEPFAR added additional high volume sites under GHSC-PSM support). Mali began reporting for the first time this quarter.

Task Order 1 continues to maintain the lowest stockout rate, at 9 percent, unchanged from last quarter.

Country Analysis	
Angola	Angola has reported a slight increase in stockouts from last quarter, from 5 percent to 8 percent overall. Looking more closely, there were only 2 percent stockouts for HIV products this quarter (up from 0 percent last quarter) and 15 stockouts for malaria products (up from 12 percent last quarter). For HIV, the increase was found to be a single SDP with a stockout of first line pediatric ARVs and female condoms. The increase in malaria stockout rates is attributed to two new facilities that Angola has just begun to support with technical assistance. Over time, it is expected that the stockout rate will reduce.
Botswana	Botswana reported no stockouts of adult ARVs at GHSC-PSM-supported facilities, but a 33 percent stockout of pediatric ARVs. This was due to some expiries and a long time for replenishment from the central level. The project is supporting the CMS to establish an ARV Management Team, which meets weekly to monitor stock and take proactive steps to ensure availability of ARVs and RTKs in line with Botswana's 90-90-90 targets.
Burkina Faso	Burkina Faso's overall stockout rate decreased from 14 percent in Quarter 2 to 11 percent in Quarter 3, due to the following product-level reductions in stockouts: AL 6X1 decreased from 15 percent to 3 percent; AL 6X2 from 23 percent to 5 percent, and RDTs from 17 percent to 5 percent. All expected PMI deliveries of RDTs arrived this quarter, contributing to the improved availability in facilities. Other product availability improvements are due to recent deliveries of orders from 2017 from other donors and government-funded orders.
Burma	Burma continues its streak last quarter, with a third sequential quarter of no stockouts of HIV-tracer products. The early warning system continues to function well in the ART hospitals managing ARVs. Due to constraints with arranging cold chain storage and transport, the supply of viral load reagent for this year will continue by direct delivery to the sites based on their annual need calculation. GHSC-PSM will continue stock monitoring and EWS implementation in the remaining two viral load sites in FY-18 Q4.
Cameroon	Cameroon reported limited stockouts this quarter, averaging only 6 percent across TO1 commodity types. Stockout data are currently collected during supervision visits, but LMIS reporting rates are increasing (see indicator B3). Reporting improvements should allow a transition to LMIS reporting in the future, and are believed to be a contributing factor in reduced stockouts as well.
Ethiopia	Stockouts in Ethiopia increased slightly from 6 percent to 8 percent this quarter, due in part to the doubling of the stockout rate for malaria products from 6 percent to 12 percent. However, this masks a low "inability to treat" rate of 4 percent; only stockouts of individual formulations of AL were high. Stockouts of HIV/AIDS products were driven by the shortage of the most-used viral load consumables (stocked out in 34 percent of SDPs); however, alternative products were available in many cases. Ready-to-use-therapeutic foods were also stocked out in 23 percent of SDPs. For reproductive health/family planning products, an increase in the stockout rate for combined oral contraceptives from 4 percent to 9 percent may be due to a recent shift in preferences toward long-acting contraceptive methods. The MOH is implementing different community-based strategies to improve utilization of long-acting contraceptives. To improve stock availability across program areas, GHSC-PSM in Ethiopia is advocating for coordination platforms for supplying products at the national level, continuing to strengthen lab commodity supply management, working closely with logistics officers at zonal and regional health bureaus, and strengthening the feedback mechanism to SDPs on data quality and logistics management.

Country Analysis	
Ghana	GHSC-PSM Ghana reported an overall improvement in its stockout rate at SDPs that reported, with the overall in-country stockout rate as well as the stockout rate for Task Orders 1 and 3 all decreasing slightly. The decrease in TO1 and TO3 stock out rate can be attributed to the efforts made in-country to improve the distribution of products. The stockout rate for TO2 increased slightly from 41 percent to 42 percent, due to low demand for ACTs and the MOH's effort to keep central stocks low to reduce expiries.
Guinea	Guinea's stockout rate decreased significantly from 16 percent to 9 percent, reflecting a large reduction in stockouts of reproductive health/family planning products from 25 percent overall last quarter to 11 percent this quarter. Combined oral contraceptive stockout rates improved from 27 percent stocked out to 14 percent, and IUDs from 22 percent stocked out to 10 percent.
Haiti	Haiti continues to maintain low stockouts, with the overall rate falling from 0.4 percent to 0.2 percent since last quarter. Out of 1,924 product observations across sites, only 3 were stocked out. The project will continue to work with site managers to ensure that any supplementary product requests are made in time to prevent stockouts. Data analysts must take into account local holidays and adjust distribution calculations accordingly. The project will consider scaling up the strategy of health workers doing product distributions.
Indonesia	GHSC-PSM Indonesia reported on 12 SDPs in Jakarta Province this quarter, all of which reported on most-used 1st line ARVs; seven of which reported on most-used 2nd line ARVs; five reporting on 1st RTK, 2nd RTK, and "tie breaker" RTK; and four that reported on most-used 1st line pediatric ARVs. One facility reported a stockout of second RTKs. No other tracer products were reported as stocked out.
Madagascar	Overall stockouts in Madagascar increased only slightly from 19 percent to 20 percent. The increase in malaria product stockouts from 13 to 19 percent was due mainly to stockouts of LLINs (62 percent) and some formulations of AS/AQ. These were due to a combination of factors including delayed delivery to a few district pharmacies (PhaGDis), lack of accounting for community health worker distribution needs in facility orders, and increases in malaria in certain regions. Stockouts of reproductive health/family planning products decreased from 28 percent to 23 percent. GHSC-PSM in Madagascar is working at the facility level to develop job aids to clarify district and commune-level pharmacy scopes of work and ordering processes, continuing supportive supervision on logistics management, and conducting audits of health facilities to ensure good governance and product management. The project is also sharing a dashboard of monthly stock status with health facilities.
Malawi	Overall stockout rates for malaria and family planning commodities remained consistent with previous quarters. Rates for some products improved, such as combined oral contraceptives and malaria RDTs, while worsening for others, such as two-rod implants and ACTs. The project continues to investigate possible root causes, including projection and stock allocation during distribution planning, health facility data quality, and distribution timeliness and frequency.
Mali	Mali began reporting data for the first time this quarter. Its overall stockout rate was 20 percent, with a Task Order 2 rate of 13 percent and Task Order 3 rate of 26 percent. For malaria products, Mali had a very low "inability to treat" rate of 1 percent, despite some high stockouts of individual AL formulations. RDTs, SP, and LLINs were all stocked out at 9 percent. For reproductive health/family planning commodities, high stockouts were driven by IUDs (31 percent), calendar-based awareness methods (35 percent) and female condoms (40 percent). The revised supply plan for family planning showed an urgent need to place emergency orders for contraceptives to mitigate the stockout situation at lower levels. USAID has agreed to fund these emergency orders. In terms of malaria products, the country must quickly implement the distribution plan to move malaria commodities to the regional level to make space at the central warehouse.
Mozambique	With the expansion of SIGLUS, GHSC-PSM Mozambique reported on additional facilities for TO2, TO3, and TO4. The number of facilities that reported doubled (or more) for each task order. Additionally, LLINs were reported on for the first time as they are now being reported through SIGLUS.
Namibia	SDP stockouts were minimal this quarter, with only two facilities reporting a stockout of second line adult ARVs. The project continues to provide SDP support on stock management.
Nepal	In Nepal, stockouts overall have remained the same at 12 percent. The stockout of FP commodities has slightly increased for Depot Medroxyprogesterone Acetate 150 mg Vial, SR and condoms in Q3 to 9 percent from 7 percent in Q2. The stockout of Levonorgestrel/Ethinyl Estradiol 150/30 mcg + Fe 75 mg, 28 Tablets/Cycle shows improvement from 21 percent in Q2 to17 percent in Q3. The quarterly supply plan has indicated a need for rapid follow-up for all three commodities to ensure consistent supply.

Country Analysis	
Nigeria	Overall, Nigeria experienced a reduction in the stockout rate from 14.5 percent in FY18 Q2 to 12 percent this quarter. Stockouts of ARVs (TO1) remained low with 5 percent for adult ARVs and 4 percent for pediatric ARVs. This quarter, first line RTKs and tie-breaker RTK stockout rates decreased, while the second line RTK rate increased due to limited in-country availability of the product. The low stockout rate of AL aids the continued preference of service providers to use AL to treat malaria, compared to the low utilization of AS/AQ.
Pakistan	During the quarter, Pakistan's stockout rate decreased slightly to 18 percent. In KP province, the most substantial reduction was observed in copper-bearing intrauterine devices (29 percent to 16 percent), followed by condoms (14 percent to 10 percent) and Depot Medroxyprogesterone Acetate 150 mg Vial, Intramuscular (11 percent to 9 percent). A technical inspection report for copper-bearing intrauterine devices shipments was submitted by the provincial inspection team during the reporting quarter. This has expedited the supply of these IUDs to SDPs and improved the stock situation at the SDPs accordingly.
Rwanda	Overall, Rwanda experienced a slight reduction in the overall stockout rate from 4 percent in FY18 Q2 to 3 percent this quarter, which was primarily driven by the decrease in stockouts in TO2 from 8 percent last quarter to 4 percent this quarter. In particular, all health facilities which reported had at least one formulation of Artemether-Lumefantrine available to treat malaria at the time of data collection.
Uganda	Stockout rates overall in Uganda have decreased slightly from 20 percent in Q2 to 18 percent in Q3. TO1 has had a decrease in stockout rates with only a marginal increase of 1 percent in stockout rates for certain TO1 commodities (1st line pediatric--19 percent to 20 percent; and RUTF--54 percent to 55 percent). TO2 commodity stockouts have decreased overall despite a marginal increase of 1 percent in stockout rates for TO2 commodities (ACTs--0 percent to 1 percent and RDTs--6 percent to 7 percent) at the SDP level. Compared to last quarter, stockout rates for SP reduced from 17 percent to 10 percent because more SDPs purchased the commodity, leading to increased availability at the site level.
Zambia	Zambia's stockout rate remained constant at 20 percent overall both in Quarters 2 and 3. Condom stockouts (21 percent and 37 percent for male and female condoms, respectively) were by far the largest contributors of the 11 percent stockout rate for HIV/AIDS products. A main factor in these stockouts was the central medical store's deviation from the delivery schedule. However, only one out of 415 sites (0.2 percent) was stocked out of first-line adult ARVs, and only 3 percent were stocked out of 2nd line adult ARVs. In terms of malaria commodities, a low "inability to treat rate" was reported: only 3 percent of facilities were stocked out of all four formulations of AL. However, SP was stocked out in 31 percent of SDPs due to facilities submitting their orders late. High stockout rates of contraceptives, particularly injectables (44 percent), can be attributed to the central medical store's deviation from the distribution schedule. Redistributions between facilities were done to minimize service disruptions. GHSC-PSM is working with Medical Stores Limited (MSL) to improve bimonthly delivery performance by strengthening MSL's internal processes, including use of a tracking tool to monitor adherence to the distribution schedule, thereby providing critical data for resolving the bottlenecks identified. Additionally, the project is ensuring effective use of the 12 project-procured trucks and providing 3PL services for cold chain and non-cold chain commodities.
Zimbabwe	Stockout rates fell for several TO1 products this quarter, including a significant improvement for first RTKs (16 percent in Q2 to 5 percent stockout rate in Q3). Stockout rates for ARVs also improved, as transitions to new regimens were completed (stockout rates are reported for the new regimens). For malaria, individual ACT stockouts rose as consumption increased with the beginning of the peak season. However, the majority of sites were able to treat with AL, with only 3 percent reporting a stockout of all presentations. In general, lower stockout rates are credited to improvements in ordering and delivery cycles.

Data Notes

- Stockout rates presented are for all key products offered in each country, irrespective of the funder of those products.
- GHSC-PSM does not provide technical support to all levels of the supply chain in all countries.
- GHSC-PSM defines a "supported region" as an administrative unit which is: a) immediately below the central level, b) receiving "sustained" support from the project, meaning that it has one or more ongoing work plan activities, and c) these activities can be expected to have some eventual influence on facility-level supply chain outcomes. Countries where not all of these conditions apply to any region will be considered "non-GHSC-PSM-supported." Only SDPs that fall within "GHSC-PSM-supported" regions are included in task order level, overall country level, or project level results reporting, as these SDPs are considered to be within the reach of GHSC-PSM's influence.

B2. Percentage of stock status observations in storage sites where commodities are stocked according to plan, by level in supply system (tracer products)

Measure Definition

Numerator: Number of stock status observations for a tracer commodity that were within the designated minimum and maximum quantities at storage sites.
Denominator: Total number of stock status observations for a tracer commodity at storage sites.
Purpose: This indicator checks to see if the supply chain system is functioning as it was designed by tracking if both the central level and subnational level medical stores can maintain the designated quantity of stock (months of stock between min and max levels) to treat patients or to distribute to treatment facilities or secondary distribution centers. This metric can help locate bottlenecks within the system which prevent patients from receiving needed commodities and/or result in stockouts or expiries.

Task Order	Achievement FY2018 Q3	Year to Date
TO1	36%	35%
TO2	28%	25%
TO3	16%	16%
TO4	16%	19%
All TOs	24%	23%

▸ Targets for this indicator are set at the country level

Indicator Performance

		Central	Sub-National Level 1
HIV	**Task Order 1**	38%	36%
	First-line Adult ARVs	38%	56%
	Second-line Adult ARVs	43%	51%
	First-line Pediatric ARVs	41%	37%
	First RTKs	58%	20%
	Second RTKs	48%	23%
	Tie-breaker RTKs	50%	5%
	Male Condoms	32%	28%
	Female Condoms	12%	19%
	RUTF	0%	12%
	EID Consumables	22%	100%
	EID Reagents	31%	100%
	Viral Load Consumables	22%	100%
	Viral Load Reagents	25%	100%
Malaria	**Task Order 2**	**31%**	**28%**
	First-line ACTs (AL 6X1)	39%	30%
	First-line ACTs (AL 6X2)	31%	18%
	First-line ACTs (AL 6X3)	19%	6%
	First-line ACTs (AL 6X4)	37%	14%
	First-line ACTs (AS/AQ 100/270mgx3)	20%	44%
	First-line ACTs (AS/AQ 100/270mgx6)	40%	32%
	First-line ACTs (AS/AQ 25/67.5mg)	14%	23%
	First-line ACTs (AS/AQ 50/135mg)	14%	30%
	RDTs for Malaria	47%	27%
	Sulphadoxine-pyrimethamine (SP)	19%	30%
	LLINs	47%	58%

		Central	Sub-National Level 1
PRH	**Task Order 3**	24%	16%
	Injectable Contraceptives	28%	16%
	Depot Medroxyprogesterone Acetate 104 mg/0.65mL	9%	12%
	Depot Medroxyprogesterone Acetate 150 mg Vial, SR	44%	20%
	Norethisterone Enanthate	0%	15%
	Implantable Contraceptives	40%	19%
	Etonogestrel 68 mg/Rod, 1 Rod Implant	38%	17%
	Levonorgestrel 75mg/Rod, 2 Rod Implant	41%	21%
	Combined Oral Contraceptives	13%	18%
	Levonorgestrel/Ethinyl Estradiol 150/30 mcg +Fe 75 mg, 28 Tablets/Cycle	35%	18%
	Levonorgestrel/Ethinyl Estradiol 150/30 mcg 28 Tables/Cycle	17%	0%
	Emergency Oral Contraceptives	21%	12%
	Levonorgestrel 0.75 mg, 2 Tablets	31%	14%
	Levonorgestrel 1.5 mg, 1 Tablet	0%	4%
	Progestin-only Pills	19%	24%
	Levonorgestrel 30 mcg 35 Tablets/Cycle	19%	24%
	Copper-bearing Intrauterine Devices	7%	11%
	Calendar-based Awareness Methods	50%	7%
	Male Condoms	27%	18%
	Female Condoms	15%	9%
MCH	**Task Order 4**	19%	16%
	Oxytocin (10 IU Injectable)	8%	13%
	MgSO4 (50% Injectable)	38%	12%
	Injectable Gentamicin	25%	13%
	ORS+zinc (Together)	0%	0%
	Chlorhexidine Gel	25%	23%
	Amoxicillin (125 mg or 250 mg Dispersible Tablets)	17%	20%
	Zinc (Alone)	27%	8%
	ORS (Alone)	0%	38%

*Stocked according to plan rates presented are for all key products offered in each country, irrespective of the funder of those products.
The PRH "method level" **(in bold) refers to the percent of facilities stocked out of all products the facility offers within a given method. A stockout at the "product level" refers to the number of sites stocked out of that particular product (depending on what is offered at a particular facility). A facility could be stocked out of one product and not stocked out at the method level. Method level aggregations represent the total number of observations for each stock status summed across all tracer products within that particular method.

B2. Percentage of stock status observations in storage sites where commodities are stocked according to plan, by level in supply system (tracer products for out-of-cycle country - Nepal)

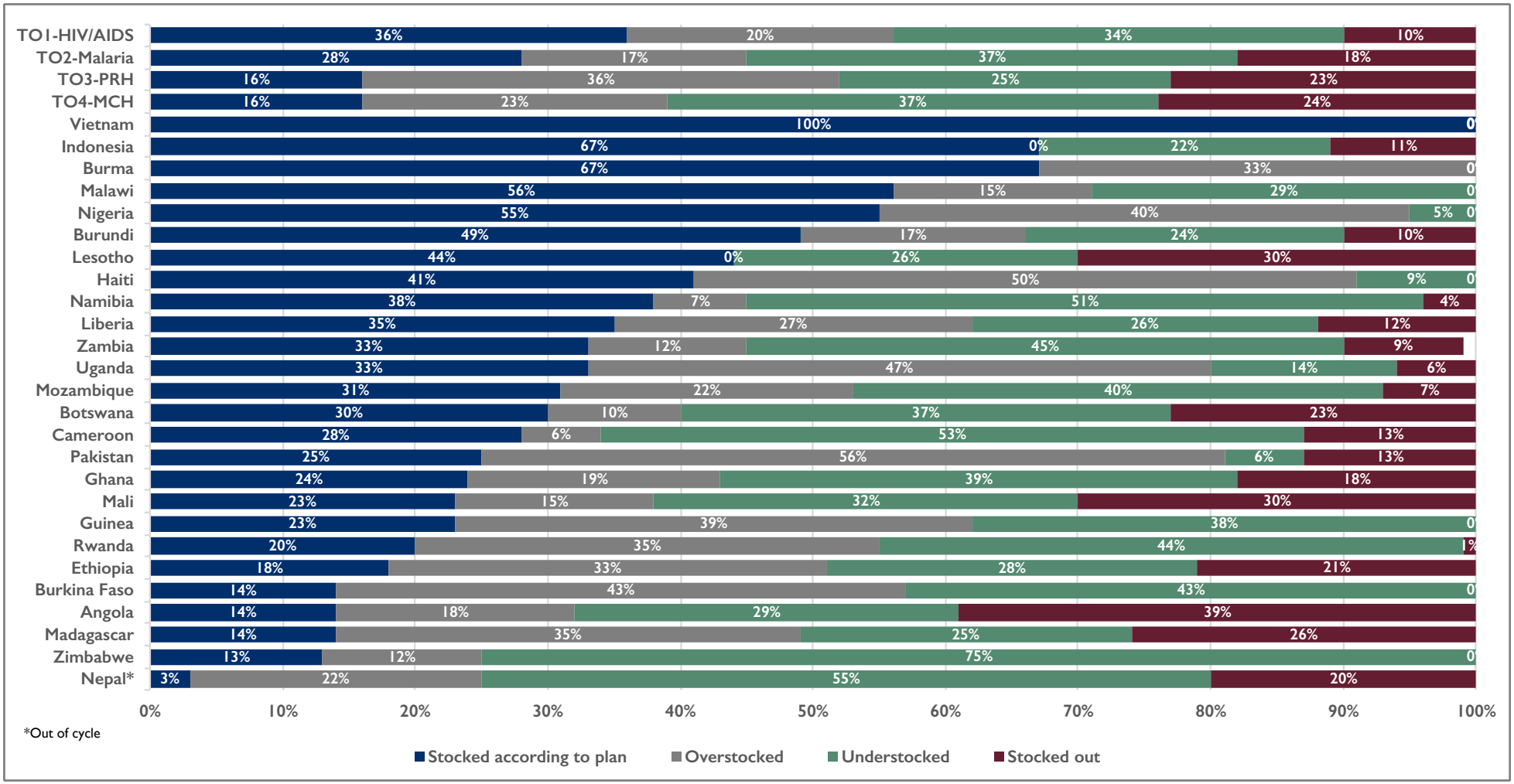
Indicator Performance

		Central	Sub-National Level 1
PRH	**Task Order 3**	20%	0%
	Injectable Contraceptives	0%	0%
	Depot Medroxyprogesterone Acetate 104 mg/0.65mL	0%	0%
	Depot Medroxyprogesterone Acetate 150 mg Vial, SR		0%
	Norethisterone Enanthate		
	Implantable Contraceptives		
	Etonogestrel 68 mg/Rod, 1 Rod Implant		
	Levonorgestrel 75mg/Rod, 2 Rod Implants	0%	0%
	Combined Oral Contraceptives	100%	0%
	Levonorgestrel/Ethinyl Estradiol 150/30 mcg +Fe 75 mg, 28 Tablets/Cycle	100%	0%
	Emergency Oral Contraceptives		
	Levonorgestrel 0.75 mg, 2 Tablets		
	Levonorgestrel 1.5 mg, 1 Tablet		
	Progestin-only Pills		
	Levonorgestrel 30 mcg 35 Tablets/Cycle		
	Copper-bearing Intrauterine Devices	0%	0%
	Calendar-based Awareness Methods		
	Male Condoms	0%	0%
	Female Condoms		

*Stocked according to plan rates presented are for all key products offered in each country, irrespective of the funder of those products.
**The PRH "method level" refers to the percent of facilities stocked out of all products the facility offers within a given method. A stockout at the "product level" refers to the number of sites stocked out of that particular product (depending on what is offered at a particular facility). A facility could be stocked out of one product and not stocked out at the method level.

		Central	Sub-National Level 1
MCH	**Task Order 4**	0%	4%
	Oxytocin (10 IU Injectable)	0%	0%
	MgSO4 (50% Injectable)	0%	0%
	Injectable Gentamicin	0%	25%
	ORS+zinc (Together)		
	Chlorhexidine Gel	0%	0%
	Amoxicillin (125mg or 250mg Dispersible Tablets)	0%	0%
	Zinc (Alone)	0%	0%
	ORS (Alone)	0%	0%
	PCV Vaccine		

B2. Percentage of stock status observations in storage sites, where commodities are stocked according to plan, by stock status (countries)



*Out of cycle

B2. Stocked according to plan - granular-level analysis

Analysis

- GHSC-PSM compiles indicator data for all countries in which the project maintains a field office, regardless of the extent of the project's engagement in the country. Therefore, the results in a given country for a specific point in time are not solely a consequence of GHSC-PSM's activities, but rather reflect the many stakeholders and elements that influence in-country supply chain performance.
- Overall, 24 percent of tracer products were stocked within the minimum and maximum levels at storage sites this quarter. This is a slight increase from 23 percent last quarter.
- Tracer products were slightly more likely to be stocked according to plan at the central level for HIV, malaria, PRH, and MNCH products (TO1: 38 percent central and 36 percent subnational 1; TO2: 31 percent central and 28 percent subnational 1; TO3: 31 percent central and 28 percent subnational 1; TO4: 19 percent central and 16 percent subnational 1).
- HIV products were stocked according to plan 36 percent of the time, an increase from last quarter (34 percent). First line ARVs were stocked according to plan 38 percent of the time at the central level (a marked decrease from Q2) and 56 percent of the time at the subnational level. Second line ARVs and first line pediatric ARVs both showed a slight decrease in stocked according to plan at central level to 43 percent and 41 percent, respectively. Viral load reagents being stocked according to plan showed a marked decrease from 60 percent to 25 percent and viral load consumables showed a marked decrease over last quarter from 44 percent to 25 percent. EID consumables showed a marked increase from 11 percent last quarter, rising to 22 percent and EID reagents showed a slight increase from 27 percent to 31 percent this quarter.
- Malaria products were stocked according to plan 28 percent of the time, an increase from last quarter's 24 percent. The products most likely to be stocked according to plan include include malaria rapid diagnostic tests (47 percent central level), AL 6X1 (39 percent central level, 30 percent sub-national 1 level), and AS/AQ 100/270mgx6 (40 percent central level, 32 percent sub-national 1 level).
- PRH products were stocked according to plan 16 percent of the time, a slight increase from 15 percent in the previous quarter. The products most likely to be stocked according to plan include depot medroxyprogesterone acetate 150mg (44 percent central level), Etonogestrel 68 mg/Rod, 1 Rod Implant (38 percent central level), levonorgestrel 0.75 mg, 2 tablets (31 percent central level), levonorgestrel 75mg/rod, 2 rod implant (41 percent central level), and calendar-based awareness methods (50 percent central level).
- MNCH products were stocked according to plan 16 percent of the time, a slight increase from 13 percent last quarter. The products most likely to be stocked according to plan include MgSO4 (50 percent Injectable) (38 percent central level), Injectable Gentamicin (25 percent central level), Zinc (Alone) (27 percent central level), and Chlorhexidine Gel (25 percent central level).

Data notes

- Q3 data do not include subnational level 2 observations as the data were deemed not complete enough to be included.
- Stocked according to plan rates presented are for all key products offered in each country, irrespective of the funder of those products.

B2. Stocked according to plan - country-level analysis

Country Analysis	
Angola	Angola has reported an overall increase in sites observed as stocked according to plan from 11 percent to 14 percent. This continues an upward trend from Q1 where only 5 percent of sites were stocked according to plan. HIV tracer products overall decreased in stock according to plan observations as stock was pushed down from central level overstock, creating overstock in provincial storage sites. For malaria products, AS/AQ 100/270mgx3 increased in stock according to plan observations from 12 percent to 81 percent. For PRH products, there was an overall decrease to 8 percent from 12 percent last quarter. During the reporting period, three contraceptives were added to the list of observations. These contraceptives include Levonorgestrel 0.75mg, 2 tablets, Levonorgestrel/Ethinyl Estradiol 150/30 mcg 28 Tablets/Cycle, and Norethisterone enanthate. These new products contributed to the decrease in the overall figure.
Botswana	Stocked according to plan rates have improved for RTKs, but ARVs and lab commodities saw increases in understocking and stockouts. Procurement processes have been hindered by delays and small-quantity microprocurements, which are insufficient to bring stock levels into balance. Seconded staff to CMS are supporting supply planning and close stock monitoring to improve stock levels.
Burkina Faso	Only one product (LLINs) was stocked according to plan this quarter in Burkina Faso's central medical store (CAMEG), since most of the districts had recently procured large quantities of antimalarials in advance of the high malaria transmission season in June. The overstock of SP was due to an unexpected donation from Saudi Arabia that had been organized several years ago. However, the current stock does not expire until October 2020. The overstock of AS/AQ is due to low consumption, as AL is more popular. To ensure appropriate stock levels for the next quarter, the project will follow up with all partners to ensure timely delivery of expected orders for Quarter 4, and monitor consumption of overstocked products to avoid expiries.
Burma	Burma reported an overall increase in sites stocked according to plan from 52 percent in Quarter 2 to 67 percent in Quarter 3. However, ARVs were overstocked due to the overestimation of the second line ART percentage in last year's forecast. Burma has been able to start reporting stock observations for malaria commodities at the subnational level 1 for the first time. Their first report was that 100 percent of observations at one site were stocked according to plan for AL 6x4 and malaria RDTs. Burma anticipates being able to report central level stock status observations next quarter.
Cameroon	About one-third of stock observations were within min/max levels at the regional level, but understocking was also widespread (53 percent of observations). Low stock at the central level has impacted the ability of the regional medical stores to keep sufficient stock levels as well.
Ethiopia	In Ethiopia, a total of 592 stock status observations were conducted in 17 Pharmaceuticals Fund and Supply Agency (PFSA) warehouses. The average percentage of stock according to plan for all commodities (all TOs) was 19 percent, compared to 14 percent last quarter. At central level, stocking according to plan decreased significantly from 24 to 9 percent, while it increased at the regional (hub) level from 13 to 19 percent. The central level decline was likely due to the national push of products to lower levels to ensure an uninterrupted supply at the facility level. In addition, the observed poor overall stocked according to plan rates in the current quarter could be due to the pre-inventory activities in which the central PFSA was forced to refill hubs with maximum stock levels prior to closing for the annual inventory. Task Order 3 had a higher stocked according to plan rate (23 percent), whereas it was only 12 percent for Task Order 4.
Ghana	While GHSC-PSM Ghana reported on two months' worth of observations last quarter, this quarter they could report on observations from all three months in the reporting period. Overall, the rates for all stock statuses remained fairly consistent with the previous quarter, with the largest difference being the understocked rate which increased from 33 percent last quarter to 39 percent this quarter.
Guinea	Guinea improved its stocked according to plan rate significantly from 8 percent last quarter to 29 percent. The breakdown by task order was 14 percent for Task Order 2 and 33 percent for Task Order 3. There were no stockouts of any tracer product.
Haiti	Forty-one percent of observations this quarter were stocked according to plan in Haiti, compared to 45 percent last quarter. A quarter of observations were understocked, and there were no stockouts of any tracer products. GHSC-PSM will continue to monitor the mission's strategy shift to procure RTKs by quota and adjust inventory accordingly. The project is also continuing to monitor the Ministry of Health's new strategy in favor of long-term contraceptive methods.

Country Analysis	
Indonesia	GHSC-PSM Indonesia reported on the central level for the first time. Like last quarter, GHSC-PSM Indonesia was able to report on three tracer products -- most used 1st line ARV, most used 2nd line ARV, and most used 1st line pediatric ARV. All three tracer products reported two stocked according to plan observations. Most used 1st line ARV and most used 2nd line ARV each reported one understocked observation, while the most used 1st line pediatric ARV reported the sole stockout observation.
Liberia	Stocked according to plan rates are 35 percent for malaria products (based on three months of observations) and 38 percent for family planning (based on two months of observation). A stockout of combined oral contraceptives is expected to be alleviated with a shipment scheduled for next quarter.
Madagascar	Fourteen percent of observations across supply chain levels in Madagascar were stocked according to plan this quarter, compared to 15 percent last quarter. At the central level the rate was only 6 percent, with no observations of Task Orders 3 or 4 tracer products stocked according to plan. At the district level, the rate was 14 percent across task orders. Malaria product stocking was affected by a shipment delay by another donor, as well as the unexpected increase in malaria cases. Both Task Order 3 and Task Order 4 rates were also affected by shipment delays, as well as the ending of USAID funding for Task Order 3 procurement in Madagascar.
Mali	Mali reported for the first time this quarter. Its stocked according to plan rate was 23 percent, ranging from 19 percent for Task Order 2 to 28 percent for Task Order 4. Overall stockouts at the central level were 30 percent, ranging from 19 percent for Task Order 2 to 39 percent for Task Order 4. Several products were stocked out for the quarter, among them combined oral contraceptives, AL 6x3, and injectable gentamicin.
Mozambique	Stocked according to plan decreased from 41 percent in FY18 Q2 to 31 percent this quarter. This is attributed to the fact there was a push during the last quarter to replenish lower levels in the supply chain, delays in shipments, and shortages of certain tracer products at the central level. This coincides with the increase in understocked observations this quarter (40 percent) from last quarter (23 percent). The stockout rate decreased from 12 percent last quarter to 7 percent this quarter, while the overstocked rate remained fairly consistent.
Namibia	Stocking within min/max levels has remained consistent from the previous quarter, but understocking has increased. A government tender for ARVs has been canceled, leaving no contract in place to ensure a stable supply. While orders are in the pipeline, some ARVs may not arrive in time. GHSC-PSM facilitated a supply planning exercise to initiate an emergency government procurement and is supporting stock redistributions where feasible. The project also supported a one-day workshop that brought together key stakeholders to review the causes of the tender cancelation and make edits to the standard bidding documents prior to re-advertisement of the ARV tender.
Nepal	Nepal's storage data refers to stock status observed in January, in order to align with data reported for indicator B1. This quarter Nepal reported only 4 percent of sites stocked according to plan, a slight decrease from 6 percent last quarter. There are significant stockouts of MgSO4. This supply plan issue was identified in May and expedited procurement is currently underway to replenish stock as soon as possible.
Nigeria	For Nigeria, overall 55 percent of observations of products were stocked according to plan across all TOs, with 95 percent being either stocked according to plan or overstocked; this is a marked increased compared to last quarter where 55 percent of the observations were understocked. For TO1 in particular, HIV-EID reagent was overstocked due to a relatively low consumption rate compared to projections, while consumables were also overstocked with more than 10 months. That said, there is limited risk of expiry of the consumables as the bulk of them are due to expire in 2020 and 2021.
Pakistan	Pakistan’s overall percentage stocked according to plan has remained steady at 25 percent. Stockouts have increased to 13 percent from zero percent last quarter, shifting from a higher value (25 percent) of understocked during Q2. Due to quarterly distribution, most districts approach low stock levels as replenishment of stocks is due around the reporting time. This is one of the contributing factors toward this indicator’s poor performance. Furthermore, lack of formalized distribution planning at the district & SDP level makes averting stockouts challenging. The GHSC-PSM team is working with the government to develop and implement distribution plans accordingly.
Rwanda	Overall, Rwanda saw a slight decrease in products that were stocked out (5 percent in Q2 FY18 to 1 percent in Q3 FY18), and an increase in products that were stocked according to plan (17 percent in Q2 FY18 to 20 percent in Q2 FY18), while those that were overstocked decreased slightly (38 percent in Q2 FY18 to 35 percent in Q3 FY18).

Country Analysis	
Uganda	Overall, stocked according to plan increased from 25 percent to 33 percent across all task orders. Looking at TO1, 56 percent of commodities were stocked according to plan compared to 44 percent in Q2. This shows that there was an improvement in TO1 commodity stock. This was mainly due to on-time delivery that ensured adherence to supply plans, resulting in stock levels for more items staying between minimum and maximum levels. TO2 commodities were stocked according to plan at 6 percent compared to 11 percent for Q2. This shows that there was reduction in TO2 that were stocked according to plan, although it should be noted that 94 percent of TO2 commodities were overstocked but without risk of expiry. This occurred due to an initial delay, after which all commodities came in the country at once.
Vietnam	Vietnam continues to have excellent performance in this indicator. For a second quarter in a row they reported 100 percent of sites to be stocked according to plan. It should be noted that this is a total of six observations for the quarter.
Zambia	Zambia's stocked according to plan rate decreased slightly from 38 to 34 percent, while stockouts fell sharply from 34 to 9 percent. HIV/AIDS products were the most likely to be stocked according to plan, at 50 percent, while MNCH products were stocked according to plan only 17 percent of the time. GHSC-PSM is supporting Medical Stores Limited (MSL) by providing transportation and internal monitoring, which should help to more efficiently distribute overstocked commodities such as HIV EID lab reagents. Donor shipments expected in August and October will help address the understocking of condoms. Upcoming shipments are also expected to relieve the understocking of several formulations of artemether lumefantrine. Similarly, for Task Order 3, recent and upcoming shipments should relieve understocking of combined oral contraceptives and injectable contraceptives. For Task Order 4, GHSC-PSM has stepped in to supplement government efforts with a shipment expected by November 2018 for products such as magnesium sulphate, injectable gentamicin, and oxytocin.
Zimbabwe	Stocked according to plan rates have fallen and understocks have increased. ACTs are understocked due to funding gaps and shipment delays due to partner transitions. PMI has placed emergency orders that are scheduled to arrive in September. Additional shipments of adult and pediatric ARVs and malaria RDTs are expected to arrive by the end of July.

Data Notes

▸

B3. Service delivery point (SDP) reporting rate to the logistics management information system (LMIS)

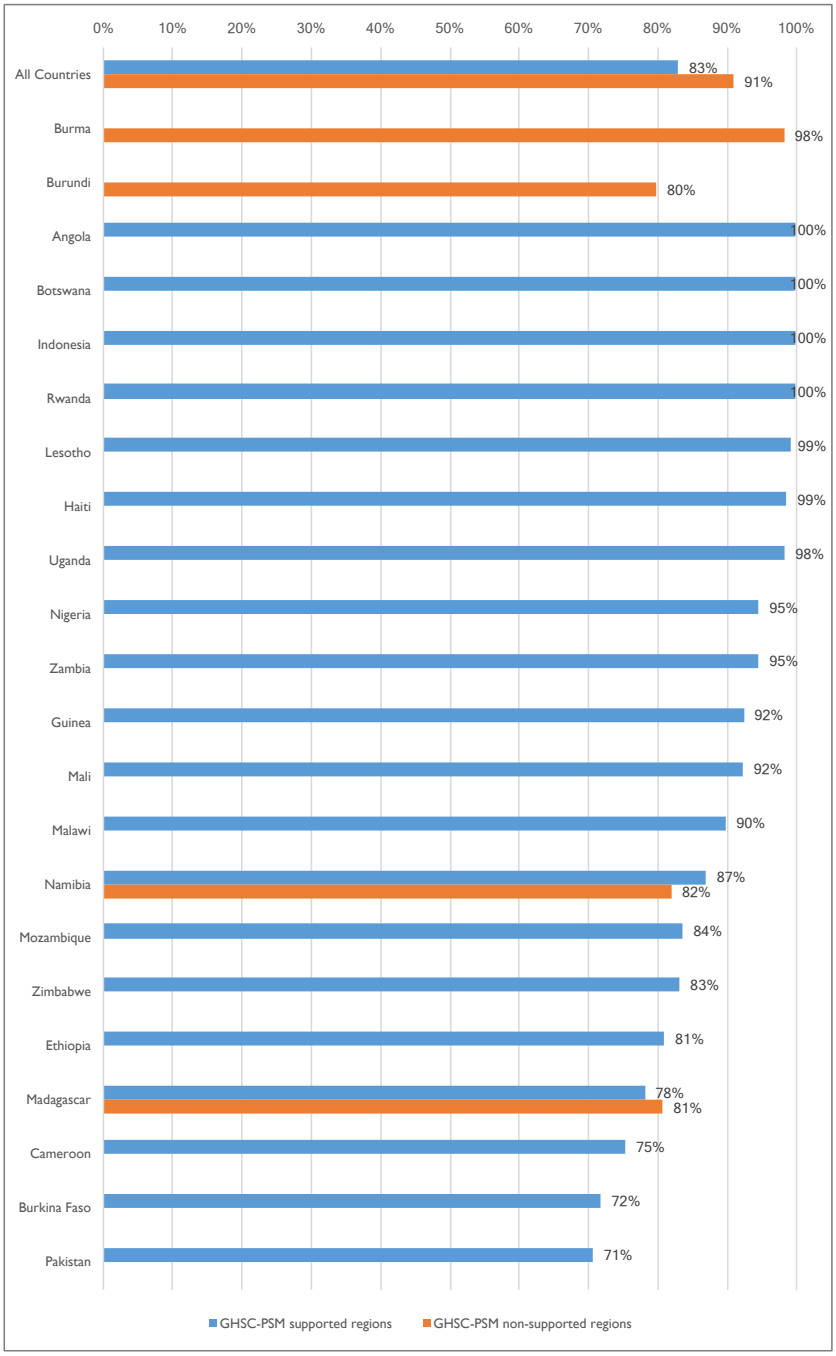
Measure Definition

Numerator: Number of SDPs whose LMIS report(s) or order form(s) were received at the central level within 30 days of the specified in-country deadline.
Denominator: The total number of SDPs in-country that are required to report.
Purpose: This indicator determines whether timely SDP-level data are available to supply chain managers, who use these data for decision-making. It illustrates whether SDP data are flowing smoothly up through the LMIS without becoming stuck in bottlenecks along the way. Both timely submission of reports by the SDPs, as well as timely aggregation and/or data entry at any intermediate levels, are used to determine this indicator's performance.

Task Order	Achievement FY2018 Q3	Achievement Year to Date
TO1	91%	88%
TO2	89%	87%
TO3	80%	78%
TO4	81%	72%
All TOs	85%	81%

▸ Targets for this indicator are set at the country level

Indicator Performance



Analysis

- The overall reporting rates has remained at 85 percent since Q2, with all task orders performing within 1-3 percentage points of their previous result.
- The reporting rate from Botswana's 33 supported health facilities increased to 100 percent this quarter, due to dedicated follow up by the Logistics Management Unit and support from the newly deployed Site Monitors.
- Cameroon's LMIS reporting rate rose from 63 percent in Q2 to 75 percent in Q3. The increase is mainly credited to the involvement of the districts, which are responsible for monthly data reviews, target setting, and reporting reminders to the health facilities.
- Reporting rates in Malawi continued to increase this quarter, reaching 95 percent for malaria and 90 percent across all program areas. The project team notes strong commitment at the district level to follow up with health facilities on their monthly submissions. GHSC-PSM is also providing continuous technical support to ensure smooth operation of OpenLMIS.
- In Namibia, 83 percent of facilities submitted their reports on time. Additionally, a new reporting template was rolled out during the quarter that incorporates new ARV formulations and HIV rapid tests kits.
- Zimbabwe's reporting rates have gradually improved over the past few quarters, rising to 83 percent this quarter from 65 percent in Q2. The improvements are due to engagement efforts between NatPharm and partners including GHSC-PSM.
- While Ethiopia's overall reporting rate remained at 81 percent, it's Task Order 1 rate increased from 81 percent last quarter to 91 percent. This increase may be attributed to the project's providing regular feedback to SDPs, as well as a recent change in the algorithm for determining the list of SDPs which should be reporting, based on programmatic relevance and sufficient data quality, which brought the denominator down from 1496 to 1239. The criteria to select SDPs include: 1) task order priority (provision of ART services, PEPFAR priority towns (HIV RTKs), lab monitoring sites, PMI EUV sites, APTS sites, and RMNCH priority sites), 2) high volume sites (including sites where PFSA is collecting data for national quantification), and 3) SDPs that directly report to PFSA and which are directly supplied by PFSA.
- Mali's Task Order 1 reporting rate of 11 percent fell well below the baseline value of 28 percent, while reporting for Task Orders 2 and 3 increased from 91 to 95 percent.
- Burkina Faso's reporting rate dropped from 87 to 72 percent due to a strike of health personnel.

Data Notes

- **Targets for this indicator are set at the country level.**
- SDPs located in non-GHSC-PSM-supported regions are not included in the task order or project level totals reported at the top right.
- Certain countries have limited access to SDP data and report stockouts (B1) and are reporting rates from a small number of sites. These include Angola (21 sites), Botswana (33), Indonesia (12), and Namibia (64). See the Denominator Annex at the end of this report for a complete listing of country denominators by task order.

B3. Service delivery point (SDP) reporting rate to the logistics management information system (LMIS)

Country SDP Reporting Rates by Task Order		Angola	Botswana	Burkina Faso	Burma - Not Supported	Burundi - Not Supported	Cameroon	Ethiopia	Guinea	Haiti	Indonesia	Lesotho	Madagascar	Madagascar - Not Supported	Malawi	Mali	Mozambique	Namibia	Namibia - Not Supported
HIV	TO1	100%	100%		93%	83%	75%	91%		99%	100%	99%			92%	11%	97%	87%	82%
Malaria	TO2	100%		72%	98%	81%		76%	100%				94%	96%	95%	95%	65%		
PRH	TO3					75%		91%	84%	98%			87%	89%	84%	95%	82%		
MCH	TO4							67%					53%	56%	88%	95%	53%		

Country SDP Reporting Rates by Task Order		Nepal*	Nigeria	Pakistan	Rwanda	Uganda	Zambia	Zimbabwe
HIV	TO1		97%		100%	99%	94%	82%
Malaria	TO2		95%		100%	98%	95%	84%
PRH	TO3	42%	91%	71%	100%		95%	
MCH	TO4	42%			100%		95%	

Data Notes

- Country and task order reporting rates are for service delivery points located in GHSC-PSM-supported regions, unless otherwise noted. Relevant regions for this indicator are the first subnational administrative units below the central level. A region is considered "supported" by GHSC-PSM if the project is providing sustained support to that region, meaning that it has one or more ongoing work plan activities directed at that region and can be expected to have some eventual influence on SDP-level supply chain outcomes there.
- Data for SDPs in non-supported regions are excluded from the project- and task order-level summary totals reported on the previous page.
- Blank boxes in the tables above and to the left indicate that the associated task order is operating in the country, but that there is no LMIS for reporting or no GHSC-PSM access to reporting for that health element.

B6. Percentage of required supply plans submitted to GHSC-PSM during the quarter

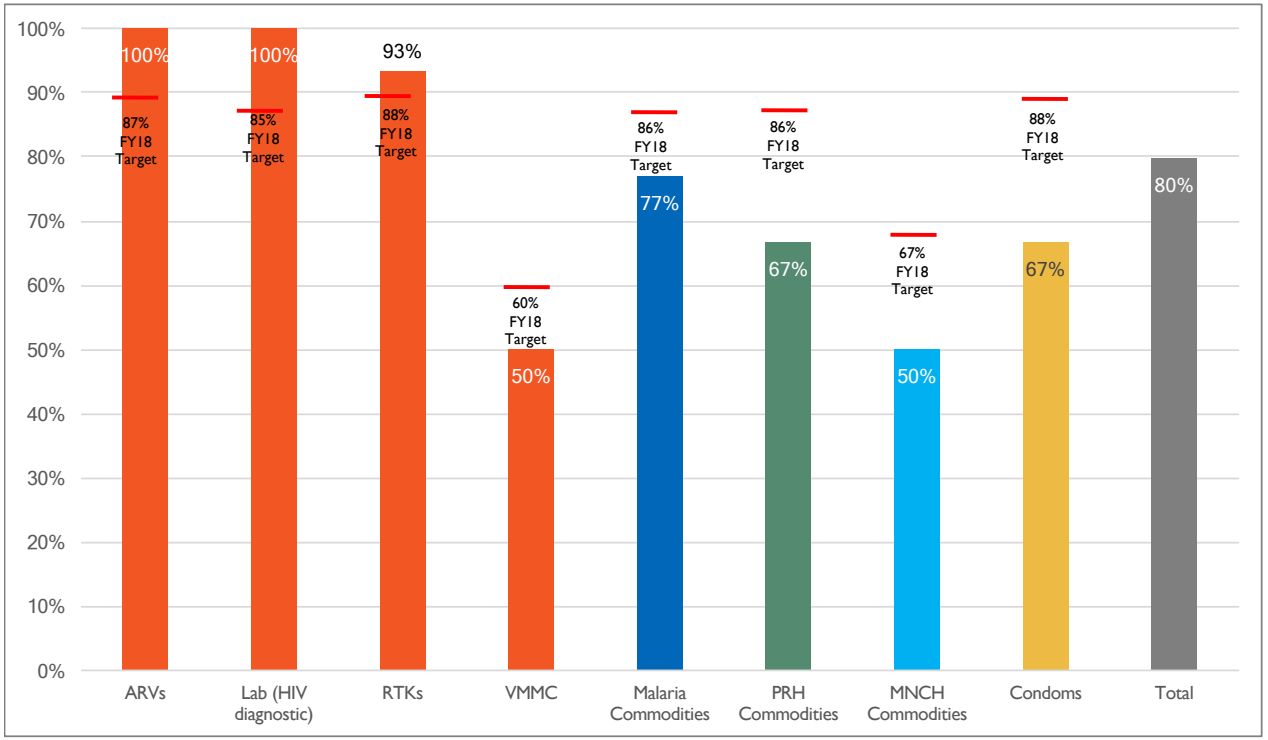
Measure Definition

Numerator: Number of required supply plans that were submitted to GHSC-PSM in the quarter.
Denominator: Total number of required supply plans.
Purpose: Regular visibility into country supply plans is integral to accurate forecasting, which is at the root of commodity security.

Achievement

Commodity Group	FY18 Target	FY2018 Q3	Year to Date
ARVs	87%	100%	91%
Lab (HIV diagnostic)	85%	100%	97%
RTKs	88%	93%	83%
VMMC	60%	50%	67%
Malaria Commodities	86%	77%	85%
PRH Commodities	86%	67%	69%
MNCH Commodities	67%	50%	44%
Condoms	88%	67%	62%
Total	N/A	80%	77%

Indicator Performance FY2018 Q3



Analysis

- During Q1, the Forecasting and Supply Planning (FASP) technical working group completed the supply plan expectation exercise, establishing the universe of country/commodity supply plans that are required quarterly. The outcome of this exercise is a verified reference point in determining supply plan expectations and a critical tool for the identification of countries on which to focus technical assistance to improve performance.
- Across all commodity groups, 75 quarterly supply plans were submitted, representing 80 percent of the Q3 expectation. This ranged from 100 percent for ARVs and lab (HIV diagnostic), 77 percent for malaria commodities, and 67 percent for PRH commodities, to 50 percent (3 of 6) for MNCH commodities.
- Malawi only submitted one of five expected supply plans this quarter. The supply plans have been completed but have not been shared with GHSC-PSM. Moving forward, GHSC-PSM will reassess what supply plans Malawi should be expected to submit.
- The supply plan submission rate overall is up from last quarter even though the raw number of supply plans is lower by 1. ARVs, Lab (HIV Diagnostic), and RTKs have all seen marked increases while malaria and PRH are both down 9 percent and 7 percent, respectively.

Data Notes

- The required supply plans by commodity group and country are shown on the following page.
- Targets reflect anticipated project performance by end of FY18 (September 30, 2018).

B6. Percentage of required supply plans submitted to GHSC-PSM during the quarter

Commodity	Country	Submitted to GHSC-PSM
ARV	Botswana	Yes
	Burundi	Yes
	Cameroon	Yes
	Côte Ivoire	Yes
	Democratic Republic of Congo	Yes
	Ghana	Yes
	Haiti	Yes
	Mozambique	Yes
	Nigeria	Yes
	Rwanda	Yes
	Tanzania	Yes
	Uganda	Yes
	Vietnam	Yes
	Zambia	Yes
Lab	Burundi	Yes
	Cameroon	Yes
	Côte Ivoire	Yes
	Democratic Republic of Congo	Yes
	Ethiopia	Yes
	Haiti	Yes
	Mozambique	Yes
	Nigeria	Yes
	Rwanda	Yes
	Tanzania	Yes
	Uganda	Yes
	Zambia	Yes
RTK	Botswana	Yes
	Burundi	Yes
	Cameroon	Yes
	Côte Ivoire	Yes
	Democratic Republic of Congo	Yes
	Ethiopia	Yes
	Ghana	Yes
	Haiti	Yes
	Malawi	No
	Mozambique	Yes
	Nigeria	Yes
	Rwanda	Yes
	Tanzania	Yes
	Uganda	Yes
	Zambia	Yes
VMMC	Malawi	No
	Mozambique	Yes
	Tanzania	No
	Uganda	Yes

Commodity	Country	Submitted to GHSC-PSM
Malaria	Angola	Yes
	Burkina Faso	Yes
	Burundi	Yes
	Ghana	Yes
	Kenya	No
	Madagascar	No
	Malawi	Yes
	Mozambique	Yes
	Nigeria	Yes
	Rwanda	No
	Tanzania	Yes
	Uganda	Yes
	Zambia	Yes
PRH	Burundi	No
	Democratic Republic of Congo	No
	Ethiopia	Yes
	Ghana	Yes
	Haiti	Yes
	Kenya	No
	Madagascar	No
	Malawi	No
	Mozambique	Yes
	Nepal	Yes
	Nigeria	Yes
	Rwanda	Yes
	Tanzania	Yes
	Uganda	Yes
	Zambia	Yes
MNCH	Ghana	No
	Haiti	No
	Madagascar	No
	Mozambique	Yes
	Rwanda	Yes
	Zambia	Yes
Condoms	Côte Ivoire	No
	Democratic Republic of Congo	No
	Ethiopia	Yes
	Ghana	Yes
	Haiti	Yes
	Malawi	Yes
	Mozambique	Yes
	Nepal	Yes
	Nigeria	Yes
	Rwanda	Yes
	Senegal	No
	eSwatini	No
	Tanzania	Yes
	Uganda	Yes
	Zambia	Yes

C1. Number of innovations (including operations research studies) that were developed, implemented, or introduced and are related to health commodity market or supply chain best practices

Measure Definition

Number of innovations: An innovation refers to new technologies, new products, new approaches, and/or operational research studies developed, implemented, or introduced during the period of reporting.

Task Order	Achievement FY2018 Q3	Achievement Year to Date
TO1	2	6
TO2	1	3
TO3	2	7
TO4	0	1
Cross-Cutting	4	11
All TOs	9	28

▸ Target not required for this indicator.

Description of Innovation		
Global/Country	Type of Innovation	Brief Description
TO1		
Indonesia	New Approach	To improve ARV supply chain management practices, GHSC-PSM Indonesia helped develop the SOP for and implement the decentralization of ARVs in Jakarta province. ARV distribution was previously done by the central level, but the supply being distributed did not always adequately reflect demand at lower levels in the supply chain. The decentralization of ARVs in Jakarta province will enable each district to manage ARV stock at district warehouses, and the SOP will provide guidance to DHO staff in managing those ARVs.
Namibia	New Technology	GHSC-PSM implemented an electronic data synchronization technique to securely collect data and update the electronic dispensing tool (EDT) for 61 decentralized ART sites in Ohangwena and Kavango regions. The Ministry of Health and Social Services has been decentralizing ART services to lower level health facilities to increase ART coverage in Namibia. However, data captured in paper-based tools commonly used at primary health care facilities seldom reached the district level reporting systems. A version of EDT was created to resolve this challenge, but gaps persisted due to an inability to sync data from remote sites with district-level systems. To address this problem, GHSC-PSM developed and implemented EDT Data Sync (EDS) software, a flash drive-based software used to collect data from remote sites to update EDT systems at district hospitals and vice versa. Because of this intervention, approximately 8,000 ART patients that were deemed lost to follow up (LTFU) in the two regions were brought back into active status in the reporting tools at main sites. This intervention has therefore improved ART reporting and will be scaled up in other high burden regions in the next twelve months.
TO2		
Mozambique	New Approach	GHSC-PSM Mozambique is piloting a project on LLIN distribution for students (grades 1, 3, and 5) in schools in the district of Namarrói in the province of Zambezia. In collaboration with the National Malaria Program and VectorWorks, a PMI-funded global project, GHSC-PSM Mozambique conducted a feasibility study for a distribution pilot project in the Zambezia province. As recommended by the WHO, the objective of this pilot is to establish a new distribution channel in schools to maintain a high level of distribution and use of LLINs between two universal distribution campaigns. Since May 2018, GHSC-PSM has distributed LLINs in all schools in the district of Namarrói (Zambezia).

Description of Innovation		
Global/Country	Type of Innovation	Brief Description
TO3		
Nepal	New technology	In Nepal, lack of an eLMIS has made data visibility across all tiers of supply chains and of all types of health commodities difficult. To address that, Nepal has begun implementation of a new eLMIS approach that integrates the different sources of information collected through separate systems. Considering the difficult and challenging geographical terrain and infrastructure barriers, three different modules of eLMIS were developed to address different types of challenges. The first is an online module for the sites having reliable internet and infrastructure to run a web-based system. The second is an offline module for the sites having poor internet service. It syncs the eLMIS data with the main server periodically when internet service is available and can also sync the data on low bandwidth. The third is a mobile application that runs on the Android OS and collects real-time data from health facilities. These three modules are collecting logistics data from all levels of the supply chain for health managers to use in decision-making.
Pakistan	New technology	In Pakistan, the M&E team worked with the MIS team to develop an LMIS interface for internal project DevResults reporting. This dashboard will assist the M&E team to generate and compile quarterly data for DevResults indicators data on a one-click basis and will automate the process of computing data for quarterly indicators; this will subsequently help to ensure both data accuracy and validity. Development of the DevResults Dashboard is currently undergoing its Quality Assurance process and will be made available on the eLMIS menu after the quality assurance process is completed. It is important to note that this dashboard will only be accessible for internal project users for DevResults reporting purposes. The M&E team also plans to automate data compilation and analysis of the remaining M&E indicators in future.
TO4		
Cross-Cutting		
Ethiopia	New approach	Result Oriented Site Level Support (ROSS): GHSC-PSM has designed a routine comprehensive health supply chain and facility-level supportive supervision tool to provide quarterly technical support on the various technical areas the project is working on. GHSC-PSM selected more than 600 health facilities, developed a comprehensive checklist, supportive supervision standard operating procedures, and a database for aggregation and analysis of the data obtained from the supervision. The technical areas of support include HIV/AIDS commodity management (ARVs, RTKs, viral load/EID management, chemistry, hematology), antimalarial commodity management, RH/FP and MNCH commodity management, auditable pharmaceutical transactions and services (APTS) implementation, health supply chain M&E, clinical pharmacy, rational drug use, selection, quantification, storage management, dispensary management, LMIS, laboratory machine functionality and management support. The system includes 48 program-specific tracer products from the different task orders. Support will be provided to build all system components of the health commodities supply chain and pharmacy services. It uses indicators to measure the maturity level of health facilities to provide appropriate support in collaboration with health administrative units. The supervision will systematize facility-level support, reduce repeated travel to health facilities, optimize use of staff time, and is expected to significantly increase access to data and the ability to conduct indicator-based measurement of performance, to enable program managers to better design interventions. GHSC-PSM began providing the supportive supervision in 300 selected health facilities using the newly designed checklist last quarter and continued the support this quarter.
South Sudan	New approach	GHSC-PSM South Sudan has implemented and is expanding a call center to collect stock status outside of the central medical store. This information will be compared to the distribution data from the central medical store, which will help prevent and mitigate stockouts and estimate consumption. This will also increase quantification and forecasting accuracy. The LMIS in-country doesn't function well so many of these routine activities aren't completed by the LMU.

Description of Innovation		
Global/Country	Type of Innovation	Brief Description
Malawi	New approach	The project supported the roll out of a new supportive supervision approach in Malawi, aimed at strengthening the supervision and mentorship capacity of district managers, and improving commodity and data management. While the old supportive supervision approach focused heavily on supply chain data collection with limited attention to staff supervision and mentoring, the new approach emphasizes joint problem-solving, mentoring, and two-way communication between the supervisor and supervisees, based on performance gaps identified during monitoring. The new approach is expected to strengthen relationships and teamwork, optimize resource allocation, and foster high standards, which will ultimately promote consistent availability of essential medicines and medical supplies at all levels of the health system.
Zambia	New approach	GHSC-PSM, in partnership with the Ministry of Health, has been working to initiate a supply chain champion mentorship initiative (SCCI) aimed at moving from the traditional classroom-based mode of capacity building, which focuses on skills and knowledge transfer, to a new approach where the focus and emphasis are on the exchange and transfer of best practices between public health facilities of the same level. The purpose of the pilot was to test a newly developed standardized assessment tool to identify high-performing facilities. Facilities were graded according to their performance in the management of ARVs, essential medicines, HIV test kits, and laboratory commodities. Nine facilities in Lusaka district were selected and assessed. Facilities were first scored separately under the pharmacy and laboratory components, and then the two components were averaged to create a total score. The assessment provided key information on the performance of the logistics systems at the facilities visited, identifying gaps in the management of health commodities both in pharmacy and lab. Activities such as SCCI can help bridge the gap by pairing better performing with underperforming facilities to share insights and best practices.

C2. Number of people trained by supply chain functional area

Measure Definition

Number of people trained. "People trained" refers to any type of participant, student, or learner in a training event, regardless of its duration. People trained may refer to different categories of participants (e.g., physicians, nurses, social workers).
Purpose: This indicator measures supply chain training activity. It provides insight into whether the project is making progress toward its capacity-building objectives and can help track progress from one year to the next.

Task Order	Achievement FY2018 Q3	Achievement Year to Date
TO1	725	2,343
TO2	1,028	3,211
TO3	565	2,600
TO4	0	225
Cross-TO	2,344	7,129
All TOs	4,662	15,508

Indicator Performance

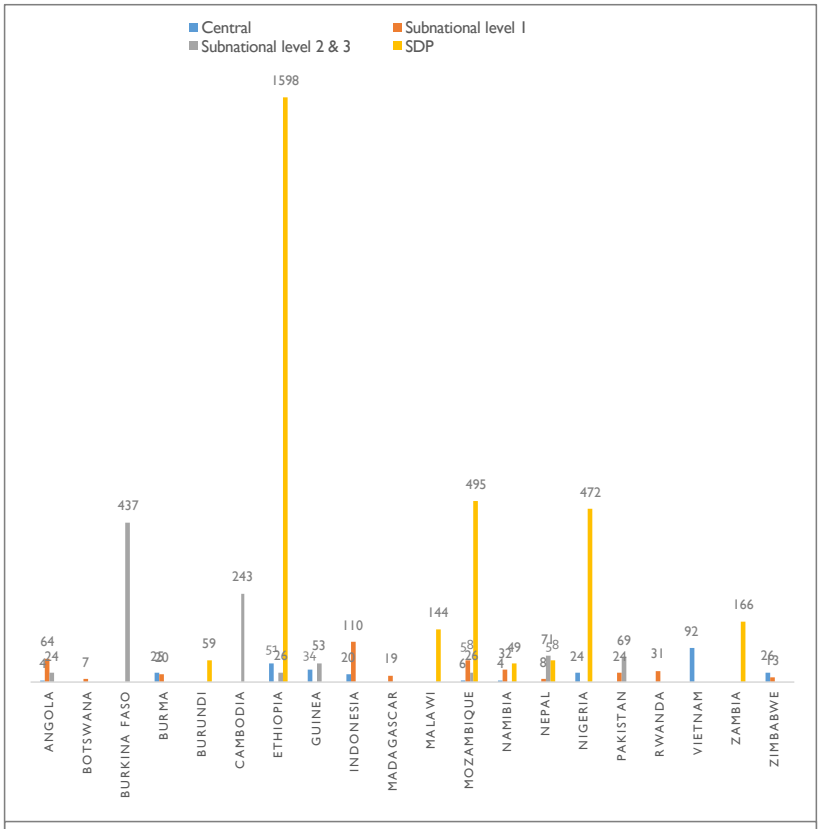
	C2. Number of people trained	Central	Subnational Level 1	Subnational Level 2 & 3	SDP
HIV	**Task Order 1**				
	Forecasting and Supply Planning	145	71		
	Procurement				
	Quality Assurance				
	Warehousing and Inventory Management	32	114		60
	Transportation and Distribution				
	MIS		7		34
	Governance and Financing				
	Human Resources and Capacity Development				72
	Monitoring and Evaluation				
	Strategy and Planning				190
Malaria	**Task Order 2**				
	Forecasting and Supply Planning				
	Procurement				
	Quality Assurance				
	Warehousing and Inventory Management		64	36	
	Transportation and Distribution				233
	MIS			668	
	Governance and Financing				
	Human Resources and Capacity Development				
	Monitoring and Evaluation				
	Strategy and Planning				27
PRH	**Task Order 3**				
	Forecasting and Supply Planning				
	Procurement				
	Quality Assurance				
	Warehousing and Inventory Management			69	472
	Transportation and Distribution				
	MIS		24		
	Governance and Financing				
	Human Resources and Capacity Development				
	Monitoring and Evaluation				
	Strategy and Planning				

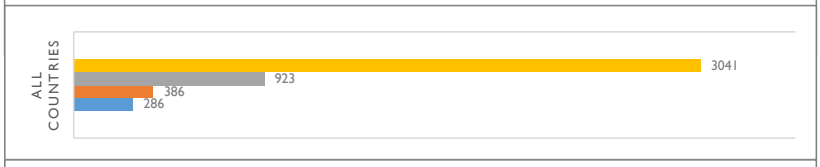
	C2. Number of People Trained	Central	Subnational Level 1	Subnational Level 2 & 3	SDP
MCH	**Task Order 4**				
	Forecasting and Supply Planning				
	Procurement				
	Quality Assurance				
	Warehousing and Inventory Management				
	Transportation and Distribution				
	MIS				
	Governance and Financing				
	Human Resources and Capacity Development				
	Monitoring and Evaluation				
	Strategy and Planning				
Cross-TOs	**Cross-TO**				
	Forecasting and Supply Planning				
	Procurement				
	Quality Assurance				106
	Warehousing and Inventory Management	52	3	19	135
	Transportation and Distribution				
	MIS		45	131	148
	Governance and Financing				1156
	Human Resources and Capacity Development	34			408
	Monitoring and Evaluation		27	26	
	Strategy and Planning	23	31		

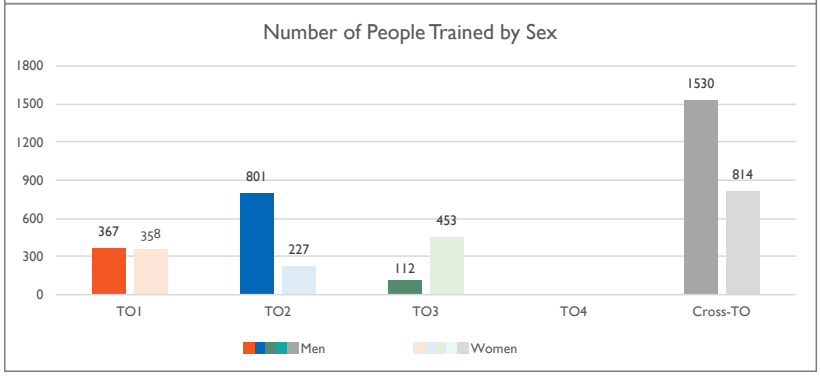
Data Notes

- The number of participants in trainings that were TO-specific are presented in the TO boxes, while trainings that covered multiple TOs are presented as such.
- To demonstrate the number of people trained by funding source, participants in trainings that covered multiple TOs were divided according to the TO funding split in each country. Those participants were added to the TO-specific participants to determine the number of people trained by funding source. These data are presented on the following page.
- Target not required for this indicator.

C2. Number of people trained by task order, country, sex, and funding source

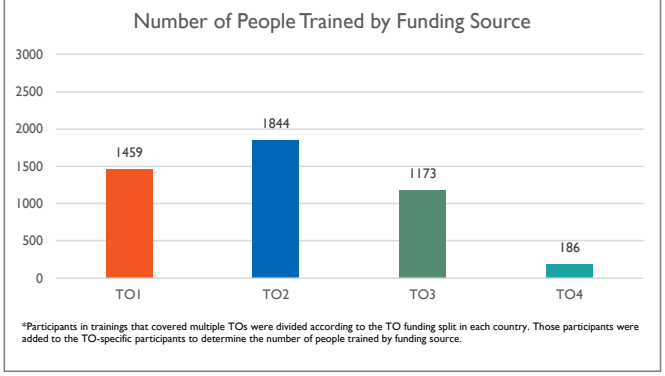






Analysis

- The number of countries implementing training activities rose this quarter, from 17 to 20, although the overall number of participants declined following a sharp increase last quarter. The total number of participants trained this fiscal year has now exceeded 15,000.
- Ethiopia led the project this quarter, training 1,675 participants across supply chain levels. Topics included transportation operations assessments, ISO9001:2015 quality management, good dispensing practices, auditable pharmaceutical transaction and services, and several others.
- Mozambique trained a total of 587 professionals in five thematic areas across all levels of the supply chain. The training areas included warehousing and inventory management, monitoring and evaluation, MIS, transportation and distribution, and human resources capacity development. About 40 percent of the people trained (234 teachers from 11 schools) were trained on logistics forms, procedures, malaria communication and mosquito-net usage in anticipation of the LLIN distribution pilot project in Zambezia province.
- In Nigeria, 472 service providers were trained in Ebonyi State in Q3, where participants gained knowledge on contraceptive commodities reporting tools. The trainings included a significant amount of active participation during the hands-on interactive sessions and practice exercises on how to complete the various forms. Furthermore, 24 participants from Sokoto, Kebbi, and Bauchi States LMCU and Ministries of Health were trained on supply chain management. Participants engaged in a range of activities, including group practical exercises, demonstrations, and hands-on exercises to increase their knowledge and skills in a various activities, including but not limited to using the LMIS, inventory control systems, and storage & quality assurance.
- In Burkina Faso, the project trained district pharmacists in warehousing and inventory management. It also conducted a broad MIS training, including participants from the regional, district, and SDP levels.
- In Cambodia, training of forest rangers from the Provincial Department of Energy (PDoE) continued to progress in Q3. PDoE rangers were trained in effective distribution of LLIN/LLIHN to mobile and migrant populations in the malaria contaminated zone.



*Participants in trainings that covered multiple TOs were divided according to the TO funding split in each country. Those participants were added to the TO-specific participants to determine the number of people trained by funding source.

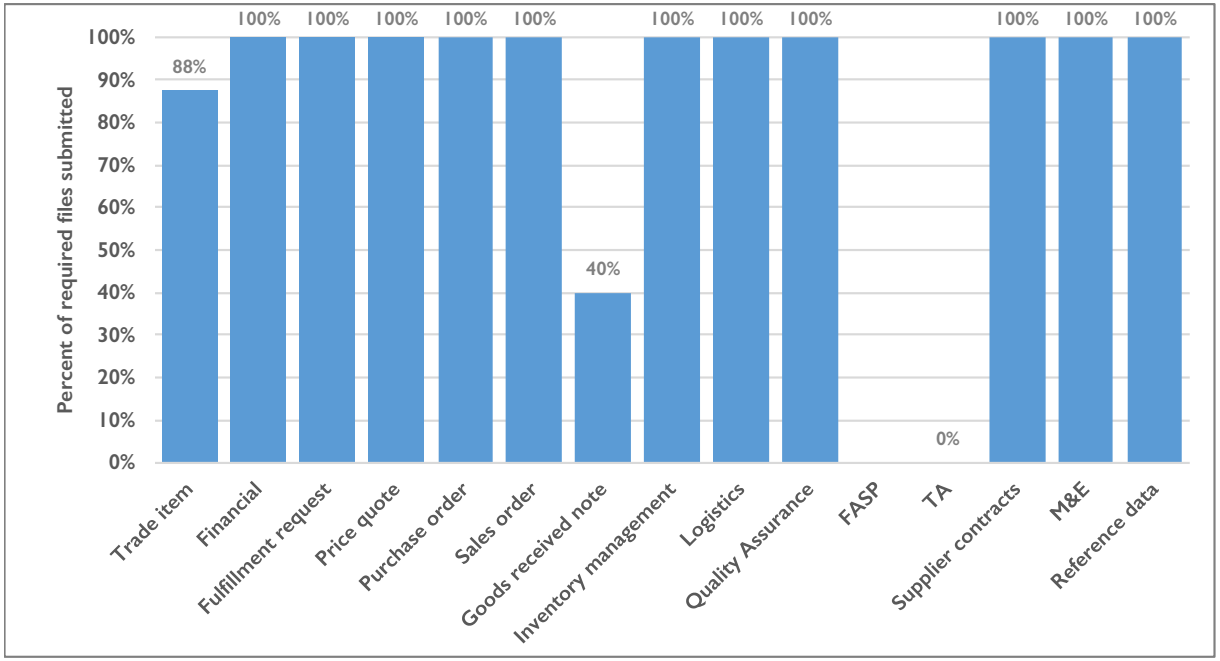
C4. Percentage of required files submitted to BI&A in the reporting period

Measure Definition

Numerator: Number of required files submitted to BI&A during the quarter.
Denominator: Total number of files required for submission to BI&A during the quarter.
Purpose: This indicator measures the completeness of GHSC-PSM's data submissions GHSC-BI&A. Required files and data elements fall into a wide range of categories, from purchase orders and fulfillment requests to forecasting and supply planning.

	FY18 Target	Achievement FY2018 Q3	Achievement Year to Date
All Task Orders	TBD	92%	86%

Indicator Performance



Analysis

- GHSC-PSM increased its data submission rate to BI&A this quarter. Submission rates have increased from 88 percent in Q2 to 92 percent in Q3.
- GHSC-PSM began submitting its M&E country indicator data to BI&A this quarter. This one file is now included in the indicator calculation. Specifications and file formats for additional M&E requirements are still being defined. Additionally, GHSC-PSM continues to work with GHSC-BI&A on defining submission formats and data element mapping for forecast and supply planning (FASP) files. These FASP and additional M&E files have been excluded from the indicator result while work in these areas is ongoing. In the meantime, FASP and M&E data are shared with USAID via other platforms. FASP files are submitted to BI&A on a quarterly basis and are accessible to USAID, but complete requirements are still being defined. M&E data are shared in quarterly performance reports, such as this one.

Data Notes

- The USAID Global Health Supply Chain Program-Business Intelligence and Analytics (GHSC-BI&A) mechanism is a data warehouse and analysis platform that integrates data across USAID's family of GHSC projects.
- Data requirements, including file types, data elements, submission formats, and frequency, are governed by the *BI&A Information Specification for Implementing Partners* (the "Infospec"). Exceptions may be specified by USAID.

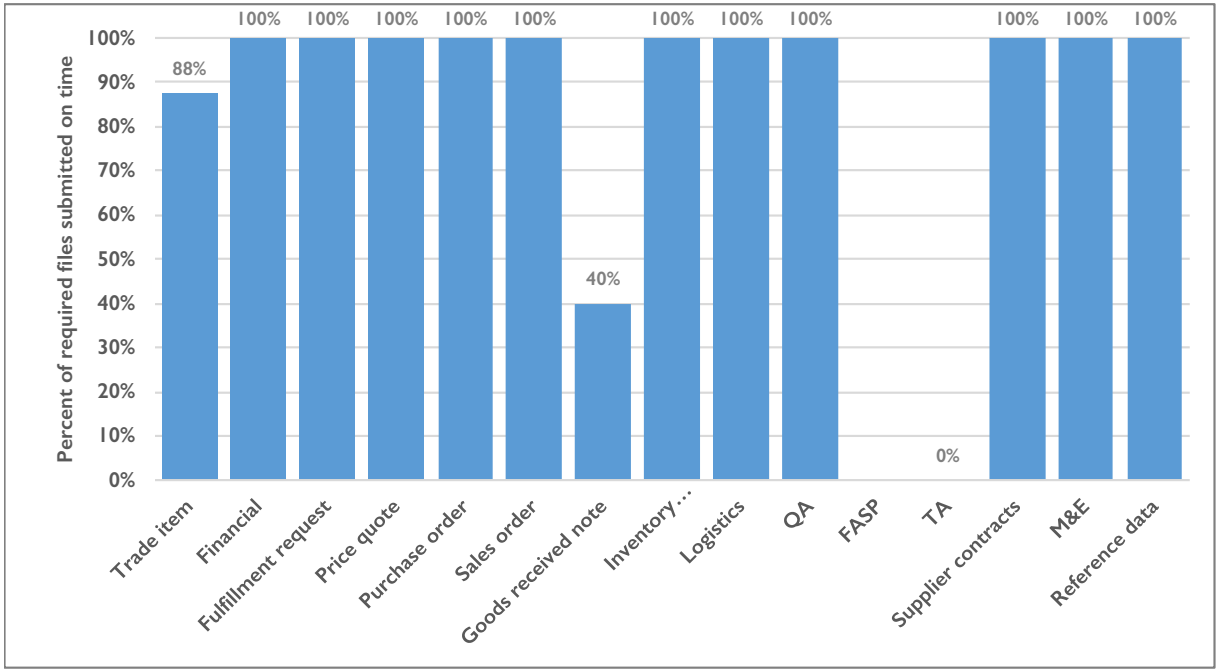
C5. Percentage of required files timely submitted to BI&A in the reporting period

Measure Definition

Numerator: Number of required files timely submitted to BI&A during the quarter.
Denominator: Total number of files required for submission to BI&A during the quarter.
Purpose: This indicator measures the timeliness of reporting to BI&A. Depending on the information category, submissions can be due on a daily, monthly, or annual basis.

	FY18 Target	Achievement FY2018 Q3	Achievement Year to Date
All Task Orders	TBD	92%	86%

Indicator Performance



Analysis

- Data submission timeliness rose this quarter, from 86 percent in Q2 to 92 percent in Q3.
- Of the files that were submitted this quarter, all were submitted on time according to the timelines set in the BI&A Information Specification for Implementing Partners or USAID guidance.
- Please see indicator C4 for more details about required files and exceptions for the quarter.

Data Notes

- The USAID Global Health Supply Chain Program-Business Intelligence and Analytics (GHSC-BI&A) mechanism is a data warehouse and analysis platform that integrates data across USAID's family of GHSC projects.
- Data requirements, including file types, data elements, submisson formats, and frequency, are governed by the *BI&A Information Specification for Implementing Partners* (the "Infospec"). Exceptions may be specified by USAID.
- Four out of eight trade item files named in the Infospec have also been excluded from the indicator as "not applicable" to GHSC-PSM's current business processes.

C7a. Percentage of product lost due to expiry while under GHSC-PSM control (product loss percentage)

Measure Definition

Numerator: Total value of product lost due to expiry during the quarter.
Denominator: Average inventory balance (in USD) during the quarter.
Purpose: This indicator tracks products lost due to expiry while in a warehouse controlled by GHSC-PSM, including global regional distribution centers and in-country medical stores. It is key for monitoring good warehouse and distribution practices, such as "first expired first out" (FEFO).

Indicator Performance

Task Order	Country	Supply Chain Level	Site of Loss	Tracer Category	Total Value of Loss (USD)	Loss Denominator (USD)	Loss Percentage
TO1 - HIV/AIDS	RDC	Global	Storage	Adult ARV	15	318,146	0.01%
TO1 - HIV/AIDS	Vietnam	Central	Storage	Adult ARV	667	2,864,312	0.02%
TO1 - HIV/AIDS	Nigeria	Central	Storage	ARVs, Lab Reagents	851,742	55,801,753	1.5%
TO1 - HIV/AIDS	Haiti	Central	Storage	ARVs	141,733	12,958,938	1.1%
TO2 - Malaria	Nigeria	Central	Storage	ACTs, RDTs	67,403	6,045,356	1.1%

Analysis

- Loss percentages due to expiries were generally small this quarter. Haiti's losses fell considerably from the previous quarter, from 6.4 to only 1.1 percent.

Data Notes

- Losses are reported during the quarter that the loss value was determined, which may be later than the period when the loss occurred.
- Target not required for this indicator.

C7b. Percentage of product lost due to theft, damage, or other causes while under GHSC-PSM control (product loss percentage)

Measure Definition

Numerator: Total value of product lost due to theft, damage, and other causes during the quarter.
Denominator for losses in storage: Average inventory balance (in USD) during the quarter.
Denominator for losses in transit: Total value (in USD) of product delivered during the quarter.
Purpose: This indicator tracks products lost in a warehouse controlled by GHSC-PSM, in transit to such a facility, or in transit to the customer, within a specified time. Damage can occur due to human error such as lack of adherence to cold chain requirements, or unavoidable causes such as natural disasters.

Indicator Performance

Task Order	Country	Supply Chain Level	Site of Loss	Type of Loss	Tracer Category	Total Value of Loss (USD)	Loss Denominator (USD)	Loss Percentage
TO2 - Malaria	Nigeria	Global	Transit	Damage	mRDTs	3,433	6,486,740	0.1%
TO2 - Malaria	Madagascar	Global	Transit	Missing product	LLINs	1,427	12,920,025	0.01%

Analysis

- Nigeria reported that a door-to-door shipment of mRDT kits managed by a 3PL provider was damaged in transit due to breaches of shipping protocol.
- Madagascar reported that LLINs were missing from two deliveries. The mission has been notified of the loss and has requested immediate replacement of the undelivered LLINs.

Data Notes

- Losses are reported during the quarter that the loss value was determined, which may be later than the period when the loss occurred.
- Target not required for this indicator.

C10. Percentage of GHSC-PSM-procured or supported molecular instruments that remained functional during the reporting period

Measure Definition

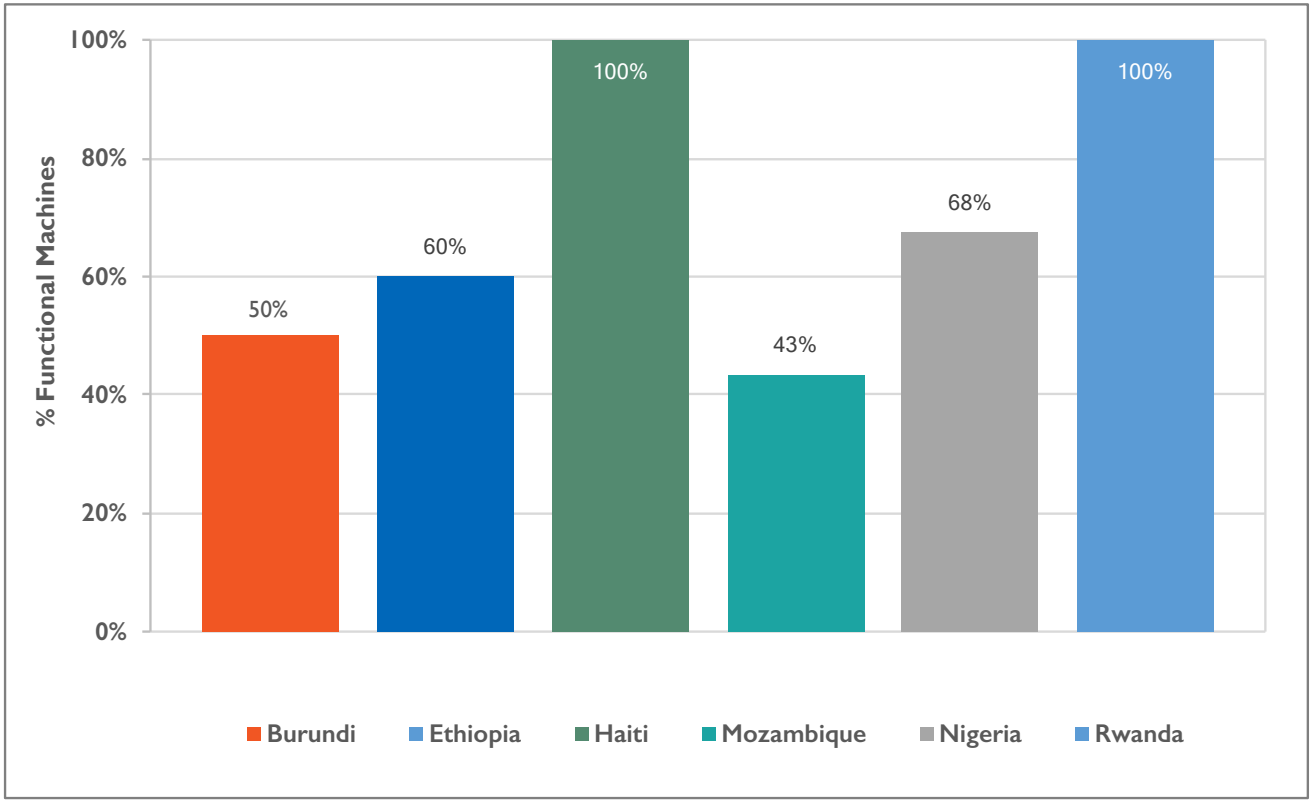
Numerator: Total number of GHSC-PSM-procured or supported molecular instruments that remained functional during the reporting period.

Denominator: Total number of molecular instruments in the country that were procured or are supported by GHSC-PSM.

Purpose: This indicator helps to understand potential impacts of supply chain activities on patient services, in this case specifically early infant HIV diagnosis and viral load testing for HIV patients. It reflects the effects of global procurement to influence service agreements and manufacturer response. It also can reflect whether in-country systems strengthening efforts are contributing to improved capacity to manage equipment in the health supply chain.

	Achievement	
	FY2018 Q3	Year to Date
TO1	68%	76%

Indicator Performance



Analysis

- Rwanda and Haiti continue to report excellent performance this quarter, with 100 percent of molecular instruments remaining functional for the duration of the quarter.
- Mozambique reported on an additional 19 instruments this quarter, with 57 percent of them facing some outage during the quarter. Days out of service ranged from 1 to 41 days due to equipment damage.
- Ethiopia showed a decrease from 75 percent functional to 60 percent this quarter. It had seven instruments down and one not yet installed, which is expected to be up and running in Quarter 4.
- Last quarter, both of Burundi's molecular instruments experienced outages, while this quarter only one did.
- In Nigeria, a total of 14 machines recorded downtime in FY18 Q3. The longest downtime was for 17 days and the shortest was for 2 days, and the average for all 14 machines was 2.75 days.

Data Notes

- Total number of supported instruments for each country is as follows: Burundi - 2; Ethiopia - 20; Haiti - 6; Mozambique - 23; Nigeria - 40; and Rwanda - 19.
- Targets for this indicator will be set in each country.

C11. Number of supply chain policies, regulations, strategies, or SOPs developed or updated with GHSC-PSM assistance

Country	
Burkina Faso	Burkina Faso supported development of the National Pharmaceutical Strategic Plan (2018-2022) and participated in the workshop to develop standard operating procedures for health commodity procurement at district and SDP levels.
Haiti	GHSC-PSM in Haiti supported the development of the operational plan for the national supply chain system (SNADI) for 2017-2022, which was validated by the Director General of Public Health this quarter. Some interventions have begun, with the support of partners.
Ethiopia	This quarter, GHSC-PSM Ethiopia supported PFSA in the development of the following policies and standard operating procedures (SOPs): • Pharmaceuticals Procurement List. The list contains all categories of pharmaceuticals with full and standardized product descriptions, and serves as a guide for health facilities and PFSA for forecasting, managing procurement, and monitoring performance. It will also encourage the private sector to focus on products that are not supplied by the agency and to be engaged in health competition. • Technical and operational SOPs that streamline the supply chain process and improve their efficiency. A total of 301 SOPs were developed focusing on core supply chain functions, LMIS, quality assurance, financial and human resources management, and monitoring and evaluation functions. The development of the SOPs is an integral part of a successful quality management system, as it provides the agency with the information to perform their routine jobs properly and facilitates consistency in the quality and integrity of the SC activities and their end results. The implementation of the SOPs will reduce the existing duplicative work effort, errors, and improve accountability and performance management of the supply chain. • Rational Drug Use Directive: GHSC-PSM supported EFMHACA on the rational medicine use directive. The directive will help to provide direction and guidance in an effort to promote rational drug use and reduce anti-microbial resistance.
Malawi	Malawi provided support to the MOH to develop a supply chain supportive supervision manual and tools, while training district MOH supervisors to improve their knowledge and skills to effectively supervise and mentor supply chain staff in the health facilities. This marked the roll out of the redesigned supportive supervision approach anticipated to contribute to effective supply chain supportive supervision efforts by district managers and improve commodity and data management. While the old supportive supervision approach focused heavily on supply chain data collection with limited attention to staff supervision and mentoring, the new approach emphasizes joint problem-solving, mentoring, and two-way communication between the supervisor and those being supervised, based on performance gaps identified during monitoring. It covers the SCM competency areas of stock management, store management, ordering and reporting, prescribing, and dispensing. The revised approach will be implemented in four stages, as follows: (1) monitoring facilities to identify gaps for supportive supervision; (2) district SCM supervisors (informed by findings from the monitoring) prepare for supportive supervision priorities and schedule; (3) district SCM supervisors conduct field visits to facilities to work with facility staff on gaps identified and develop action plans; and (4) district SCM supervisors compile report on supportive supervision carried out and conduct follow-up activities at facilities. The new approach is expected to strengthen relationships and optimize team work, optimize resource allocation and foster high standards, and ultimately promote consistent availability of essential medicines and medical supplies at all levels of the health system.

Data Notes

▸ No target is required for this indicator.

D. Denominator Annex

Countries	Angola	Botswana	Burkina Faso	Burma	Burundi Non-GHSC-PSM-supported	Cameroon	Ethiopia	Ghana	Guinea	Haiti	Indonesia	Lesotho	Madagascar	Madagascar Non-GHSC-PSM-supported	Malawi	Mali	Mozambique	Namibia	Namibia Non-GHSC-PSM-supported	Nigeria	Rwanda	Uganda	Zambia	Zimbabwe
B1. Stockout Rate at SDPs																								
Tracer Products																								
First-line Adult ARVs	8	33		3	699	46	1048	39		146	12	139			606		1362	13	40	2477	520	230	415	1379
Second-line Adult ARVs	8	33		3	85	2	186	37		146	7	134			594		485	13	40	589	487		388	1366
First-line Pediatric ARVs	5	33		2	283	7	908			146	4	112			583		1118	13	40	941	429	202	341	1304
First RTKs	9	20			806	59	358	46		146	5	124			629		320	13	40	3070	490	236	1919	1707
Second RTKs	9	20			625	54	293	35		146	5	118			624		371	13	40	2415	345	226	1910	1707
Tie-breaker RTKs							35				5	109						13	40	1404		206		1707
Male Condoms	8	28			726		631	41		199		64			604		232	2	14	2142	477		1970	1760
Female Condoms	8	27			326							65			368		64	2	14	1456	154		577	1743
Ready-to-use Therapeutic Food (RUTF)							513					114										162		
EID Reagents		5		1			19					1					5			22	6	1	12	3
EID Consumables		5		1			398													22	6			
Viral Load Reagents		12		2			19					3					23			22	9	1	14	8
Viral Load Consumables		12		2			398													22	9			
First-line ACTs (AL 6X1)	8		1597				488		510						648	1065	312			3062	488		1878	1651
First-line ACTs (AL 6X2)	7		1597				505		510						647	1062	294			3201	516		1825	1642
First-line ACTs (AL 6X3)	9						325		510						642	1002	298			2805	471		1864	1644
First-line ACTs (AL 6X4)	11						645	44	510						650	1063	308			3259	528		1843	1681
AL Inability to Treat	5		1597				733		510						654	1096	328			3331	551	152	1910	1681
First-line ACTs (AS/AQ 25/67.5 mg)					695			43					1031	559						1586				
First-line ACTs (AS/AQ 50/135 mg)					730			43					1062	599						1020				
First-line ACTs (AS/AQ 100/270 mg x 3)			1597		727								1022	587						1043				
First-line ACTs (AS/AQ 100/270 mg x 6)			1597		735								1075	591						1004				
Rapid Diagnostic Tests for Malaria	10		1597		793		289	44	510				1085	607	650	1053	321			3198	464	150	2071	1673
Sulphadoxine-pyrimethamine (SP)	1		1597		707			45	510				682	445	626	1054	250			2640		124	1875	712
LLINs			1597		748				510				449	284	480	1064	31			1821				

*Out of cycle

Note: Gray-shaded cells represent one or both of the following situations: a) the task order is not funded in the country; or b) the indicator has been exempted from the country's monitoring and evaluation plan. Task orders left blank but with no shading represent non-reporting for other reasons, for example a temporary lack of data for the health element(s) or indicator.

D. Denominator Annex

Countries	Burundi Non-GHSC-PSM-supported	Ethiopia	Ghana	Guinea	Haiti	Madagascar	Madagascar Non-GHSC-PSM-supported	Malawi	Mali	Mozambique	Nigeria	Pakistan	Rwanda	Uganda	Zambia	Nepal*
B1. Stockout Rate at SDPs																
Tracer Products																
Injectable Contraceptives	730	966	40	380	199	953	541	577	1032	259	2243	9425	437	217	1957	3078
Depot Medroxyprogesterone Acetate 104 mg/0.65 mL, Subcutaneous		966								49						
Depot Medroxyprogesterone Acetate 150 mg Vial, Intramuscular	730		40	380	199	953	541	577	1032	256	2189	9425	437	217	1926	3078
Norethisterone Enanthate											2190				617	
Implantable Contraceptives	690	939	40	380	199	569	373	543	990	122	982		414		1010	
Etonogestrel 68 mg/Rod, 1 Rod Implant		873				569	373	530			953		378		292	
Levonorgestrel 75mg/Rod, 2 Rod Implant	690	678	40	380	199			484	990	122	747		414		870	
Combined Oral Contraceptives	725		41	380	199	934	496	547	1012	227	1993	9425				3078
Levonorgestrel/Ethinyl Estradiol 150/30 mcg + Fe 75 mg, 28 Tablets/Cycle	725	874	41	380	199	934	496		1012			9425	428			3078
Levonorgestrel/Ethinyl Estradiol 150/30 mcg, 28 Tablets/Cycle								547		227	1993					
Emergency Oral Contraceptives	630	835						199								
Levonorgestrel 0.75 mg, 2 Tablets	630	835						199		70						
Levonorgestrel 1.5 mg, 1 Tablet																
Progestin-only Pills	644	713				534	283	439	889	211	1868		383		562	
Levonorgestrel 30 mcg, 35 Tablets/Cycle	644	713				534	283	439	889	211	1868		383		562	
Copper-bearing Intrauterine Devices	533	799		380	199	276	208	141	954	93	364	8292	304		54	
Calendar-based Awareness Methods					199	302	172		950				308			
Male Condoms	726	631	41	380	199	526	176	604	988	232	2142	9425	477		1970	3078
Female Condoms	326					260	176	368	897	64	1456		154		577	

* Out of cycle

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D. Denominator Annex

Countries	Angola	Botswana (Non-GHSC-PSM-supported)	Burkina Faso	Burma (Non-GHSC-PSM-supported)	Burundi (Non-GHSC-PSM-supported)	Cameroon	Ethiopia	Ghana	Guinea	Haiti	Indonesia	Lesotho	Liberia	Madagascar	Madagascar (Non-GHSC-PSM-supported)	Malawi	Mali	Mozambique	Namibia	Namibia (Non-GHSC-PSM-supported)	Nepal	Nigeria	Pakistan	Rwanda	Sierra Leone	Uganda	Vietnam	Zambia	Zimbabwe	B6 Only: Cote D'Ivoire	B6 Only: Democratic Republic of Congo	B6 Only: Kenya	B6 Only: Senegal	B6 Only: Swaziland	B6 Only: Tanzania
B2. Stocked According to Plan																																			
Task Order 1	42	30		25	341	72	150	231		12	9	27				14		252	45			10		242		36	6	18	10						
Task Order 2	571		7		581		90	323	7				33	355		14	18	252				10		156		18		12	6						
Task Order 3	643				11		126	261	5	10			14	394		16	21	288			20		12	248		27		16							
Task Order 4							105							113		12	18	252			35			155				12							
B3. LMIS Reporting Rate																																			
Task Order 1	9	33		3,795	966	835	1,239			151	12	140				685	136	1,463	15	49		3,354		586		306		2,115	1,806						
Task Order 2	12		2,224	3,791	976		1,045		510					1,247	685	685	1,225	328				3,506		586		657		2,180	1,705						
Task Order 3					976		1,166		453	219				1,237	662	685	1,225	259				2,493	12,933	590				2,180							
Task Order 4							1,166							1206	643	685	1,225	399						562				2,180							
B6. Supply Plan Updates																																			
ARVs		1			1	1		1		1								1				1		1		1	1	1		1	1				1
Lab (HIV diagnostics)					1	1	1			1								1				1		1		1		1		1	1				1
RTKs		1			1	1	1	1		1						1		1				1		1		1		1		1	1				1
VMMC																1		1								1									1
Malaria commodities	1		1		1			1						1		1		1				1		1		1		1				1			1
PRH commodities							1	1		1				1		1		1			1	1		1		1		1			1	1			1
MNCH commodities								1		1				1				1						1				1							
Condoms							1	1		1						1		1			1	1		1		1		1		1	1	1			1

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