USAID GLOBAL HEALTH SUPPLY CHAIN PROGRAM
PROCUREMENT AND SUPPLY MANAGEMENT

QUARTERLY REPORT

FISCAL YEAR 2017 | QUARTER 3: APRIL 1 TO JUNE 30, 2017

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

CONTENTS

ACRONYMS

3PL	third-party logistics
ACT	artemisinin-based combination therapy
ADD	agreed delivery date
ARTMIS	Automated Requisition Tracking Management Information System
APE	Absolute Percent Error
AR	antiretroviral
CDC	U.S. Centers for Disease Control and Prevention
DTG	dolutegravir
EID	early infant diagnosis
FASP	forecasting and supply planning
FY	fiscal year
GHSC-PSM	USAID Global Health Supply Chain Program – Procurement and Supply Management
GSC	global supply chain
HR	human resources
HSS	health systems strengthening
IDIQ	indefinite delivery, indefinite quantity
IUD	intrauterine device
LLIN	long-lasting insecticide-treated nets
LMIS	logistics management information system
MAPE	Mean Absolute Percent Error (MAPE)
M&E	monitoring and evaluation
MIS	management information system
MNCH	maternal, newborn, and child health
MOH	ministry of health
MSL	Medical Stores Limited
OTIF	on time, in full
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PMI	U.S. President's Malaria Initiative
PPMR	procurement planning and monitoring report
QA	quality assurance
RDC	regional distribution center
RDT	rapid diagnostic test
RH	reproductive health
RTK	rapid test kit
SCOR®	Supply Chain Operations Reference
SDP	service delivery point
SP	sulphadoxine-pyrimethamine
VMMC	voluntary medical male circumcision

EXECUTIVE SUMMARY

The USAID Global Health Supply Chain Program – Procurement and Supply Management (GHSC-PSM) project is pleased to present its performance report for Quarter 3 (Q3) of fiscal year 2017 (FY17). Quarter 3 marked a turning point for the project. USAID asked the team to address specific concerns, and the project is responding. Under new leadership, and in close collaboration with USAID, the project instituted significant process improvements, leadership changes, and systems augmentations to drive results forward.

GHSC-PSM delivered 955 shipments of lifesaving health commodities in Q3 — more than double the deliveries it made in Q2.

While the project continued to experience deliveries outside the agreed-to delivery window, 95 percent were delivered in full. Across the three task orders that had products delivered during the quarter, the project's on time, in full (OTIF) delivery rate was 23 percent. For the HIV/AIDS task order, which comprises the majority of the project's order volume, OTIF was 25 percent, compared to the previous quarter's 6 percent. OTIF rates for the malaria task order were 15 percent (compared to 13 percent in Q2), and for reproductive health commodities — which included 20 deliveries, double the number of the previous period — the OTIF rate was 5 percent (compared to 22 percent in Q2). The maternal and child health and Zika task order primarily delivers technical assistance and rarely procures commodities; one order was delivered in full in Q3.

To build on and accelerate on-time improvements, the project prioritized three key outcomes. The first entails increasing the project's pace of deliveries, which in addition to reducing late orders alleviates pressure on and improves the function of systems that are handling increases in demand. For instance, the project fulfilled 809 HIV/AIDS commodity shipments, 461 more than in Q2, while significantly reducing the number of extreme late deliveries that were due before February 2. As of June 30, only 35 of those 514 undelivered line items (6.8 percent) remained undelivered.

As of June, the project completed the build of its automated requisition tracking management information system (ARTMIS), and is shifting to its use to automate all order entry and tracking. The project also prioritized improving data quality and fully adopting ARTMIS, which will help improve cycle times, lead times, and data quality and visibility — all crucial to on-time deliveries. With the June 30 ARTMIS release, the project began to move to a fully paperless, automated system for data entry and retention, bringing the additional benefits of minimizing human error and saving time. Other steps to improve OTIF included continuing to develop and update country profiles for accurate and up-to-date requirements, building countries' capacity to forecast needs, and identifying process improvements across the global and national supply chains to optimize delivery.

While the project continues to make significant improvements, it is important to note there will be a lag in data reflecting those changes because of how OTIF is measured. The denominator increases for each line item delivered in the quarter while the numerator increases only for line items delivered on time and in full. As the project delivers outstanding orders, this will result in a lower on-time in-full delivery rate because the number of late orders being delivered will increase. Similarly, as the number of late deliveries is reduced, cycle times will increase because back orders delivered are included in the measure, which carry with them a long cycle time. In essence, the lag in improved OTIF in the near term reflects that the project is effectively dealing with the backlog of orders.

GHSC-PSM is determined to achieve greater success and carry forward USAID's leadership and global vision to ensure the most vulnerable populations have access to essential health commodities. This includes ensuring lifesaving commodities are reliably in stock. While the project is not solely responsible for service delivery point (SDP) stockouts, which can result from myriad factors — many beyond the project's purview — it does monitor stockout status for greater insights on where and how to

strengthen commodity supply and delivery. Of these monitored facilities, stockout reports were variable, averaging 8 percent for HIV/AIDS commodities, 21 percent for malaria commodities, and 31 percent for reproductive health commodities.

Targeted analysis of late HIV/AIDS orders shows that most reported stockouts were limited to the central warehouse, and adequate stocks remain at provincial warehouses or clinics, pharmacies, and hospitals. GHSC-PSM continues to prioritize these deliveries to ensure no patient goes without treatment. At the same time, to improve the stock levels at sites where GHSC-PSM works, the project is providing technical support to improve inventory management practices and integrated distribution of commodities; updating methods to more accurately measure stocks; and working with ministries of health and local partners to build country capacity to build their own logistics and forecasting systems. In Q3, more than 30 countries and regional programs received technical assistance across 11 technical areas, and 3,982 country counterparts (2,672 men and 1,310 women) benefited from project-led training courses on topics ranging from strategy development to forecasting to monitoring and evaluation.

GHSC-PSM values USAID's partnership and open communication regarding our action plan, as well as USAID's support and collaboration toward improvement. The project remains committed to resolving the issues identified with USAID and ensuring that we continue to serve the millions of people, patients, and clients — men, women, and children — who rely on the project every day.

SECTION 1

ABOUT THIS REPORT

USAID's Global Health Supply Chain Program – Procurement and Supply Management (GHSC-PSM) project is pleased to present its performance report for Quarter 3 (Q3) of fiscal year (FY) 2017. This report highlights GHSC-PSM's achievements between April 1, 2017, and June 30, 2017, and documents the project's key challenges, lessons learned, and next steps. In doing so, this report directly contributes to GHSC-PSM's objective to share knowledge and best practices.

This report is designed to provide a performance update for the project's key health areas (HIV/AIDS; malaria; reproductive health; and maternal, newborn, and child health), in line with its monitoring and evaluation (M&E) plan. New to this quarter's report is Section 3, Highlights by Objective. This section provides a brief overview across the project's objectives, key updates, and a description of progress on project performance as it relates to its key objectives: global supply chain (GSC) services, health systems strengthening, and strategic engagement.

Also new in this quarter's report is Section 4, Key Data and Analysis, which presents key data along with a detailed analysis for each health area. This section replaces the summary data tables and bullet analysis of previous reports to provide greater insights on key trends and other insights for the project in the reporting period.

Given the size and complexity of GHSC-PSM, this report reflects only a fraction of the effort the project makes each day to help people around the world live healthier, more productive lives. The upcoming annual performance report will provide a more comprehensive narrative that captures the broader story of GHSC-PSM.

SECTION 2

BACKGROUND

GHSC-PSM connects technical solutions, experts, and proven commercial processes to promote efficient and cost-effective supply chains worldwide. Its goal is to ensure uninterrupted supplies of health commodities to save lives and create a brighter future for all. Working across Africa, Asia, Central America, and the Caribbean, the project facilitates commodity procurement and logistics, offers comprehensive technical assistance to strengthen national supply chain systems, and provides global supply chain leadership.

Through its four task orders, the project directly supports the U.S. President's Emergency Plan for AIDS Relief (PEPFAR); the U.S. President's Malaria Initiative (PMI); and USAID's population and reproductive health (RH) and maternal, newborn, and child health and Zika (MNCH) programs. Since its official launch in January 2016, the project has expanded its reach to 55 countries. It operates in some of the world's most challenging environments, navigating complex issues such as poor infrastructure, political crises, and natural disasters to ensure lifesaving health supplies reach those most in need.

GHSC-PSM's quarterly reports review metrics on its supply chain performance and supply chain cost to ensure a continuous process of assessment and learning. The project's key performance indicators (KPIs) focus on three areas: (1) supply chain performance, as reflected in indicators such as on-time and in-full delivery and cycle time; (2) supply chain costs, examining various stages as well as the overall supply chain cost to deliver one unit of product; and (3) health systems strengthening performance, including country and crosscutting indicators that highlight the effects of GHSC-PSM interventions on countries' supply chain systems as they become self-sufficient.

The indicators build from the Supply Chain Council's proven Supply Chain Operations Reference (SCOR®) performance measures, which provide a common set of supply chain definitions that can be applied across disparate industries. GHSC-PSM joins many public and private organizations worldwide that use the model as a foundation for global and site-specific supply chain improvement projects.

To date, the project has faced considerable challenges, most notably, low on-time, in-full performance. GHSC-PSM received a USAID request to address specific concerns, and public interest in the project's performance has since improved.

As the largest project administered by USAID, GHSC-PSM presents unprecedented operational challenges and requires considerable communication among many stakeholders. GHSC-PSM works closely with USAID/Washington to continue to review and assess the project's performance as well as the appropriateness of its indicators to identify inefficiencies, unnecessary costs, or inconsistencies that burden service. If needed, the project may adjust its reporting to more accurately reflect supply chain performance and costs.

Section 3

HIGHLIGHTS BY OBJECTIVE

GHSC-PSM helps facilitate an uninterrupted supply of global health commodities through its procurement and supply management activities, while also supporting health systems strengthening supply chain activities in 33 countries worldwide. In Q3, GHSC-PSM delivered 809 HIV/AIDS commodity shipments, 125 malaria commodity shipments, and 20 reproductive health commodity shipments. While its key performance indicator OTIF remained low at an aggregate 23 percent (compared with 7 percent in Q2), Q3 marked a turning point for the project as it reduced the proportion of extreme late deliveries (more than 60 days late), improved data quality, and made progress in moving to a fully automated management information system — all significant contributing factors to improved on-time delivery.

Project performing warehouse repairs in Ethiopia. Credit: GHSC-PSM.

In Q3, the project took important steps toward addressing factors key to improving on-time deliveries — better cycle times, lead times, and data quality and visibility — which are greatly facilitated by the June 30 ARTMIS release and the project's move to a fully paperless, automated system for data entry and retention. To improve delivery pace and precision, the project is engaging suppliers, streamlining import waivers, and improving internal processes.

Strengthening supply chain systems, including achieving better data visibility through country management information systems and improved country forecasting and supply planning, as well as monitoring commodity stock levels to ensure adequate, reliable supply is also important in achieving the GHSC-PSM mission. Targeted analysis of late HIV/AIDS orders shows 83 percent of deliveries contributed to appropriate stock levels, meaning the deliveries did not result in low stock levels or country-wide stockouts. Where stockouts did occur, they were limited to the central warehouse. GHSC-PSM continues to prioritize these deliveries to ensure no patient goes without treatment.

Following USAID's request for action, the project invested heavily in responding to each USAID concern. Resources were shifted to address a range of core improvement areas, including new leadership and organizational structures, streamlining supply chain systems, improving reporting and communications, building staff capacity, and expanding data quality and visibility. While challenges inherent in managing a project of this size and complexity remain, the project is steadily making progress in completing these actions and improving performance.

Of note, as the project continues to make significant improvements, there will be a lag in data reflecting that change because of how OTIF is measured. The denominator increases for each line item delivered in the quarter while the numerator increases only for line items delivered on time and in full. As the project delivers outstanding orders, this will result in a lower on-time in-full delivery rate because the number of late orders being delivered will increase. Similarly, as the number of late deliveries is reduced, cycle times will increase because back orders delivered are included in the measure, which carry with them a long cycle time. In essence, the lag in improved OTIF in the near term reflects that the project is effectively dealing with the backlog of orders.

This section highlights the project's progress toward its core objectives: to procure and deliver health commodities, strengthen country supply chain health systems, and provide global supply chain leadership.

Objectives

Objective 1: Global Supply Chain Services

ON-TIME HEALTH COMMODITY PROCUREMENT AND DELIVERY

Though OTIF remained low this quarter, other key performance indicators like cycle times improved, suggesting the multiple internal management and project systems changes underway are beginning to take hold. Moreover, the project made gains in reducing extreme late deliveries (those due before February 2, 2017) despite increases in order volume across health areas.

A summary of OTIF and order volumes by health area follows:

- GHSC-PSM delivered 809 HIV/AIDS commodity shipments — 461 more than in Q2. Of these, 204 (25 percent) were delivered on time and in full. Most orders (95 percent) were delivered in full.
- GHSC-PSM made 125 malaria commodity shipments — 4 times the number of shipments made in Q2. Of these, 19 (15 percent) were delivered on time and in full, 2 percent higher than in Q2 (13 percent). Most orders (97 percent) reached their destination in full.
- GHSC-PSM delivered 20 RH commodity shipments — more than double the number in Q2. Of these, one (5 percent) was delivered on time and in full; 19 of 20 orders were delivered in full.
- The maternal and child health task order had one delivery this quarter, which was delivered in full.

The project delivered 955 shipments in Q3 — significantly more than prior quarters (three shipments in FY16 Q4, 351 shipments in FY17 Q1, and 389 shipments in FY17 Q2). This increase in delivered orders was driven in part by the project's push to reduce the large number of deliveries that were due before Feb. 2, 2017 (514 undelivered line items). As of June 30, only 35 of those line items (6.8 percent) remained undelivered.

Clearer procedural collaboration across the entire supply chain helped drive this progress. Activities focused on improving key factors contributing to poor on-time performance: long cycle times, poor lead times, and poor data quality and visibility.

Cycle times. GHSC-PSM worked to streamline its internal procurement and logistics process to reduce the number of hand-offs and any unnecessary redundancies. In Q3, cycle times improved for HIV/AIDS shipments though performance for malaria and reproductive health shipments slightly declined. A summary of cycle times by task order follows:

- The average cycle time for all HIV/AIDS commodity shipments was 154 days — 17 days less than Q2.
- For malaria commodity shipments, the average cycle time was 234 days, a slight increase from the cycle time in Q2 (206 days). Of note, the number of shipments also grew significantly from 32 shipments in Q2 to 125 shipments in Q3.
- For reproductive health commodity shipments, the average cycle time was 220 days, an increase from the cycle time in Q2 (177 days). The number of shipments also grew from nine in Q2 to 20 in Q3.

Lead times. GHSC-PSM sets an agreed delivery date (ADD) with the mission in a signed requisition order, a key step in the supply planning process. To determine this date, the project estimates lead time. This estimated timeframe must consider how long it will take to obtain the commodities, which in some cases need to be manufactured, as well as the time needed to package, ship, clear customs, and deliver. Analysis found that lead time deviations significantly contributed to poor OTIF performance. This quarter, the project began using an order promise tool to improve lead times, which will help it better manage delivery schedules with missions. The tool calculates activity sequences and times based on a given commodity type, different fulfillment methods (direct drop versus regional distribution center), delivery mode (air, land, or sea), and destination country, outputting a delivery date and activity schedule.

Data quality and visibility. The June 30 ARTMIS release has facilitated the project's transition to entering all orders in the system, a crucial step to increasing data quality and visibility. To guarantee robust data quality, the project developed and initiated a data cleanup plan for order management, which is on track for completion next quarter. All functions across task orders were scrubbed to ensure data within ARTMIS reflects that previously documented in manual country trackers to build a solid baseline. These actions will enable manual trackers to be retired and ARTMIS reports and dashboards to be fully used moving forward. This increased data visibility will enable GHSC-PSM to better identify commodity security concerns, prioritize orders and activities daily, and provide a more coordinated approach to procurement and logistics efforts.

Action Steps: To build on and accelerate on-time improvements, GHSC-PSM recognized that it needed to ensure its staff were fully trained and that the right processes and systems were in place. To achieve this, the project focused on standardizing the requisition order approval process, rewrote the agreed delivery date process, created an order promising tool and lead-time table, issued a communications standard operating procedure, and rolled out global supply chain training for its staff, which included six new training courses.

Data cleanup was a key priority in Q3. The initial focus was on cleaning order-related data across all task orders and retiring manual trackers. This process included comparing order information line by line across three different data sources: ARTMIS, logistics management information system (LMIS), and manual trackers.

The project also initiated a broader data quality initiative that extended beyond data cleanup. GHSC-PSM developed a plan to tackle data quality issues and, in Q4, will hire a data operations manager will lead this initiative and improve data visibility across the project.

Objective 2: Health Systems Strengthening

With 33 country and regional programs receiving technical assistance, GHSC-PSM focused Q3 on refining and continuing to implement its health system strengthening (HSS) approaches across each of its 11 technical areas: 1) strategy and design, 2) forecasting and supply planning (FASP), 3) procurement, 4) warehousing and distribution, 5) management information system (MIS), 6) workforce development, 7) governance and leadership, 8) process improvement, 9) lab, 10) voluntary medical male circumcision (VMMC), and 11) health care waste management.

Bolstering these technical areas within countries is crucial to strengthening supply chain systems, including better data visibility through country management information systems and improved country forecasting and supply planning — key factors in on-time deliveries — as well as monitoring commodity stock levels to ensure adequate, reliable supply.

STOCKOUT RATES

While not directly attributable to project performance, GHSC-PSM monitors service-delivery-point stockout rates to gain insights on where and how to strengthen commodity supply and delivery where it matters most — at the site of patient care. For instance, Q3 stockout reports at service delivery points were variable (averaging 8 percent for HIV/AIDS commodities, 21 percent for malaria commodities, and 31 percent for reproductive health commodities), and the reasons behind those stockouts varied widely, from being driven by stockouts at the central or subnational levels, to transportation and distribution challenges, to facility inventory management challenges and others. Other causes of stockouts include:

- Poor planning or improper quantification by a country's ministry of health, which results in the MOH ordering too little of a given commodity.
- Late or failed orders from other procurement agencies.
- Regimen changes, which require careful planning and timing to avoid stocking out of a new or old regimen during the changeover.
- Emergency situations that unexpectedly increase demand for certain commodities.

When stockouts occur where GHSC-PSM works, teams investigate the reasons behind the numbers so they can ascertain appropriate next steps. For instance, a targeted analysis of late orders for the HIV/AIDS task order (307 orders) shows the majority did not result in countries falling below three months of stock at the central warehouse. A total 36 late orders were linked to low stock levels (below three months), but were not projected to cause stockouts; 16 products did or were projected to stock out at the central warehouse. GHSC-PSM prioritized these orders and developed action plans to mitigate these stockouts.

The "stocked according to plan" indicator provides insights into stock levels at central storage sites where the project has more direct influence. In Q3, central storage sites generally had higher rates of optimal stocking (21 percent on average) compared to regional (16 percent) and district (9 percent) sites, though needs remain to strengthen inventory management practices and commodity security throughout the system.

Action steps: With these insights, the project is taking remedial and proactive measures to minimize and mitigate stockouts. These measures include providing technical support at the central, regional, and, to some extent, facility level to improve inventory management practices and integrated distribution of commodities, update methods to more accurately measure stocks, and working with ministries of health and local partners in building country capacity to develop their own logistics and forecasting systems.

Bolstering these technical areas within countries is crucial to improving country data visibility and decision making, and forecasting and supply planning, which are key to monitoring commodity stock levels and ensuring adequate, reliable supply. Highlights across select focus areas are captured below.

FASP. The Forecasting and Supply Planning (FASP) team focused on contributing tools, analyses, and inputs to programmatic and GSC initiatives, including the transition to the antiretroviral (ARV) dolutegravir (DTG), rapid test kit (RTK) availability, RH data visibility, and commodity security. The team also continued developing a modernized FASP tool, completing requirements and data flow, and hosting workshops. The team also conducted technical reviews of ARVs, RTKs, and malaria supply plans to ensure continuation of planning best practices in countries. The FASP team provided in-country technical assistance support in Haiti and Madagascar. In Madagascar, Quantimed was established as a reliable tool to forecast malaria commodity requirements, with specific attention to seasonality.

Warehousing and distribution. In addition to supporting Ghana, Namibia, and Zimbabwe with direct technical assistance, in Q3 the warehousing and distribution team drafted and supported finalization of a request for proposal for the innovative use of unmanned aerial vehicle services. In Ghana, through

contracting third-party logistics (3PL) services for the central warehouse, GHSC-PSM lowered the price for these services by 30 percent. In Namibia, the project analyzed the country's distribution to explore options for alternative management models. In Zimbabwe, GHSC-PSM developed an initiative to optimize inventory to increase available space within the central warehouse. The team also developed plans and requirements for modular warehouses, labs, and clinics.

MIS. The project achieved several MIS successes in Q3, including finalizing the scope, requirements, and project charter for the developing next-generation FASP tools. In Mozambique, the MIS team began scaling up rollout of SIGLUS, a tablet-based inventory management tool that is the first in-country electronic tool to track actual consumption. In Malawi, the country team prepared to go live with a new LMIS system, OpenLMIS v3.0, to facilitate and streamline data reporting.

Workforce development. In addition to supporting headquarters staff, the Workforce Development team led technical assistance trips to Burma and Nepal. A staff motivation study in Nepal resulted in a government restructuring announcement, with an elevation of health supply chains. A supply chain management professionalization trip to Burma advocated introducing a supply chain directorate in the Ministry of Health. Finally, in June, GHSC-PSM led a supply chain course at headquarters for USAID staff. Six participants from USAID missions in Bangladesh, Cote d'Ivoire, Malawi, and Ukraine, as well as USAID/Washington, attended the five-day course. Led by a workforce development specialist with extensive experience in supply chain management short-course delivery, the course increased knowledge and understanding of supply chain management to enable USAID field staff to monitor and support activities across a variety of health programs. The post-course evaluation from participants was very positive.

Lab systems. In Q3, the Lab team conducted Forlab training and forecasting in Haiti and Zambia, as well as LabEQIP optimization and sample referral network and lab assessments in Mozambique and Rwanda. The team also conducted two lab retreats focusing on 14 priority countries to examine viral load scale-up plans and challenges in meeting demands; scale-up of viral load testing is a key priority for many countries as they work toward 90-90-90 targets. Finally, the team focused on supply plan reviews, late order prioritization, and support for emergency orders to ensure critical needs were met, as well as updates and bug fixes on lab software tools.

Commodity security. The Commodity Security team enhances internal systems, processes, and linkages, focusing on initiatives that bridge the work of country programs and GSC teams. As such, the Commodity Security team played a key role in publishing country profiles (see "Objective 1") and establishing a process to keep them updated, disseminating GSC's order promising tool and country lead-time tables to field offices, and ensuring the integration of lead-time information into the FASP team's supply plan validation processes. The Commodity Security team also created a process to collect stock status data from countries with active requisition orders, which is key to prioritizing orders and alerting USAID to current and potential stockouts. Finally, the Commodity Security team helped document and analyze countries' recently revised national shelf life and waiver requirements to improve GSC's delivery processes and supported in-country data visibility initiatives.

Country Annual Forecast Reviews

The annual forecast reviews that countries prepare and submit to GHSC-PSM play a significant role in ensuring the project has clear, high quality data pertaining to commodity demand for optimal forecasting and supply plans, which contribute ensuring adequate commodity supplies.

Q3 results show variability across task orders on how regularly countries are updating quarterly supply plans, ranging from 36 percent to 71 percent of countries where the project operates a field office. Moreover, even when countries update supply plans quarterly, they are not always submitting these plans to GHSC-PSM to inform its global planning. A summary of results follow:

- For HIV/AIDS commodities, 13 of 22 countries where the project operates a field office (59 percent) updated quarterly supply plans; 11 of the 13 updated supply plans were submitted to GHSC-PSM.
- For malaria commodities, 10 of 19 countries where the project operates a field office (53 percent) updated quarterly supply plans; 9 of the 10 updated supply plans were submitted to GHSC-PSM.
- For maternal and child health commodities, four of the 11 countries (36 percent) where the project operates a field office had updated quarterly supply plans (up from 33 percent in Q2); GHSC-PSM's headquarters has received two out of the four updated supply plans. For reproductive health commodities, 12 of 17 countries where the project operates a field office (71 percent) updated quarterly supply plans; 8 of the 12 updated supply plans were submitted to GHSC-PSM.
- For maternal and child health commodities, four of 11 countries where the project operates a field office (36 percent) had updated quarterly supply plans (up from 33 percent in Q2); two of the four updated supply plans were submitted to GHSC-PSM.

Action steps: The project will explore this area further to identify ways to improve country annual forecast reviews, which are crucial to ensuring adequate stock levels in countries.

Objective 3: Global Supply Chain Leadership

GHSC-PSM staff worked across task orders throughout Q3 to build staff expertise, promote learning across the project, and raise global awareness on critical supply chain areas. Key performance measures related to these activities include innovations developed, implemented, or introduced, and the number of people trained.

INNOVATIONS

In Q3, GHSC-PSM recorded four innovations related to health commodity market or supply chain best practices, including a push distribution approach for ARVs in Cameroon, the use of private sector distribution companies for long-lasting insecticide-treated nets (LLINs) in Ghana, a reproductive health commodity stock dashboard in Pakistan, and new fuel cost considerations in 3PL contracts in Mozambique.

- With support from the HIV/AIDS task order, Cameroon adopted a push distribution approach for ARVs in the Centre region. The Centre region generally had poor onsite delivery rates from the regional warehouse to health facilities, and poor quality and on-time requisitions from health facilities to the regional warehouse. In an attempt to solve this problem, the region team is trying a new approach which involves packing medicines in a delivery van and moving from health facility to health facility on a particular axis. At each health facility, the team works with health facility staff to determine their needs through on-the-job capacity building. Required HIV commodities are then supplied and the team moves on to the next facility. This new approach combines building onsite capacity of staff with ensuring a continued supply of medicines.
- Under the malaria task order, GHSC-PSM began using private sector distribution companies to distribute long-lasting insecticide-treated nets (LLINs) for Ghana's nationwide school-based distribution campaign. DHL Global Forwarding, Imperial Health Sciences Ghana Limited, Movis Ghana Limited, and Nexus Excel Log were awarded fixed-price contracts to distribute LLINs to 23,000 schools nationwide. The introduction of private sector vendors eliminates the risk associated with previous options, and teachers no longer are burdened with the task of transporting LLINs to their schools for distribution.

- In Pakistan, the field office team prioritized developing simplified and user-friendly LMIS systems. Under the reproductive health task order, the Pakistan team help develop a stock sufficiency dashboard for use by provincial governments and other supply chain stakeholders to optimize reproductive health commodity stock management. The new dashboard assists in reviewing reproductive health commodity stock sufficiency from the central to the SDP level and automates monthly stock analysis — a process that was previously conducted manually. Typically, comprehensive reports are run on a quarterly cycle to coincide with complete and up-to-date contraceptive LMIS data at all levels. As a result of this innovation, Pakistan's contraceptive LMIS has been enhanced and decision-makers across system levels can more easily monitor reproductive health stock status. Over the coming months, GHSC-PSM will lead orientation and training sessions for users across system levels to optimize use of this dashboard.
- In Mozambique, GHSC-PSM worked with four 3PL transport subcontractors to take fuel cost into account to limit the risks of fuel price volatility in Mozambique. This cross cutting innovation will allow a defined percentage of the transport cost to be adjusted as needed following the official fuel (diesel) price defined by the government.

Building Technical Capacity — Number of People Trained

The "people trained" 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. Training activities ramped up significantly in Q3, with most training focused on warehousing and inventory management. Specifically, the project provided training to 3,982 people, including 2,672 men and 1,310 women. Of those trained, 230 participants were trained at the central level, 1,365 at the subnational level-one, 339 at the subnational level-two, 41 at the subnational level-three, and 2007 at the SDP level. Numbers of participants trained* during the reporting period by topic are:

- **Forecasting and supply planning:** 198
- **Procurement:** 193
- **Warehousing and inventory management:** 2,103
- **Transportation and distribution:** 21
- **MIS:** 384
- **Governance and financing:** 402
- **Human resources (HR) and capacity development:** 438
- **Monitoring and evaluation (M&E):** 198
- **Strategy and planning:** 45

** The "people trained" indicator includes any type of participant, student, or learner in a training event, regardless of its duration.*

SECTION 4

KEY DATA AND ANALYSIS

To measure project-specific performance and provide information on the overall status of countries' broader supply chain systems, GHSC-PSM tracks several indicators that span the various areas in which GHSC-PSM works (see Annex I for a complete list). The project uses this data to identify successful actions and areas for improvement, as well as potential targets within a country's supply chain system that may benefit from project assistance in the future.

Some of the project's indicators are designed to capture its strategy of excellent service delivery at the lowest possible cost (e.g., quality control, shipping times, and on-time deliveries). Based on the SCOR model, these indicators include metrics for efficiency, effectiveness, and customer needs, while providing a forward-looking perspective toward improvement. However, the environment in which GHSC-PSM operates is extremely complex. As such, external factors (such as changes in countries' importation regulations, product recalls, or unexpected supplier shortages) can impact performance metrics. Other indicators relate more closely to activities of project partners (e.g., vendors), but still provide insight into how the project plans, procures, and delivers high-quality health commodities through its management of subcontractors. GHSC-PSM also tracks process indicators that demonstrate the type of assistance and services it provides (e.g., number of people trained, strategies supported, and innovations developed). These indicators show how well GHSC-PSM supports countries to develop policies and regulations, contributes to the global knowledge base, and delivers high-quality products and services that meet customer expectations.

In Q3, GHSC-PSM achieved considerable progress across all task orders. Further, the project recognized key challenges and defined explicit strategies to address them. And this was achieved in the context of considerable project growth, with total health commodity shipments almost doubling from last quarter.[1] This was partly due to the concerted efforts the project made to clear large numbers of shipments that were due prior to Feb. 2. While more time is needed for the process and system improvements implemented in Q3 to be reflected in project data, progress has been made.

This section provides a detailed examination of project performance across indicators for each task order. To present a complete picture of task order performance, data is presented separately by task order. Not only does this approach align with the project's commitment to empower task order teams and promote greater responsibility and accountability at the task order level (see "Global Update"), it also allows for a more tailored evaluation that considers each task order's specificities. To demonstrate synergies across task orders, data on shared activities or collaborative efforts follows individual task order analyses. Contextual data for the project can be found in Annex II.

Data Limitations During the Reporting Period

GHSC-PSM is working to clean all existing data and to ensure that all orders previously completed using manual trackers are entered into the automated system. As of Aug. 23, all new orders were generated in ARTMIS. However, at the time of this report, task orders and functional teams were at different stages of completing this process. While manual trackers were referenced to triangulate data pulled from ARTMIS, the data used in this report for Indicator A1, Percentage of shipments delivered on time, in full within the minimum delivery window; A3, Average cycle time; and A7, Percentage of line items imported using a temporary waiver include only the data captured in ARTMIS and the logistics management information system (LMIS).

[1] A shipment is defined as an order line item delivered to a consignee.

Data that was available only through manual trackers has not been included in our analysis. We recognize this is a limitation of our Global Supply Chain data; however, we believe this methodology ensures data consistency and integrity across task orders and across reporting periods. The project retired manual trackers in Quarter 4 and finalized all efforts to enter past orders into the system. Going forward and in future reporting, the data used from ARTMIS and the LMIS will more accurately reflect all orders processed by GHSC-PSM.

Another data limitation in the reporting period is that the data presented reflects orders captured in the system and marked as Delivered at the time that the data was analyzed. Because GHSC-PSM continues to clean and update the data in the system daily, data pulled at a different point in time for the same time period (Q3: April, May, and June 2017) may reflect additional updates. GHSC-PSM will continue to push for timely data entry; for now, some degree of data lag is inherent in a GSC data system. Finally, GSC data does not reflect acceptable delays such as recalls or procurements that were led by GHSC-PSM field offices. These orders will be included in the project's Q4 and annual report.

HIV/AIDS (Task Order 1)

This section provides an overview of key HIV/AIDS-related activities occurring in Q3 under Task Order 1. Following, it presents performance information for required quarterly indicators along with a detailed analysis of this data.

Introduction

Task Order 1 helps countries reach 90-90-90 global targets, ensuring that people know their HIV status and can access treatment that results in viral load suppression. Through supply chain technical assistance and procurement of high-quality products, GHSC-PSM is supporting countries to achieve uninterrupted supplies of pharmaceutical, lab, prevention, and other products. In Q3, Task Order 1 provided various levels of technical assistance and commodities to 24 countries, helping to ensure access to lifesaving HIV/AIDS commodities around the world.

Between May and June, Task Order 1 decreased the number of unsigned requisition orders due for delivery before February from 480 to two.

Key Activities in Q3

The Task Order 1 team focused on supporting countries to achieve their viral load scale-up targets. The project held two full-day lab retreats with USAID on April 7 and June 1; the second also included participants from the U.S. Centers for Disease Control and Prevention (CDC) and the Office of the U.S. Global AIDS Coordinator. Retreats provided a strategic overview of how GHSC-PSM is approaching support to viral load scale-up in countries, tools the project is using to support quantification and network optimization, and country profiles featuring viral load scale-up progress, targets, and challenges. The headquarters Lab team increased its work with country Lab teams, increasing data available on, for example, viral load scale-up and instrument functioning, to support analysis and improvement planning. In Nigeria, the project collaborated with the Ministry of Health, USAID, and CDC to implement a policy change to optimize the viral load network. This effort decreased polymerase chain reaction labs nationwide from 29 to 16, without affecting the ability of the country to scale up viral load and reach targets. The project also received praise from the Ministry of Health in Burma for refocusing some of its supply chain strengthening activities on the multi-drug resistant tuberculosis lab supply chain, including conducting a tuberculosis supply chain strengthening assessment.

With Task Order 1 core funds, the Market Dynamics team analyzed the cost of production for first-line ARVs, with an emphasis on some of the most commonly used ARVs (TLE and TEE), and the

corresponding finished product form (or expected form) for DTG and TAF. Work included assessing the pricing required for a healthy long-term market and identifying the price floor to inform procurement and planning. This led to an initial perspective on opportunities and levers to strengthen the supply base and realize procurement savings. The team also looked at the true cost of production for HIV RTKs. Further, the Task Order 1 team supported a survey of GHSC-PSM countries about plans to transition to TLE400, DTG, and TLD and — along with Plan, Market Dynamics, and Commodity Security teams —Task Order 1 is leading development of a GHSC-PSM supply chain strategy for TLD transition.

Other activities included presenting on VMMC procurement trends, supply chain reference information (e.g., prices and lead times), and quantification methods at USAID's Office of HIV/AIDS VMMC partners meetings. GHSC-PSM was also invited to present at a meeting of the Office of the U.S. Global AIDS Coordinator on June 23.

Looking Ahead to Q4

In addition to leading capacity building for GSC staff to build their knowledge of HIV/AIDS commodities, Task Order 1 will work closely with GSC, commodity security, and HSS teams to improve on-time delivery, expand mitigation actions for late orders, and jointly enhance the availability and use of months of stock data to inform priority procurement approaches. Task Order 1 will work with USAID to stay ahead of needs related to the TLD transition. This will include developing a comprehensive strategy (building on the work of the transition survey) to outline the project's approaches to ensuring that supply chains in countries can support the transition process, including adaptations of MIS systems, quantification exercises to avoid wastage of current stocks in country, training of supply chain staff, and other variables.

To more fully support countries' 90-90-90 target efforts, the Task Order 1 team is focused on an HIV RTK strategy. While GHSC-PSM does not procure RTKs,[2] it is responsible for supporting countries in RTK forecasting and supply planning and in managing the logistics associated with distributing the test kits. Forecasting has long been a challenging area for RTKs, and GHSC-PSM is eager to improve this while more clearly clarifying its role in ensuring a secure supply of test kits for countries. Plans to survey countries about their role in RTK management and root causes of stockouts will help inform a strategy to improve RTK management that will be developed in consultation with USAID.

Data Analysis

Task Order 1's performance by key indicator is reported under this section.

Percentage of Shipments Delivered OTIF Within the Minimum Delivery Window (A1)

OTIF reflects the extent to which customers can be confident that their order will arrive at the right time, and in the right quantity. GHSC-PSM has been slow to gain traction on this indicator. However, improvement measures and concerted efforts were made in Q3 to implement targeted strategies at every step of the fulfillment process to improve performance on this critical metric (see "Objective 1"). In Quarter 2 of FY17, GHSC-PSM adopted stricter OTIF delivery windows, which decreased the definition of on-time delivery from 30 days before and five days after the agreed delivery date to 14 days before and seven days after the agreed delivery date.

In Q3, GHSC-PSM delivered 809 HIV/AIDS commodity shipments — 461 more than in Q2 — and significantly reduced shipments that were due before Feb. 2. Of all shipments delivered, 204 (25 percent) were delivered OTIF, an improvement on Q2 (6 percent). However, most orders (95 percent)

[2] Procurement of RTKs is led by GHSC-RTK.

were delivered in full. OTIF performance by product category is shown in Exhibit 1. Supplier delays relating to the availability of goods was a primary reason for late deliveries. Other common factors included internal process delays relating to sourcing, supplier delays linked to shipping documents, and waiver/import process delays. Mitigation measures being taken include working with suppliers to improve goods available dates, escalating orders with supplier relations, ensuring vendors share documents on time or in advance, and exploring alternate supply sources. As described under "Objective 1," the project is also setting up commodity-focused teams to ensure end-to-end visibility and oversight. This new structure will help ensure that each commodity category receives the specialized attention it needs to achieve on-time delivery.

Exhibit 1. OTIF Delivery for Task Order 1 (HIV/AIDS) Commodities by Product Category

	All	Adult ARVs	Pediatric ARVs	Lab	Condoms	VMMC	Other Pharma	Food and WASH	Other Non-Pharma
Total no. delivered	809	113	47	415	33	86	59	4	52
OTIF (no.)	204	3	8	109	6	49	5	0	24
OTIF (%)	25	3	17	26	18	57	8	0	46

Average Cycle Time (A3)

Cycle time is the industry's standard indicator of supply chain responsiveness, measuring how long it takes for a customer's order to be delivered once it has been received. The project uses this indicator to identify bottlenecks in the fulfillment process that may impact its ability to deliver orders on time, as well as opportunities to improve its efficiency. Optimal cycle times vary across products, countries, sourcing strategies, and transportation modes. Warehouse fulfillments ship products from GHSC-PSM's regional distributions centers (RDCs) to countries. Direct-drop fulfillments ship products from manufacturers directly to countries.

In Q3, the average cycle time for all TO1 shipments was 154 days — 17 days less than for Q2, indicating improved responsiveness. See Exhibit 2 for average cycle times for all shipments disaggregated by product type, fulfillment method, and delivery mode.

Exhibit 2. Average Cycle Time (Days) for Task Order 1 (HIV/AIDS) Product Categories

Sourcing Channel	All	Adult ARVs	Pediatric ARVs	Lab	Condoms	VMMC	Other Pharma	Food and WASH	Other Non-Pharma
All channels (809)	154	178	169	142	262	76	240	271	134
Air									
Warehouse Fulfillment (32)	101	94	108	N/A	262	77	N/A	N/A	N/A
Direct Drop Fulfillment (510)	180	206	181	162	197	252	240	N/A	182
Sea									
Warehouse Fulfillment (17)	284	N/A	N/A	N/A	284	N/A	N/A	N/A	N/A
Direct Drop Fulfillment (32)	242	262	219	54	247	232	327	271	N/A
Land									
Warehouse Fulfillment (33)	120	113	158	N/A	N/A	N/A	N/A	N/A	N/A
Direct Drop Fulfillment (185)	68	N/A	N/A	80	N/A	47	183	N/A	68

Average Percentage of Shelf Life Remaining for Warehoused Commodities, Weighted by the Value of Each Commodity's Stock (A8)

This indicator is used to gauge the amount of product that is at risk of expiring in GHSC-PSM's RDCs, as well as the RDCs' ability to meet country shelf life requirements. Shelf life remaining across all Task Order 1 products was 77 percent at the end of Q3, most of which has already been allocated to country orders to avoid chance of expiry.

Percentage of Product Procured Using a Framework Contract (A10)

This indicator monitors the project's sourcing strategy and contracting mechanisms. It is based on the theory that setting up framework contracts with suppliers will streamline procurement processes, improve cycle times, and secure the best value for customers.

The percentage of product procured using a framework contract in Q3 was 82 percent — higher than the year-to-date average (80 percent) and the figure for Q2 (79 percent), indicating improvement in securing framework contracts and promoting best value for the project and U.S. government. Framework contracts (also referred to as negotiated long-term agreements) provide an advantage over spot tendering because they eliminate or minimize the number of tendering events for individual purchase orders, including terms and conditions negotiations. If a framework contract includes set pricing and other details, GHSC-PSM can skip the tender process entirely.

The Rwandan Ministry of Health expressed satisfaction with analytical work led by the project to map the lab network and inform instrument procurement decisions, which informed the decision to scale back a planned procurement.

Spot tendering was the norm when GHSC-PSM started. By shifting from higher levels of spot tendering to increased use of framework contracts, GHSC-PSM expects to reduce source cycle times and realize potential cost-savings through negotiation of established product pricing. See Exhibit 3 for disaggregation by tracer product. All ARVs and condoms were procured through framework contracts in Q3, as well as 95 percent of VMMC procurements.

Exhibit 3. Task Order 1 (HIV/AIDS) Commodity Procurements with a Framework Contract by Product Category

Commodity	Value ($)	Framework Contract (%)
Total	155,933,657	82
All ARVs	113,136,867	100
Lab1	23,985,689	2
Condoms	5,502,872	100
VMMC	9,077,937	95
Other Pharma	3,459,111	0
Food and WASH	732,571	0
Other RTK	38,610	0

A majority of lab products are single source, proprietary reagents/supplies procured through Roche, Abbott, and Becton Dickinson. As of FY17Q3, GHSC-PSM did not have framework contracts with these suppliers. The project will continue its efforts to negotiate long-term agreements with all lab vendors.

Percentage of Products Ordered from the Catalog (A11)

This metric identifies how well the project is incorporating standard, commonly ordered products into its catalog, and whether the project is unnecessarily spending time and resources to add nonstandard products that are rarely or never ordered. As only 14 percent of Task Order 1 catalog products were ordered three or more times in the last year, current outcomes indicate that the catalog (which counts 2,540 total products) contains a large quantity of products that are not often ordered. Adult ARVs were

the most-often ordered project, with 30 percent ordered at least three times. More than half of lab items were ordered at least once. This last sentence is key to understanding the challenge with lab products

VENDOR RATING SCORE (A14)

GHSC-PSM uses vendor scorecards to monitor the performance of its commodity suppliers (see Annex I for scorecard methodology). These ratings help the project to manage its subcontracts, monitor performance challenges that impact its orders, and provide feedback to its vendors. Task Order 1 evaluated 32 vendors for an average rating score of 91 percent, indicating excellent vendor performance. Only one vendor had products that did not pass the quality assurance (QA) element (had nonconformities). Order fulfillment was the main area identified for future improvement, with three vendors scoring 60 percent or less on this element. GHSC-PSM will work with these vendors to improve OTIF order fulfillment moving forward.

C7A. PERCENTAGE OF PRODUCT LOST DUE TO EXPIRY WHILE UNDER GHSC-PSM CONTROL

Monitoring product expiries is useful to understand the project's warehouse management performance, such as the implementation of "first expired, first out" (FEFO) policies. While a small volume of expiries is always likely to occur, these can be managed by close shelf life monitoring, FEFO practices, and other warehousing best practices.

Expiry from RDCs was negligible. Further, expiries from Haiti's Task Order 1 inventory declined from 8 percent last quarter to 1 percent in Q3; the project is continuing to monitor expiry dates of warehoused products and to coordinate with the Haitian Ministry of Health to improve the flow of these products. See Exhibit 4 for expiry values in U.S. dollars and percentage lost.

Exhibit 4. Task Order 1 (HIV/AIDS) Products Lost Due to Expiry While Under GHSC-PSM Control

Location	Supply Chain Level	Value of Expiry ($)	Loss Percentage (%)
RDCs	Global	350	0.001
Haiti	Central	117,299	1
Nigeria	Central	78,471	N/A
Vietnam	Central	74,120	2

C7B. PERCENTAGE OF PRODUCT LOST DUE TO THEFT, DAMAGE, OR OTHER CAUSES WHILE UNDER GHSC-PSM CONTROL

Aside from expiries, monitoring additional types of product lost illustrates performance for factors such as managing vendors and 3PL providers to prevent damaged shipments, strong security and business conduct controls to prevent theft, and responsiveness to other types of loss incidents.

The most common types of losses under Task Order 1 this quarter were damages of global shipments en route to countries (see Exhibit 5). In these cases, the vendors and transporters responsible agreed to reimburse, replace, or credit the value of the loss. [redacted] In Zimbabwe, a batch of

male condoms failed post-shipment QA testing conducted by the Medicines Control Authority of Zimbabwe. The manufacturer has agreed to replace the batch.

Exhibit 5. Task Order 1 (HIV/AIDS) Products Lost Due to Theft, Damage, or Other Causes While Under GHSC-PSM Control

Country	Supply Chain Level	Site of Loss	Type of Loss	Total Value of Loss ($)	Loss Percent (%)
Nigeria	Global	Transit	Damage	413	0.006
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Vietnam	Global	Transit	Damage	122	0.004
Cameroon	Global	Transit	Damage	10,650	2.4
Nigeria	Central	Transit	Damage	4,015	N/A
Zimbabwe	Central	Storage	Other	16,070	1.2

PERCENTAGE OF GHSC-PSM-PROCURED MOLECULAR INSTRUMENTS THAT REMAINED FUNCTIONAL DURING THE ENTIRE REPORTING PERIOD (C10)

This indicator demonstrates GHSC-PSM's management of maintenance contracts for instruments that are used for HIV viral load and early-infant diagnosis testing. It reflects the ability of global procurement to influence service agreements and manufacturer response, as well as the results of in-country systems strengthening aimed at improving countries' capacity to manage the equipment in their health system.

GHSC-PSM has procured molecular instruments for, or manages maintenance contracts for, testing viral load in a total of four countries since project launch: Ethiopia, Haiti, Mozambique, and Nigeria. In Q3, 89 percent of equipment remained functional for the entire reporting period — 10 percent higher than in Q2 (79 percent). In Ethiopia, 19 of the 20 machines remained functional. In Mozambique, three of the five machines had a breakdown in Q3: one machine was out of service for 15 days, one for 14 days, and the other for five days. In Nigeria, four machines experienced interrupted service in Q3 for various reasons, causing delays ranging from three to 24 days.

By the end of Q3, all except one were functioning correctly. Machine functioning rates for each country are:

- **Ethiopia:** 95 percent (of 20 machines total)
- **Haiti:** 100 percent (of six machines total)
- **Mozambique:** 40 percent (of five machines total)
- **Nigeria:** 90 percent (of 42 machines total)

Malaria (Task Order 2)

This section provides an overview of key malaria-related activities occurring in Q3 under Task Order 2. Following, it presents performance information for required quarterly indicators along with a detailed analysis of this data.

Introduction

Clear U.S. President's Malaria Initiative (PMI) guidance is in place globally to assist countries with prevention, treatment and mitigation efforts for malaria. Under Task Order 2 and working with PMI country advisors, GHSC-PSM offers partner countries new approaches to strategic planning, logistics, data visibility and analytics, and capacity building, along with technical leadership to strengthen global supply, demand, financing, and introduction of existing and future malaria commodities. Task Order 2 also supplies life-saving malaria treatment and prevention commodities such as antimalarial medicines, RDTs, and LLINs. USAID missions in 20 countries requested technical assistance support from Task Order 2: Angola, Burkina Faso, Burma, Burundi, Cambodia, Ethiopia, Ghana, Guinea, Liberia, Madagascar, Malawi, Mozambique, Nigeria, Regional Development Mission for Asia, Rwanda, South Sudan, Uganda, Zambia, and Zimbabwe. Also, GHSC-PSM procured malaria commodities for 27 countries.

Key Activities in Q3

Continued education and awareness on malaria and its burden on the health and well-being of women, children, and men globally remains vital to advancing PMI strategies. In that spirit, GHSC-PSM commemorated World Malaria Day (on April 25) through initiatives that helped staff better understand the unique nuances of Task Order 2 and malaria in general. For example, the project launched a photo contest (see Objective 3); presented on global malaria progress and GHSC-PSM's role at an all-staff meeting; and organized commemorative activities across countries such as an upcoming award ceremony in Burkina Faso, celebrations under the theme "End Malaria for Good" in Ethiopia, and an event at the U.S. embassy in Nigeria for senior-level officials to showcase malaria commodities delivered by the project.

Considerable activity was focused around supporting countries to develop their malaria operational plans. In Q3, GHSC-PSM supported malaria operational plan development and provided gap analyses in all countries where Task Order 2 has a presence. Through this support, countries reviewed progress to date, learned about potential future supply chain system strengthening interventions, and received assistance with identifying commodity needs to ensure malaria commodity security. For example, in May, GHSC-PSM organized, facilitated, and supported malaria stakeholder meetings for PMI in Nigeria, bringing together PMI with national leaders, the Global Fund, the World Health Organization (WHO), and other stakeholders. This meeting presented the anticipated budget for FY18 and provided an opportunity to review past successes and challenges, future priorities, and potential funding gaps.

Task Order 2 also provided crucial support to countries to strengthen LMIS reporting, supporting in-country training, system piloting, and system scale-up across several countries, including Burkina Faso, Ethiopia, Malawi, and Mozambique.

Looking Ahead to Q4

Task Order 2 will be wrapping up several major activities, including updating the malaria seasonality index, exploring sulfadoxine-pyrimethamine for targeted local procurement, and advancing key market dynamics work. The team will continue to work closely with HSS to identify priority activities and initiatives to include in the FY18 work planning cycle. Activities to enhance in-country LMIS will also be

ongoing, and support is planned to help countries like Ethiopia and Malawi to roll out and scale up functional eLMIS.

Data Analysis

Task Order 2's performance by key indicator is reported under this section.

Percentage of Shipments Delivered OTIF, Within the Customer-Specified Delivery Window (A1)

OTIF reflects the extent to which customers can be confident that their order will arrive at the right time, in the right quantity. Several improvement measures and concerted efforts were made in Q3 to address low OTIF performance. GHSC-PSM is implementing targeted strategies at every step of the fulfillment process to improve performance on this critical metric (see "Objective 1"). Earlier this year, GHSC-PSM adopted stricter OTIF delivery windows, which decreased the definition of on-time delivery from 30 days before and five days after the agreed delivery date to 14 days before and seven days after the agreed delivery date.

In Q3, GHSC-PSM made 125 malaria commodity shipments — 4 times the number of shipments made in Q2. Of these, 19 (15 percent) were delivered OTIF, 2 percent higher than performance in Q2 (13 percent). Almost all orders (97 percent) reached their destination in full. See Exhibit 6 for a breakdown of orders by category.

Key sources of delays for malaria commodity delivery included difficulty obtaining importation waivers for certain countries, delays in loading containers from suppliers, slow customs clearance, and production lags due to shortages of active productive ingredients from high-volume suppliers. To improve timeliness of deliveries, the project has implemented a new order promising tool that will be used by the client relations team and by countries. This tool will help set realistic agreed delivery dates and will provide guidance for countries in setting dates for future orders.

Artemisinin-based combination therapy (ACTs) had the strongest OTIF delivery performance (35 percent), followed by RDTs (33 percent). Late delivery of LLINs was partly because most LLIN orders were placed eight to 11 months ago, before there was a systematic way to produce accurate delivery dates. As these deliveries are cleared, this will no longer be a factor moving forward. Current delays are primarily due to the large size of LLIN orders and limited loading capacity of containers by suppliers. See Exhibit 6 for a breakdown of OTIF delivery performance by product type.

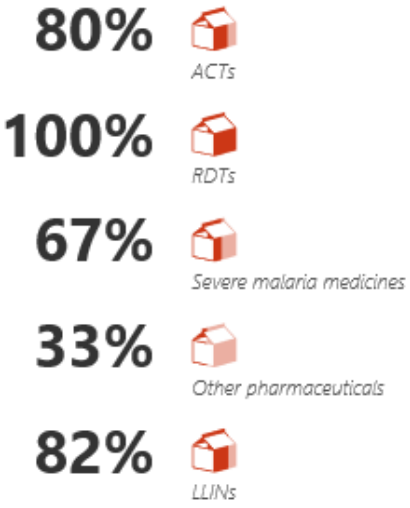
Exhibit 6. OTIF Delivery for Task Order 2 (Malaria) Commodities by Product Category

	All	ACTs	RDTs	Severe Malaria Medicines	Other Pharma	LLINs	All Other Non-Pharma
Total No. Delivered	125	37	6	3	4	38	37
OTIF (no.)	19	13	2	0	1	2	1
OTIF (%)	15	35	33	0	25	5	3

Percentage of QA Processes Completed Within the Total Estimated QA Lead Time (A2)[3]

Task Order 2 conducts full batch pre-shipment testing for all pharmaceuticals and LLINs.[4] This indicator monitors the timeliness of QA processes that are required for many malaria products. It measures the project's management of its QA lab vendors and the impact of QA procedures on the overall order fulfillment cycle time for malaria products, including LLINs.

Four out of every five QA processes were completed within the total estimated QA lead time in Q3. RDTs had the strongest performance at 100 percent, followed by LLINs and ACTs at 82 percent and 80 percent, respectively. Due to some delays with method transfers and overall testing capacity at the quality control labs, some products (severe malaria medicines and other pharmaceuticals) took longer than expected. However, as method transfers by product by supplier only need to be done once, this will remedy any future delays with routine products.



Average Cycle Time (A3)

Cycle time is the industry's standard indicator of supply chain responsiveness, measuring how long it takes for a customer's order to be delivered once it has been received. The project uses this indicator to identify bottlenecks in the fulfillment process that may impact its ability to deliver orders on time, as well as opportunities to improve its efficiency. Optimal cycle times vary across products, countries, sourcing strategies, and transportation modes. Warehouse fulfillments ship products from GHSC-PSM's regional distributions centers (RDCs) to countries. Direct-drop fulfillments ship products from manufacturers directly to countries.

The average cycle time for all shipments was 234 days. While this represents an increase from the cycle time in Q2 (206 days), the number of shipments made grew significantly from Q2 (32 shipments) to 125 shipments — meaning this quarter, GHSC-PSM ensured 20 countries received lifesaving supplies to fight malaria. Some fluctuation in cycle times is to be expected as the type of commodities delivered change (some products have naturally longer cycles than others.)

Some commodities (e.g., LLINs and certain pharmaceuticals) should be expected to have lengthier production lead times. For other products, the Strategic Sourcing team is prioritizing long-term agreements and assessing strategies that will enable advanced planning and reduce the administrative burden. The planned Source team reorganization will adopt a "cradle to grave" procurement approach and minimize handoffs within the GSC team, which is expected to reduce cycle time. For average cycle times disaggregated by product type, fulfillment type, and delivery mode, see Exhibit 7.

[3] Two shipments of LLINs to Nigeria were excluded from the calculation because they required the loading of the shipments to be witnessed. Quality assurance inspection and test results were available significantly before the shipment was loaded. Loading date is determined based on factors external to QA processes.

[4] GHSC-PSM performs quality assurance for malaria commodities only. Quality control testing for other task orders is performed under the GHSC-Quality Assurance contract.

Exhibit 7. Average Cycle Time (Days) for Task Order 2 (Malaria) Product Categories

Sourcing Channel	All	ACTs	RDTs	Severe Malaria Medicines	Other Pharma	LLINs	All Other Non-Pharma
All channels (125)	234	226	213	364	281	272	192
Air							
Warehouse Fulfillment (8)	58	60	N/A	N/A	37	N/A	N/A
Direct-drop Fulfillment (78)	266	264	213	364	363	330	233
Sea							
Direct-drop Fulfillment (39)	207	N/A	N/A	N/A	N/A	251	95
No sea deliveries under warehouse fulfillments were made in Q3 *No deliveries for sulphadoxine-pyrimethamine were made in Q3*							

AVERAGE PERCENTAGE OF SHELF LIFE REMAINING FOR WAREHOUSED COMMODITIES, WEIGHTED BY THE VALUE OF EACH COMMODITY'S STOCK (A8)

This indicator is used to gauge of the amount of product that is at risk of expiring in GHSC-PSM's RDCs, as well as RDCs' ability to meet country shelf life requirements. Shelf life remaining across all Task Order 2 products was 61 percent at the end of Q3. This includes some ACTs that were transferred to GHSC-PSM from the predecessor project, which cannot be allocated to countries at its current shelf life. This is a known risk and is under discussion with USAID.

PERCENTAGE OF PRODUCT PROCURED USING A FRAMEWORK CONTRACT (A10)

Framework contracts for procurement help ensure the project is purchasing health commodities at the best possible price. They also streamline procurement processes to reduce delays and ensure quicker product delivery. The project is working toward negotiating more framework contracts for its commodities. The value of framework contracts was $31,277 (0.1 percent of the total procurement value of $31,297,462) for Task Order 2. To remedy this, Task Order 2 has implemented IDIQs for ACTs, and expects to finalize IDIQs for AS/AQ and RDTs in October 2017. The long-term sourcing strategy for LLINs is also in process, but is contingent upon modifying PMI policy. Other malaria pharmaceuticals are being managed as part of the basic ordering agreements with USAID-approved wholesalers; lab consumables will also be managed under select basic ordering agreements. All long-term sourcing agreements for Task Order 2 should be in place by early 2018.

Percentage of Products Ordered from the Catalog (A11)

Zero batches tested were out of specification.

This metric identifies how well the project is incorporating standard, commonly ordered products into its catalog, and whether the project is unnecessarily spending time and resources to add nonstandard products that are rarely or never ordered. As only 16 percent of Task Order 2 catalog products were ordered three or more times in the last year, current outcomes indicate that the project catalog (which counts 204 total products) contains many products that are not often ordered. Sulphadoxine-pyrimethamine (SP) products are most likely to be frequently ordered (60 percent of orders were ordered three or more times). However, there are only five of these products in the catalog. More than half (53 percent) of ACT products were ordered at least once. RDTs have the most unused products, with 87 percent of products (out of 15 total) not ordered in the last year. Consequently, the project is working with PMI to reassess which RDTs to include in the catalog to improve efficiency.

Percentage of Batches of Product Showing Nonconformity (A13)

This indicator reflects on whether GHSC-PSM is procuring from vendors with strong records of high product quality.[5] In Q3, GHSC-PSM tested 306 batches of malaria products during Q3, none of which showed any nonconformity. Further, no out-of-specification findings for Task Order 2 have been observed over the life of the project to date. This finding is also reflected in the vendor rating scores (see below), which have been consistently high on quality. Task Order 2 has a strict policy for selecting suppliers and is required to perform full batch pre-shipment quality control testing. This is a rigorous process, but one which guarantees that people receive high-quality malaria products. The majority of testing was conducted for ACTs (236 batches), with additional testing for RDTs, LLINs, severe malaria medicines, and other pharmaceuticals such as SP/AQ co-blisters.

Vendor Rating Score (A14)

GHSC-PSM uses vendor scorecards to monitor the performance of its commodity suppliers and QA lab services providers (see Annex I for scorecard methodology). These ratings help the project manage its subcontracts, monitor performance challenges that impact its orders, and provide feedback to its vendors.

Task Order 2 evaluated 15 commodity vendors for an average rating score of 90 percent, indicating excellent vendor performance. All vendors had products that passed QA. One vendor scored under 60 percent for OTIF order fulfillment, indicating this as a potential area for improvement.

All three lab QA providers that provide services to the project were evaluated for performance, achieving an average score of 76 percent — a slight increase from the previous quarter (73 percent). In the most heavily weighted element — reliability of service (on-time provision of completed test reports) — labs scored an average of 69 percent. Due to the large size of some shipments, some labs required more time to complete high-quality analyses. Labs scored very well on frequency of modifications to certificates of analysis (no modifications) and on customer service (100 percent).

Percentage of QA Investigation Reports Submitted Within 30 Days of Outcome Determination (A15)

This is a management indicator for the project's QA team, monitoring the timeliness of the QA investigations it conducts and its communication with PMI. The QA team conducted one investigation related to artesunate injections and two solvents that arrived in the Netherlands RDCs with

[5] This indicator is only applicable for Task Order 2 as QA testing is conducted under the GHSC-Quality Assurance contract for other task orders.

temperature/climate exclusions and physical damage. The investigation determined that the goods were still suitable for use, and they were subsequently released into the normal inventory. The certificate of conformance was submitted to PMI as notification of the outcome, pending a formal investigation report to be submitted in Q4 of FY17.

All QA investigation reports were submitted on time.

C7A. PERCENTAGE OF PRODUCT LOST DUE TO EXPIRY WHILE UNDER GHSC-PSM CONTROL

SNAPSHOT: Training Auditors in Madagascar to Improve Governance

GHSC-PSM supported a training course for 24 auditors for district pharmacies and health facilities from across five regions, part of a package of interventions to address supply chain problems stemming from weak governance in Madagascar. This course prepared ministry staff to conduct internal audits and covered such topics as methods and practices of an audit and drafting of audit reports.

No expiries of malaria products were reported this quarter.

C7B. PERCENTAGE OF PRODUCT LOST DUE TO THEFT, DAMAGE, OR OTHER CAUSES WHILE UNDER GHSC-PSM CONTROL

Aside from expiries, monitoring additional types of product lost (see Exhibit 8) illustrates performance for such factors as managing vendors and 3PL providers to prevent damaged shipments, strong security and business conduct controls to prevent theft, and responsiveness to other types of loss incidents.

Two LLIN shipments, to Tanzania and Burma, arrived with protective seals intact but with shortages of several bales. Reimbursement or replacements are in progress from the suppliers. In Nigeria, a fire at the Logistics Management Coordination Unit in Zamfara resulted in damage to 3PL trucks that had been loaded with malaria commodities for distribution. An insurance claim for value of these commodities is in progress. Also in Nigeria, a delivery of RDTs and other commodities was transported in an open vehicle, exposing them to heat, rain, and dust and rendering them unusable. The 3PL has agreed to reimburse 110 percent of the value of the loss, according to its subcontract with GHSC-PSM.

Exhibit 8. Task Order 2 (Malaria) Products Lost to Theft, Damage, or Other Causes While Under GHSC-PSM Control

Country	Supply Chain Level	Site of Loss	Type of Loss	Total Value of Loss ($)	Loss Percent (%)
Burma	Global	Transit	Other	3,900	1
Madagascar	Global	Transit	Other	10,584	1
Mozambique	Subnational 1	Storage	Other	5,874	5

Nigeria	Central	Storage	Damage	19,388	N/A
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Nigeria	Subnational 1	Transit	Other	2,333	N/A
Tanzania	Global	Transit	Other	12,269	1

Reproductive Health (Task Order 3)

This section provides an overview of key RH-related activities occurring in Q3 under Task Order 3. Following, it presents performance information for required quarterly indicators along with a detailed analysis of this data.

Introduction

Task Order 3 serves as the primary vehicle through which USAID procures and provides family planning health commodities for USAID health programs; offers technical assistance to improve supply systems and commodity security in partner countries; and provides technical leadership to strengthen the global supply demand, financing, and introduction of existing and future RH commodities. Task Order 3 currently has an in-country presence in 16 countries: Angola, Burundi, Ethiopia, Ghana, Guinea, Haiti, Liberia, Madagascar, Malawi, Mozambique, Nepal, Nigeria, Pakistan, Rwanda, South Sudan, and Zambia.

Key Activities

Drawing from market dynamics research and cross-functional commodity council sourcing strategy efforts, GHSC-PSM actively worked to integrate quality-assured generic oral contraceptives into Task Order 3's product portfolio. Earlier this year, the project issued a request for information to gather market intelligence on oral contraceptives, which a request for quotation tailored to a broader supply base, supportive of GHSC-PSM's sourcing strategy for oral contraceptives. The project is now in the process of awarding subcontracts to four best-value offerors (two of which are generic suppliers), resulting in potential cost savings, reduced supply risk, and positive market impacts. Staffing was a key challenge for the Source team in Q3, and resolving this issue is a priority for project leaders.

With support from the GHSC-PSM Francophone procurement planning and monitoring report (PPMR) administrator, the West Africa Health Organization, and the Coordinated Assistance for Reproductive Health Supplies Group, 3,000 intrauterine devices (IUDs) were saved from possible expiry and non-use in Benin — yielding more than $2,000 in cost savings and averting an estimated 1,993 unwanted pregnancies. Following an IUD transfer request from Benin's Ministry of Health in January, Niger and Togo were identified as product recipients; Togo received its stock on June 9, 2017. This type of intervention required close collaboration with ministries of health, USAID missions, and other partners. It also required regulations in the countries involved to allow for possible transfer and lower product shelf life. Through productive collaborations, the project navigated these issues, and other transfers are being considered among Benin, Burundi, and Cote d'Ivoire.

The project also led an analysis of commercially available private sector data to support USAID/Washington in better understanding contraceptive availability using third-party specialty pharmaceutical market data vendors that collect and analyze data across countries in the Latin America and Caribbean region. This is an ongoing activity: Work started in FY17 with IMS as a subcontractor. IMS worked with Task Order 3 to develop a template for quarterly analyses using IMS panels as well as

Demographic and Health Survey data (plus public sector consumption data, as available) to help explain market trends in Brazil, the Dominican Republic, Guatemala, Honduras, and Nicaragua. Quarterly analyses of market dynamics will increase awareness of the gaps and needs for market, commodity, and supply chain support across countries, especially those that are facing new challenges such as new diseases or graduation.

Task Order 3 has also subcontracted IMS to conduct a private sector supply chain and market data analysis in select Nigerian states for family planning, HIV, and MNCH products. This activity is co-funded by the mission and other GHSC-PSM task orders. The Nigeria field office and the project's headquarters team monitored the work on the ground. Data collection is ongoing and includes product, presentation, packaging, price, manufacturer, source, volume, and outlet type at outlet, wholesale, or import level.

Other subcontractors have experienced some management challenges such as struggling to meet timelines for technical deliverables. Despite tight follow up by Task Order 3 staff, some tasks still ran behind schedule. Also, some research activities required institutional review board and mission director approvals, which added to delays. Task Order 3 is working with these subcontractors to develop contingency plans and ensure that tasks are completed as directed by USAID in the future.

Looking Ahead to Q4

The Emerging Trends in Supply Chain Course took place Sept. 11-16, 2017. The Task Order 3 team worked with in-house experts and in collaboration with USAID to develop the course materials to provide valuable training to USAID senior officers. Task Order 3 also is supporting project participation in the Reproductive Health Supplies Coalition Annual Membership Meeting in October in Dakar, Senegal, and the GHSC Summit in November in Accra, Ghana.

Data Analysis

Task Order 3's performance by key indicator is reported under this section.

Percentage of Shipments Delivered OTIF, Within the Minimum Delivery Window (A1)

OTIF 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, in the right quantity. While GHSC-PSM has been slow to gain traction on this indicator as the project has built its supply chain operations, in Q3, several improvement measures and concerted efforts were made to implement targeted strategies at every step of the fulfillment process to improve performance on this critical metric (see "Objective 1"). Earlier this year, GHSC-PSM adopted stricter OTIF delivery windows, which decreased the definition of on-time delivery from 30 days before and five days after the agreed delivery date to 14 days before and seven days after the agreed delivery date.

In Q3, GHSC-PSM delivered 20 RH commodity shipments — more than double the amount in Q2. Of these, one (5 percent) was delivered OTIF (see Exhibit 9.) However, 19 orders were delivered in full. In response to requests by countries, some deliveries were made earlier than planned. Late deliveries were due to a number of factors, including extended importation lead times in (see Indicator A7), delays due to challenging importation requirements (e.g., in Ghana and Mozambique), unplanned one-off procurements (e.g., requests for implant kits by Ethiopia and lab equipment by Ghana), and limited production capacity at the only available Implanon provider. Measures described above will improve on-time delivery in the future.

Exhibit 9. OTIF Delivery for Task Order 3 (RH) Commodities by Product Category

	All	Injectable Contraceptives	Implantable Contraceptives	Combined Oral Contraceptives	Copper-Bearing IUDs	Progestin-Only Pills	Standard Days Method	All Other
Total no. delivered	20	8	3	1	3	2	3	0
OTIF (no.)	1	0	0	0	1	0	0	0
OTIF (%)	5	0	0	0	33	0	0	0

AVERAGE CYCLE TIME (A3)

Cycle time is the industry's standard indicator of supply chain responsiveness, measuring how long it takes for a customer's order to be delivered once it has been received. The project uses this indicator to identify bottlenecks in the fulfillment process that may impact its ability to deliver orders on time, as well as opportunities to improve its efficiency. Optimal cycle times vary across products, countries, sourcing strategies, and transportation modes. Warehouse fulfillments ship products from GHSC-PSM's RDCs to countries. Direct-drop fulfillments ship products from manufacturers directly to countries.

The average cycle time for all shipments was 220 days. While this represents an increase from the cycle time in Q2 (177 days), the number of shipments made grew significantly from Q2 (nine shipments) to 20 shipments — meaning this quarter, GHSC-PSM doubled its delivery of RH supplies.

For average total cycle times disaggregated by product type, fulfilment type, and delivery mode, see Exhibit 11.

Exhibit 11. Average Cycle Time (Days) for Task Order 3 (RH) Product Categories

Sourcing Channel	All	Injectable Contraceptives	Implantable Contraceptives	Combined Oral Contraceptives	Copper-Bearing IUDs	Progestin -Only Pills	Standard Days Method	Other
All channels (20)	220	79	256	247	292	356	262	275
Air								
Warehouse Fulfillment (9)	206	64	N/A	247	292	472	N/A	N/A

Direct-drop Fulfillment (5)	245	N/A	256	N/A	N/A	N/A	230	N/A
Sea								
Warehouse Fulfillment (4)	191	191	N/A	NA	N/A	N/A	N/A	N/A
Direct-drop Fulfillment (2)	283	N/A	N/A	N/A	N/A	239	326	N/A
No deliveries for emergency oral contraceptives were made in Q3.								

Percentage of Line Items Imported Using a Temporary Waiver (A7)[6]

Countries often order products that are not registered with the local drug authority. Further, regulations are constantly changing in the countries GHSC-PSM supports, and donors, procurers, and vendors have to keep up with these shifts. In cases such as these, the project may need a temporary waiver for certain commodities to be imported, which can take time to secure. This indicator reflects the project's ability to encourage suppliers to register products in the countries it serves and to identify other products that are already registered that may meet their needs. It can also be used to provide context on cycle time performance. Task Order 3 had a total of 20 line item shipments delivered in Q3. Of those, seven (35 percent) required importation using a temporary registration waiver. Products included combined oral contraceptives in Ghana, injectable contraceptives in Madagascar, copper-bearing IUDs and injectables in Mali, and copper-bearing IUD and progestin-only pills in Mozambique.

Average Percentage of Shelf Life Remaining for Warehoused Commodities, Weighted by the Value of Each Commodity's Stock (A8)

This indicator is used to gauge the amount of product that is at risk of expiring in GHSC-PSM's RDCs, as well as RDCs' ability to meet country shelf-life requirements. Shelf life remaining across all Task Order 3 products was 65 percent at the end of Q3. However, standard shelf life for most family planning products is between three and seven years, limiting the expiry risk for these products as compared to HIV and malaria products, which often have only two years.

Percentage of Product Procured Using a Framework Contract (A10)

Framework contracts for procurements help ensure the project is purchasing health commodities at the best possible price. They also streamline procurement processes to reduce delays and ensure quicker product delivery. In Q3, the majority (about 80 percent) of RH products were procured using a framework contract, representing the best possible value for the project and the U.S. government. The total value of commodities procured was $11,451,032. This comprised $1,135,770 for injectable contraceptives, $9,566,750 for implantable contraceptives, $651,312 for combined oral contraceptives, and $97,200 for progestin-only pills.

[6] Data for TO1, TO2, and TO4 is not available. GHSC-PSM will continue to work on a systematic method for tracking registration data.

PERCENTAGE OF PRODUCTS ORDERED FROM THE CATALOG (A11)

This metric identifies how well the project is incorporating standard, commonly ordered products into its RH catalog, which has 45 total products. In Q3, 44 percent of Task Order 3 catalog products were ordered three or more times in the last year. Most products were ordered at least once in the last year.

VENDOR RATING SCORE (A14)

GHSC-PSM uses vendor scorecards to monitor the performance of its commodity suppliers (see Annex I for scorecard methodology). These ratings help the project to manage its subcontracts, monitor performance challenges that impact its orders, and provide feedback to its vendors. Task Order 3 evaluated four vendors for an average rating score of 85 percent, indicating good vendor performance. The project will continue to work closely with vendors to ensure strong performance.

PERCENTAGE OF PRODUCT LOST DUE TO EXPIRY WHILE UNDER GHSC-PSM CONTROL (C7A)

No losses of Task Order 3 products were reported this quarter.

PERCENTAGE OF PRODUCT LOST DUE TO THEFT, DAMAGE, OR OTHER CAUSES WHILE UNDER GHSC-PSM CONTROL (C7B)

No losses of Task Order 3 products were reported this quarter.

Maternal, Newborn and Child Health (Task Order 4)

This section provides an overview of key MNCH and Zika-related activities occurring in Q3 under Task Order 4. Following, it presents performance information for required quarterly indicators along with a detailed analysis of this data.

Introduction

The MNCH and Zika commodities task order provides USAID missions, bureaus, and operating units with a worldwide mechanism to support USAID's goal of ending preventable child and maternal deaths through increasing access to quality-assured MNCH commodities. It also supports the reduction of negative pregnancy outcomes associated with the Zika virus by increasing availability of preventive commodities such as insect repellent.

Task Order 4 activities align with USAID's MNCH commodity framework, concentrating on three intermediate results:

- Strengthened MNCH commodity systems in countries
- Increased access and appropriate use through sustainable delivery of and demand for MNCH commodities and pharmaceutical services
- Ensured supply of quality-assured MNCH commodities

GHSC-PSM provides support to 14 of USAID's 25 Priority MNCH countries: Democratic Republic of the Congo, Ethiopia, Ghana, Haiti, Liberia, Madagascar, Malawi, Mali, Mozambique, Nepal, Nigeria, Pakistan, Rwanda, and Zambia. It also works with Colombia, the Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Jamaica, and Nicaragua on Zika-related activities.

Key Activities in Q3

From April to June 2017, Task Order 4's team had two key focus areas: 1) improving data visibility across MNCH-related GHSC-PSM project data and 2) working to raise awareness around quality issues

for MNCH commodities. In June, it launched a country-level tracking system to increase visibility of activities that receive Task Order 4 funding. The new system was well received by USAID in Washington, D.C. Also, the team furthered the Collaborative Registration of WHO-Prequalified Medicines process in an ongoing effort to increase the availability of pre-qualified MNCH commodities at the country level. During Q3, GHSC-PSM reached out to the manufacturers of pre-qualified MNCH products to determine registration status in USAID's 25 MNCH priority countries. Also, Task Order 4's headquarters-based experts provided technical assistance to Madagascar, Nepal, and Nigeria and on MNCH commodities and supply chain activities, including forecasting and supply planning, LMIS, and strategy design.

To promote global technical leadership and capacity building, Task Order 4 supported two high-visibility events. For the introductory supply chain course for USAID, the team incorporated MNCH commodities and their system requirements into the course curriculum, giving participants additional insight into supply chain needs for key MNCH commodities like oxytocin, magnesium sulfate, and amoxicillin. Also, as co-chair of the Maternal Health Supply Caucus, Task Order 4's director facilitated a meeting with members to build understanding of maternal health supply-related challenges and to leverage existing approaches to address the bottlenecks undermining commodity security across health systems.

To support Zika prevention, GHSC-PSM's Task Orders 1 and 4 have continued to collaborate on procuring and distributing condoms to prevent sexual transmission of the Zika virus and avert cases of congenital Zika syndrome and microcephaly. GHSC-PSM is currently working to procure approximately 1.5 million bottles of mosquito repellent for use by 210,000 pregnant women in five of these countries to deter vector-borne Zika infection. In parallel with these procurements, the Task Order 4 team is preparing educational materials to provide commodity users with guidance on proper storage and use of repellent, including information about active pharmaceutical ingredient hazards and instructions on container disposal.

Looking Ahead to Q4

In Q4, Task Order 4 will design and launch several core work plan activities. These include leading planning and design efforts for a large stakeholder discussion entitled "A Technical Consultation on Appropriate Messaging for Management of Oxytocin," scheduled for October 18–20, 2017, in Geneva, Switzerland. It will also design and test strategies to promote QA in the private sector; planning for this activity was initiated in Q3 and the team aims to initiate work in the coming months. Also, Task Order 4 will support countries that participated in the U.N. Commission on Life Saving Commodities workshops to support implementation of strategic activities that enable procurement of high-quality MNCH commodities

Data Analysis

Task Order 4 primarily focuses on delivering technical assistance and only rarely procures commodities for countries; however in Q3, Task Order 4 delivered one shipment that was delivered in full, but it was not on time. The overall cycle time for this delivery—a laboratory item fulfilled via direct drop and shipped by sea—was 310 days. Relevant indicators for Task Order 4 are captured in the following section, "Synergies Across Task Orders."

Synergies Across Task Orders

In Q3, as noted under "Project Management," the project prioritized building task order leadership and fostering greater collaboration and communication across GHSC-PSM. Task order directors are co-located and meet frequently to share knowledge, discuss joint initiatives, and solve common challenges together. Further, as described in "Objectives," there were several crosscutting activities led throughout

Q3 to strengthen supply chain systems, policies, and processes across all countries in which the project works. For example, GHSC-PSM evaluated services provided by freight forwarders, led numerous crosscutting training initiatives, and introduced several innovations across the project to achieve efficiencies. This section describes progress against indicators that relate to multiple task orders.

Vendor Rating Score (A14)

GHSC-PSM used vendor scorecards to monitor the performance of its freight forwarders to inform management of these contracts, monitor performance challenges that may impact orders, and develop feedback for vendors (see Annex I for scorecard methodology). This was the first time that freight forwarders were evaluated on the project. Freight forwarders' overall rating was 69 percent. The highest scores were for compliance by the Deliver/Return team in resolving non-conformance reports adequately and on time (100 percent) and in percentage of shipments delivered without overages, shortages, or damages (99 percent). Lowest scores were for responsiveness (specifically the percentage of shipments for which booking-to-waiver initiation cycle times were within four business days) at 42 percent, and for port-to-door ship time reliability for ocean freight (46 percent). This evaluation highlighted some potential areas for vendor improvement and allowed for targeted feedback. The project is working with freight forwarders to improve their performance moving forward.

Innovations Developed, Implemented, or Introduced that Relate to Health Commodity Market or Supply Chain Best Practices (C1)

An innovation is defined as a new technology, product, approach, or operational research study developed, implemented, or introduced during the period of reporting with project support. The purpose of this indicator is to highlight GHSC-PSM's most exciting country initiatives. It shows where the project is using new ideas to drive significant improvements in supply chain performance.

In Q3, GHSC-PSM recorded four innovations. With support from Task Order 1, Cameroon adopted a push distribution approach for ARVs in the Centre region. The Centre region generally had poor onsite delivery rates from the regional warehouse to health facilities, and poor quality and on-time requisitions from health facilities to the regional warehouse. To solve this problem, the region packed medicines in a delivery van and moved from health facility to health facility on a particular axis. At each health facility, the team worked with health facility staff to determine their needs through on-the-job capacity building. Needed HIV commodities were then supplied and the team moved on to the next facility. This new approach combines building onsite capacity of staff with ensuring a continued supply of medicines.

Under Task Order 2, GHSC-PSM started using private sector distribution companies to distribute LLINs for Ghana's nationwide school-based distribution campaign. DHL Global Forwarding, Imperial Health Sciences Ghana Limited, Movis Ghana Limited, and Nexus Excel Log were awarded fixed-price contracts to conduct LLIN distribution to 23,000 schools nationwide. The introduction of private sector vendors eliminates the risk associated with previous options, and teachers are no longer burdened with the task of transporting LLINs to their schools for distribution.

In Pakistan, developing simplified and user-friendly LMIS systems was a key priority in Q3. In support of this goal, under Task Order 3, Pakistan's project team supported the development of a stock sufficiency dashboard for use by provincial governments and other supply chain stakeholders to optimize RH commodity stock management. The new dashboard assists in reviewing RH commodity stock sufficiency from the central to the SDP level and automates monthly stock analysis — a process that was previously conducted manually. Typically, comprehensive reports are run on a quarterly cycle to coincide with complete and up-to-date contraceptive LMIS data at all levels. As a result of this innovation, Pakistan's contraceptive LMIS has been enhanced and decision-makers across system levels can more easily monitor RH stock status. Over the coming months, GHSC-PSM will lead orientation and training sessions for users across system levels to optimize dashboard use.

The dashboard developed for Pakistan has automated analysis for stock sufficiency, making this process more efficient. Photo credit: GHSC-PSM.

Further, a cross cutting innovation was introduced in Mozambique. GHSC-PSM worked with four 3PL transport subcontractors to take fuel cost into account to limit the risks related to fuel price volatility in Mozambique. The innovation will allow a defined percentage of the transport cost to be adjusted as needed following the official fuel (diesel) price defined by the government.

Number of People Trained (C2)

"People trained" refers to any type of participant, student, or learner in a training event, regardless of its duration. 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.

Demand for LabEQIP training increased in Q3, as the value of this tool is increasingly recognized worldwide. Countries that received LabEQIP training in Q3 include Rwanda and Mozambique.

In Q3, the project provided training to 3,982 people, including 2,672 men and 1,310 women. Of those trained, 230 participants were trained at the central level, 1,365 at the subnational level-one, 339 at the subnational level-two, 41 at the subnational level-three, and 2007 at the SDP level. Training activity ramped up significantly this quarter, with most training focused on warehousing and inventory management.

Numbers of participants trained by topic are:

- **Forecasting and supply planning:** 198 (8 central level, 186 subnational level-one)
- **Procurement:** 193 (55 central level, 21 subnational level-one, 114 subnational level-two, and 3 SDP level)
- **Warehousing and inventory management:** 2,103 (62 central level, 454 subnational level-one, 123 subnational level-two, 23 subnational level-three, and 1,441 SDP level)
- **Transportation and distribution:** 21 (all central level)
- **MIS:** 384 (33 central level, 173 subnational level-one, 102 subnational level-two, and 76 SDP level)

- **Governance and financing:** 402 (24 subnational level-one and 378 SDP level)
- **HR and capacity development:** 438 (all subnational level-one)
- **M&E:** 198 (47 central level, 28 subnational level-one, 18 subnational level-three, and 105 SDP level)
- **Strategy and planning:** 45 (4 central level and 41 subnational level-one)

While training is often crosscutting and spans multiple task orders, the approximate breakdown by task order based on where funding for given training courses was sourced is:

- **Task Order 1:** 37 percent
- **Task Order 2:** 38 percent
- **Task Order 3:** 15 percent
- **Task Order 4:** 9 percent

Supply Chain Policies, Regulations, Strategies, or Standard Operating Procedures Developed or Updated (C11)

GHSC-PSM works with countries to help them develop sound, evidence-based policies, strategies, and standard operating procedures to ensure sustainable supply chain strengthening and good governance. This qualitative indicator highlights initiatives that GHSC-PSM supports that impact its work across its core objectives and task orders. Key updates for Q3 are described below.

In South Sudan, GHSC-PSM played a crucial role in restoring the Pharmaceutical Technical Working Group, which had disbanded after the 2016 political conflict. Since its inaugural meeting in March 2017, regularly scheduled group meetings have contributed to fruitful discussions around supply chain management.

In Q3, the following countries reported work related to supporting national-level policymaking, including Angola, Ghana, Lesotho, Madagascar, Malawi, and Zambia. For example, in Ghana, GHSC-PSM supported the Ministry of Health in organizing a three-day workshop to develop training modules for building the capacity of its staff on revised procurement manuals that accompany the amendment of the Public Procurement Act. This effort will improve visibility in health procurement activities and provide an enabling environment for implementing the updated procurement manual. In Angola, GHSC-PSM coordinated working group meetings that encouraged the National Institute for the Fight Against AIDS to finalize an Operational Standard Procedure Manual for Supply Chain Management of HIV Products in June, which will be implemented in all nine project facilities to guide management of HIV commodities.

In Zambia, GHSC-PSM supported the Ministry of Health to publicly launch an e-health strategy on April 28. The strategy addresses telemedicine; information systems; information, education, and communication for health; m-health; and e-learning and capacity building. The strategy is intended to guide the redesign of existing health information systems and implementation of innovative solutions to improve health service delivery. In Malawi, the project provided technical support to the Ministry of Health in developing a daily drug dispensing register, which will be piloted and rolled out in Q4 of FY17. This is expected to improve recording and reporting of malaria drugs dispensed and thereby contribute to better data management.

In Ethiopia, GHSC-PSM provided technical and financial support on a diverse array of activities. For example, it assisted the Ministry of Health in drafting its medical devices management policy and strategy, which addresses the need for developing a standardized and efficient system for procurement, distribution, storage, and use of medical devices. The strategy addresses local production, quality control capability, and equipment maintenance and repair up to the facility level. GHSC-PSM also supported the Pharmaceuticals List Development Consultative Workshop. Implementing the list will improve the supply chain by enabling health facilities, as well as private and public suppliers, to clearly define and rationally quantify their commodity needs. The project also provided technical guidance for developing a warehouse, inventory management, and distribution guideline, as well as 10 warehousing and distribution standard operating procedures.

LOOKING AHEAD

Throughout Q3, GHSC-PSM made significant commitments to improve its performance and address systemic issues that were hindering its ability to deliver. With a strong foundation for success now in place, the project is primed to steadily strengthen its outcomes and achieve results moving forward. As previously described, each task order has targeted priorities to work toward in the coming months that will help GHSC-PSM achieve its overarching objectives.

The project remains fully committed to ensuring that health supplies continue to reach those who need them the most. GHSC-PSM will continue to ensure that there are no delivery delays or stockouts that prevent patients from accessing treatment. Further, it will continue to support countries and coordinate with other supply chain actors in optimizing complex supply chain environments to ensure efficient, streamlined delivery of health commodities worldwide.

Progress will continue to be made on items outlined in the project's action plan. As its performance strengthens, the project will continue to work closely with USAID to identify and address further areas for improvement. Resolving any remaining or emerging challenges is a top priority. Continual improvement is a central pillar of GHSC-PSM, and all project staff are firmly committed to working with USAID to achieve a state-of-the-art global health supply chain.

ANNEX I INDICATOR LIST

Exhibit I.1 presents a list of indicators, along with precise definitions (including numerators and denominators, where applicable) and reporting schedules. More detailed information can be found in GHSC-PSM's M&E plan.[7]

Exhibit I.1 List of Required Indicators

Indicator	Reported in Q3	Notes
Global Supply Chain		
A1. Percentage of line items delivered OTIF, within the minimum delivery window (defined as up to 14 days before or seven days after the agreed delivery date.) **Numerator:** Number of shipments (line items) delivered OTIF within specified period **Denominator:** Total number of shipments (line items) that arrived within the specified period	Y	
A2. Percentage of QA processes completed within the total estimated QA lead time. **Numerator:** Number of shipments complying with pre-established QA lead times during Q3 **Denominator:** Total number of shipments requiring QA processes that were cleared for shipment during Q3	Y	This is only applicable to Task Order 2
A3. Average cycle time (defined as the number of days between when a customer order is submitted to when the shipment is delivered to the customer.) **Numerator:** Sum of lead times for all shipments within a specified period **Denominator:** Count of all shipments within a specified period	Y	
A4. Inventory turns (Average number of times inventory cycles through GHSC-PSM controlled global facilities.) **Numerator:** Total ex-works cost of goods distributed from GHSC-PSM-controlled global inventory stocks ($) **Denominator:** Average daily inventory balance ($)	N	This indicator is reported annually
A5. Total landed cost (total cost of all supply chain operations and expenses associated with delivery of one unit of product.) **Numerator:** Total commodity-related costs ($) incurred in the period **Denominator:** Total cubic meters from delivered shipments whose costs are reflected in the period	N	This indicator is reported semiannually

[7] GHSC-PSM is currently updating its M&E plan, which will be publicly available once approved.

A6. Absolute Percent Error, with variants Mean Absolute Percent Error (MAPE) and Forecast Bias. **Numerator:** Absolute value of the differences between the actual quantities desired to be delivered during the period minus the forecasted values **Denominator:** Sum of the actual quantities desired to be delivered	Y	This is only applicable to Task Orders 1 and 3 and is presented in Annex II
A7. Percentage of line items imported using a temporary registration waiver (this refers to registration waivers only, other types of import waivers are not included) **Numerator:** Line items imported using a temporary waiver in a specified period **Denominator:** Total line items delivered in a specified period	Y	Data is only available for Task Order 3 currently
A8. Average percentage of shelf life remaining for warehoused commodities, weighted by the value of each commodity's stock. **Numerator:** Percentage of shelf life remaining, weighted by value of commodities, summed across all products and all days in specified period **Denominator:** Total value of commodities, summed across all products and all days in specified period	Y	This is only applicable to Task Orders 1, 2, and 3
A9. Percentage of qualified suppliers from which USAID procures product. **Numerator:** Number of qualified suppliers from which GHSC-PSM procured product in a six-month period **Denominator:** Total number of qualified suppliers	N	This indicator is reported semiannually
A10. Percentage of product procured using a framework contract (including IDIQs, blanket purchase agreements, and long-term agreements.) Applicability of this indicator may vary across products as framework contracting may not always be appropriate. **Numerator:** Value of product purchased via framework contracts within a specified period **Denominator:** Total value of commodities purchased within a specified period	Y	
A11. Percentage of catalog products that are ordered frequently. **Numerator:** Total number of catalog product line items that were ordered three or more times in the last year **Denominator:** Total number of products in GHSC-PSM's product catalog at time of reporting	Y	This is only applicable to Task Orders 1, 2, and 3
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. **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	N	Routine reporting on this indicator is not yet finalized

A13. Percentage of batches of product showing nonconformity to acceptance criteria and quality standards. **Numerator:** Total number of batches of product showing nonconformity in a specific period **Denominator:** Total number of batches tested in a specific period	Y	This is only applicable to Task Order 2
A14. Average vendor rating score out of 100 (see detailed criteria in Exhibit I.2 below.) **Numerator:** Sum of all vendor ratings **Denominator:** Number of vendors from whom GHSC-PSM procured commodities, freight forwarder, or lab services during the prior quarter	Y	This is only applicable to Task Orders 1, 2, and 3
A15. Percentage of QA investigation reports submitted within 30 days of outcome determination. **Numerator:** Total number of QA investigation reports submitted to PMI within 30 days of outcome determination **Denominator:** Total number of QA investigation reports due during Q3	Y	This is only applicable to Task Order 2
In-Country Systems Strengthening		
B1. Stockout rate at SDPs per available host-country LMIS data. **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	Y	This is presented in Annex II
B2. Percentage of stock status observations in storage sites where commodities are stocked according to plan, by level in supply system, per available host-country data sources. **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	Y	This is presented in Annex II
B3. SDP reporting rate to LMIS per available host-country data sources. **Numerator:** Number of SDPs that submitted required LMIS reports or order forms during the previous reporting period **Denominator:** Total number of SDPs that should be reporting	Y	This is presented in Annex II
B4. Average rating of in-country data confidence at the central, subnational, and SDP level. **Numerator:** Sum of all rating scores per system level (zero to nine-point scale, with up to three points each for data availability, accuracy, and timeliness) for all sites reporting **Denominator:** Total number of sites reporting	N	This indicator is reported annually

B5. Percentage of countries conducting annual forecasts. **Numerator:** Number of all GHSC-PSM-supported countries that conducted annual forecasts **Denominator:** Total number of GHSC-PSM-supported countries	N	This indicator is reported annually
B6. Percentage of countries conducting quarterly supply plan updates. **Numerator:** Number of all GHSC-PSM-supported countries that conducted supply plan updates in each quarter **Denominator:** Total number of GHSC-PSM-supported countries	Y	This is presented in Annex II
B7. Percentage of total spent or budgeted on procurement of commodities for public sector services by the host government, U.S. government, the Global Fund, or other sources. **Numerator:** Total budgeted/spent on health care commodities by a specific stakeholder in a country **Denominator:** Total budgeted/spent on health care commodities in a specific country	N	This indicator is reported annually
B8. Percentage of initially GHSC-PSM supported supply chain functions carried out by national authorities without external technical assistance. **Numerator:** Number of (detailed level) initially GHSC-PSM supported supply chain functions that are implemented without external donor technical assistance **Denominator:** Total number of (detailed level) initially GHSC-PSM supported supply chain functions examined	N	This indicator is reported annually
B9. Supply chain workforce loss ratio. **Numerator:** Number of health workers with supply chain expertise who left the active health labor force in the last year **Denominator:** Total number of health workers with supply chain expertise at the beginning of last year	N	This indicator is reported annually
B10. Percentage of countries that have a functional logistics coordination mechanism in place. **Numerator:** Total number of countries with a functional logistics coordination mechanism in place as determined by a qualitative assessment **Denominator:** Total number of countries supported by GHSC-PSM for technical assistance	N	This indicator is reported annually
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.) **Numerator:** Number of leadership positions in supply chain management that were held by women in a specified period in countries where GHSC-PSM is providing technical assistance related to workforce development	N	This indicator is reported semiannually

Denominator: Total number of leadership positions held in a specified period, in countries where GHSC-PSM is providing technical assistance related to workforce development		
B12. Absolute percent consumption forecast error, with MAPE and forecast bias variants (APE and MAPE indicator variants should be calculated using absolute values, whereas the forecast bias variant should be calculated using actual values that illustrate under or over forecasting. Ideally, the values should be as close to zero as possible.) **Numerator:** Value of the differences between the actual quantities consumed or issued to SDPs during the period minus the forecasted values **Denominator:** Sum of the actual quantities desired to be delivered	Y	This is presented in Annex II
Crosscutting		
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. **Definition:** Innovation refers to new technologies, new products, new approaches and/or operational research studies developed, implemented, or introduced during the period of reporting.	Y	N/A
C2. Number of people trained. **Definition:** People trained refers to any type of participant, student, or learner in a training event, regardless of its duration. People trained may refer to the different categories of participants (e.g., physicians, nurses, or social workers).	Y	N/A
C3. Overall customer satisfaction rating for GHSC-PSM services (A customer satisfaction score card will be designed for each group of customers (USAID/Washington, USAID missions, National Government counterparts, and other non-Government partners). Customer respondents will use tailored online surveys to provide ratings across categories Specific details on scores will be included in annual reports. **Numerator:** Sum of all customer ratings across all customer services where a rating was submitted **Denominator:** Total number of customer ratings submitted	N	This indicator is reported annually
C4. Percentage of required files submitted to BI&A in the reporting period. (Required files and the frequency of their submission are specified in the BI&A Information Specification for Implementing Partners. Currently, 67 files are required.) **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	N	Routine reporting on this indicator is not yet finalized

C5. Percentage of required files timely submitted to BI&A in the reporting period. (Periodicity of timely submissions relates to data content type and requirements agreed for submission to BI&A.) **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	N	Routine reporting on this indicator is not yet finalized
C6. Percentage of sampled accurate submissions reported to BI&A in the reporting period. (A submission refers to data field, which is a single datum input/import etc. into the BI&A. Accurate refers to the extent of agreement between data recorded in source documents or ARTMIS, and data reported on Intellicog's BI&A reports/electronic forms. A sample of data submissions will be randomly selected to compute this indicator.) *Numerator: Number of sampled data elements in BI&A in agreement with source documents or ARTMIS during the reporting period* *Denominator: Total number of sampled data elements examined for the reporting period*	N	Routine reporting on this indicator is not yet finalized
C7a. Percentage of product lost due to expiry while under GHSC-PSM control. *Numerator: Total value ($) of product lost due to expiry during the quarter* *Denominator for losses in storage: Average inventory balance ($) during the quarter*	Y	This is only applicable to Task Orders 1, 2, and 3
C7b. Percentage of product lost due to theft, damage, or other causes while under GHSC-PSM control. *Numerator: Total value ($) of product lost due to theft, damage, or other causes during the quarter* *Denominator for losses in transit: Total value ($) of product delivered during the quarter*	Y	This is only applicable to Task Orders 1, 2, and 3
C8. Number of global advocacy engagements in support of improved availability of essential health commodities. *Definition: Number of global advocacy engagements in support of improved availability of essential health commodities, including global collaboration reports, meeting minutes, and trip reports. This is a qualitative indicator.*	N	This indicator is reported semiannually
C9. Percent complete and on time submissions to global knowledge management platform. (A submission refers to data element, which is a single datum input/import, etc., into the global knowledge management platform. Timely refers to submission of reports to the knowledge management platform on or before the due date, or within one week after the due date. Completeness refers to no missing data for any data elements reported to knowledge management platform. *Numerator: Number of data elements timely submitted in the reporting period, or number of data elements without any datum input (or with blank fields or missing data) in the reporting period* *Denominator: Total number of sampled data elements contained in the knowledge management platform for the reporting period*	N	Routine reporting on this indicator is not yet finalized

C10. Percentage of GHSC-PSM-procured molecular instruments that remained functional during the reporting period. *Numerator: Total number of GHSC-PSM-procured or supported molecular instruments that remained functional for the entire reporting period* *Denominator: Total number of molecular instruments in the country that were procured or are supported by GHSC-PSM*	Y	This indicator is applicable to Task Order 1 only
C11. Supply chain policies, regulations, strategies, or standard operating procedures developed or updated with GHSC-PSM assistance. *Definition: Description of major GHSC-PSM efforts around developing or updating supply chain policies, regulations, strategies or SOPs. This is a qualitative indicator.*	Y	This is a qualitative indicator discussed throughout the report

Average vendor rating scores (Indicator A14) are composed of several data elements, using vendor records available in ARTMIS and elsewhere (such as subcontracts, invoices, certificates of analysis, goods received notices, and other relevant technical documents, as well as email communications for service ratings.) GHSC-PSM calculates scores for three types of vendor: commodity, freight forwarders, and QA lab services. All scores are calculated on a scale of zero to 100, with zero indicating failing performance and 100 indicating perfect performance. Exhibit 1.2 shows scorecard criteria.

Exhibit I.2 Vendor Scorecard Criteria by Vendor Type

Vendor Type	Scorecard Criteria
Commodity	Product Quality Order Fulfillment Invoicing Accuracy Service
Freight Forwarder (3PL)	Reliability Responsiveness Quality of Shipment Invoice Accuracy Compliance
QA Lab Services	Reliability Completeness (of documentation) Cost Service

ANNEX II CONTEXTUAL DATA

This annex documents contextual indicators the project collects using data derived from countries' supply plans, LMIS, warehouse management systems, and other sources of national data. This data offers valuable contextual information that GHSC-PSM uses to inform decisions relating to its systems strengthening efforts to amplify its impact and most efficiently use its resources. However, this data needs to be interpreted carefully as its correlation to GHSC-PSM's work is less linear due to the complexity of factors involved. Also, these indicators often reflect deeper systemic issues that can only be addressed through sustained efforts from multiple actors over the long term. Ultimately, strong performance against these indicators relies on a number of assumptions, including strong national commitment to health and supply chain strengthening, adequate supporting infrastructure, commitment of national resources, and cooperation of other donors in the supply chain space.

Country Supply Plan Data

Being able to predict what health commodities are needed when supports well-planned, efficient supply chain processes. GHSC-PSM offers various types of assistance to help countries develop supply plans to anticipate future commodity needs. For example, the project offers training in forecasting and supply planning, as well as intensive technical support in developing supply plans. It also helps countries to strengthen their information systems to more accurately collect data that will inform forecasting decisions. The project's level of support and control varies significantly across countries depending on mission buy-in and national strategic priorities. It is important to note that not all countries the project procures commodities for request systems strengthening assistance — meaning the project may have no input on their supply plans.

Accurate demand forecasts ensure that manufacturers have enough time to produce products (to avoid production delays); that suppliers can pre-negotiate orders, organize delivery processes, and ensure their warehouses are stocked (to streamline fulfillment, minimize delivery times, and secure best-value pricing); and that countries receive the goods they actually need (to avoid oversupply and stockouts). GHSC-PSM develops order forecasts for U.S. government-funded commodities, which help GHSC-PSM plan for upcoming commodity demands, negotiate with its suppliers, stock its warehouses, and reliably fulfill future orders. These forecasts are based on supply plans that countries generate, which in turn rely on local forecasting capacity and data quality). In many field offices, GHSC-PSM also compares countries' forecast data with their actual consumption of health commodities. While the project does not deliver health services, looking at information on product use can help identify future commodity demands. For example, if a country consistently uses more artemether/lumefantrine to treat malaria than it plans for, the project could recommend the country increase future orders for this medicine, or offer services such as targeted support to develop a more accurate supply plan for malaria commodities or support to scale up prevention programs. Likewise, if a country consistently uses less of a commodity (for example, a drug regimen that has a more popular alternative), the project can recommend the country scale back orders or support advocacy to promote greater uptake.

Absolute Percent Error (APE), with Variants Mean Absolute Percent Error (MAPE) and Forecast Bias (A6)[8]

This indicator reflects how closely countries' supply plans matched actual orders they requested from GHSC-PSM in Q3. It focuses only on the portion of a countries' planned orders that are financed by the U.S. government and procured through GHSC-PSM. Outcomes on this indicator vary by product, reflecting factors such as the forecasting infrastructure around the product and global demand trends. APE measures the magnitude of the difference between forecasted and actual orders; MAPE measures

[8] This data is only available for HIV/AIDS and RH commodities.

the average of this error over the course of a year; and forecast bias shows the direction of the error (i.e., an over forecast or under forecast). The closer to zero all numbers are, the closer forecasted demand matched actual orders.

HIV/AIDS Commodities

In Q3, the difference between planned and actual orders for HIV/AIDS commodities ranged from 13 percent to 124 percent (see Exhibit II.1). In Q3, the project received considerably fewer orders than expected for pediatric ARVs. This was partly due to Ghana and Zambia changing requested delivery dates to occur in Q4, rather than in Q3 as planned. In addition, Ethiopia, Mozambique, South Africa, and Zimbabwe cancelled male and female condom orders, and Senegal requested condom orders planned for Q3 to be pushed to 2018 and 2019. Demand for lab commodities, while lower than expected, was the closest to predicted with forecast bias registering at -13 percent. The project's Plan team continues to work with other teams on activities to improve the visibility and forecasting of lab commodities. This includes mapping of lab products between data systems, improved order tracking using ARTMIS, and supporting the supply plan review process.

Adult ARVs were the only product category to receive more orders than anticipated. This was driven by a large order of ARVs (TLE) for Zambia (more than 2 million units), which was not included in the country's supply plan submitted in Q2. (The order had been included in the plan submitted in Q1, indicating that the country had planned for it initially.)

To help support more accurate supply planning in the future, the project trained almost 200 people in Q3 on how to accurately forecast and plan commodity needs.

Exhibit II.1 Forecast Bias, APE, and MAPE for HIV/AIDS Commodities

Commodity	Forecast Bias (%)	APE (%)	MAPE (%)
Adult ARVs	39	39	4
Pediatric ARVs	-124	124	22
Lab	-13	13	49
Condoms	-27	27	8

RH Commodities

In Q3, fewer RH commodities were ordered than planned on average (see Exhibit II.2), due to several countries cancelling orders. Liberia, Madagascar, and Malawi cancelled orders of implants; Tanzania pushed orders of combined oral contraceptives to FY18; and planned orders of progestin-only pills were cancelled for Nigeria and pushed to later quarters for Senegal and Mali. As copper IUDs and progestin-only pills are low volume commodities, small changes in planned shipments will appear exaggerated in APE and forecast bias, which are best suited to high-volume shipments.

Exhibit II.2 Forecast Bias, APE, and MAPE for RH Commodities

Commodity	Forecast Bias (%)	APE (%)	MAPE (%)
Injectable	49	49	0
Implantable	-63	62	16
Combined Oral	-86	86	80
Copper IUD	-293	293	446
Progestin-Only Pill	-416	416	47

Absolute Percent Consumption Forecast Error (Indicator B12)

This indicator compares countries' total commodity consumption forecasts across all donors and funding sources with the quantity of commodities they actually used (regardless of whether any of those commodities were procured by GHSC-PSM). Actual use is either drawn from patient consumption data at the SDP level, or issues distributed from warehouses, depending on data availability. As with APE, this metric illustrates a country's ability to project its consumption and implement plans for future orders and procurement strategies. Outcomes on this indicator vary by product, reflecting factors such as program targets (e.g., UNAIDS 90-90-90 targets), changes to treatment policies affecting drug regimens and dosing, in-country forecasting capacity and data quality, commodity availability, disease seasonality, and climate factors, among many others. Country forecasting is also sometimes target based, and actual capacity cannot meet overly ambitious goals. GHSC-PSM activities support countries to strengthen forecasting and supply planning and improve commodity availability and appropriate usage. In addition, GHSC-PSM is working in some countries to improve LMIS data quality, which contributes to forecast accuracy.

HIV/AIDS Commodities

Exhibit II.3 shows the difference between countries' predicted and actual consumption of HIV/AIDS commodities. As stated above, low-volume shipments (e.g., EID consumables) are less suited to this type of reporting and thus forecasts are skewed. Nigeria noted that underconsumption of RTKs was driven by a deliberate strategy to target kit allocation to health facilities that are located in PEPFAR's priority areas. This resulted in lower than anticipated consumption at other facilities. Condoms can be more challenging to interpret due to their multiple different distribution methods (e.g., free versus purchased, campaign-based distribution).

Exhibit II.3 APE for Consumption of HIV/AIDS Commodities

Product	Forecast Bias (%)	APE (%)	MAPE (%)
Most used first-line ARV	-16	16	13
Most used second-line ARV	-10	10	8
Most used first-line pediatric ARV	19	19	2

First rapid test kit (RTK)	-171	171	62
Second RTK	-35	35	17
Tie-breaker RTK	-90	90	46
Male condoms	-50	50	54
Female condoms	-109	109	105
Ready-to-use therapeutic foods	76	76	76
Early infant diagnosis (EID) reagent	24	24	12
EID consumable	-1742	1742	176
Viral load reagent	-11	11	3
Viral load consumable	-30	30	3
Denominators listed in Annex D.			

Malaria Commodities

Exhibit II.4 shows the difference between countries' predicted and actual consumption of malaria commodities. In general, fewer countries use AS/AQs than AL as their first-line antimalarial. Seasonal and climate factors (e.g., droughts or heavier rain) also pose challenges that make accurate malaria forecasting more difficult. The project has also identified rational use of malaria commodities as a problem in some areas,[9] and is investigating this further to understand this situation better.

Exhibit II.4 APE for Consumption of Malaria Commodities

Product	Forecast Bias (%)	APE (%)	MAPE (%)
First-line ACT (AL 6x1)	-80	80	24
First-line ACT (AL 6x2)	15	15	6
First-line ACT (AL 6x3)	28	28	22
First-line ACT (AL 6x4)	12	12	6
First-line ACT (AS/AQ 25/67.5mg)	-40	40	22

[9] Rational use of medicines requires that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period, and at the lowest cost to them and their community.

First-line ACT (AS/AQ 50/135mg)	-91	91	83
First-line ACT (AS/AQ 100/270mgx3)	-60	60	104
First-line ACT (AS/AQ 100/270mgx6)	-66	66	94
Rapid diagnostic tests (RDTs)	-37	37	20
Sulphadoxine-pyrimethamine	-25	25	48
LLINs	7	7	28
Denominators listed in Annex D.			

RH COMMODITIES

Exhibit II.5 shows the difference between countries' predicted and actual consumption of RH commodities. Calendar-based awareness methods (such as cycle beads) are an infrequently ordered and low-volume product. Rwanda noted that consumption of this product has fluctuated over time due to lack of interventions to increase its use. The situation is similar for emergency oral contraceptives and female condoms, where consumption of these products tends to be low. Because these products are lower volume, forecast accuracy calculations are more sensitive to changes in consumption, leading to misleading distortions.

Exhibit II.5 APE for Consumption of RH Commodities

Product	Forecast Bias (%)	APE (%)	MAPE (%)
Medroxyprogesterone Acetate 150 mg Vial, Intramuscular	-21	21	19
Norethisterone enanthate	-17	17	31
Etonogestrel 68 mg/rod, 1 rod Implant	-97	97	18
Levonorgestrel 75mg/rod, 2 rod Implant	-60	60	78
Levonorgestrel/Ethinyl Estradiol 150/30 mcg + Fe 75 mg, 28 Tablets/Cycle	-4	4	90
Levonorgestrel/Ethinyl Estradiol 150/30 mcg 28 Tablets/Cycle	-11	11	24
Copper-bearing intrauterine devices	-65	65	119
Levonorgestrel 0.75 mg, 2 tablet	-77	77	112

Levonorgestrel 30 mcg 35 tablets/cycle	-83	83	84
Male condoms	-53	53	45
Female condoms	-107	107	140
Calendar-based awareness methods	-339	339	148
Denominators listed in Annex D.			

MNCH Commodities

Consumption data for MNCH commodities is still plagued by many data quality challenges, as most countries have either not yet incorporated these products into their LMIS or are just beginning to. Therefore, the data in Exhibit II.6 may only reflect a portion of actual consumption, leading to the current situation of a negative forecast bias (meaning a higher quantity was forecast than reported as consumed). Further, MNCH commodities are often delivered in parallel private systems, which would not necessarily be captured in national data. Rwanda noted that many MNCH products had long periods of stockouts in the past, which has made it difficult to develop forecasting assumptions for these products.

Exhibit II.6 APE for Consumption of MNCH Commodities

Product	Forecast Bias (%)	APE (%)	MAPE (%)
Oxytocin (10 IU injectable)	-9	9	62
MgSO4 (50% injectable)	73	73	31
Injectable gentamicin	-117	117	131
ORS+zinc (together)	-494	494	826
Chlorhexidine gel	-249	249	350
Amoxicillin (125mg or 250mg dispersible tablets)	-84	84	67
Zinc (alone)	-617	617	197
ORS (alone)	-118	118	263
Denominators listed in Annex D.			

Percentage of Countries Conducting Quarterly Supply Plan Updates (Indicator B6)

Routine updating of supply plans enables countries to accurately predict their supply needs and adapt to evolving priorities throughout the year. USAID requests that all GHSC-PSM partner countries update their supply plans quarterly, giving the project visibility into the health and functionality of a country's supply chain. This indicator provides information on the occurrence and consistency of supply plan updates done routinely each quarter by countries.

There are many reasons why countries may not update supply plans per the schedule requested. For example, in some countries (e.g., Nigeria and Zimbabwe), their policy is to update supply plans semiannually. Others (where GHSC-PSM has a lesser presence) may lack the resources or capacity to complete this task every quarter, or choose to prioritize other activities. Some countries may also be reticent to share information until data privacy issues and expectations are established. The level of involvement GHSC-PSM has in a given country also plays a role. For example, countries where GHSC-PSM operates a field office are two to three times more likely to submit supply plans than areas without a field office (which had a submission rate of 20 percent). This could reflect the level of involvement the project has in a country, as countries that have field offices may receive more support developing supply plans. It could also be linked to a physical in-country presence fostering greater goodwill and cooperation. To improve support to countries without a field-office presence, in Q3 the project opened positions for a headquarters team dedicated to working with these countries. This team will develop a non-field office strategy for USAID in Q4 and will work to build stronger relations with and increase the engagement of target countries without a GHSC-PSM field presence.

Rates of supply plan completion by supply chain commodity type are:

HIV/AIDS Commodities

In Q3, 13 out of 22 countries (59 percent) where the project operates a field office updated quarterly supply plans; GHSC-PSM's headquarters has received 11 out of 13 updated supply plans.

Malaria Commodities

In Q3, 10 out of 19 countries (53 percent) where the project operates a field office updated quarterly supply plans; GHSC-PSM's headquarters has received 9 out of the 10 updated supply plans.

RH Commodities

In Q3, 12 out of 17 countries (71 percent) where the project operates a field office updated quarterly supply plans; GHSC-PSM's headquarters has received 8 out of the 12 updated supply plans.

MNCH Commodities

In Q3, four of the 11 countries (36 percent) where the project operates a field office had updated quarterly supply plans (up from 33 percent in Q2); GHSC-PSM's headquarters has received two out of the four updated supply plans.

Direct Partner Support (DPS) Countries (non-field office)

DPS countries are countries that order commodities where the USAID mission has not bought into the GHSC-PSM single award, or countries that have bought into the single award but have limited commodity funding, field presence and staff. The denominator for DPS countries for this indicator does not include countries where GHSC-PSM has facilitated a one-off procurement or where procurement is not sufficient to warrant a supply plan. In Q3, 2 out of 10 DPS countries (20 percent) submitted supply plans to GHSC-PSM's headquarters.

Country LMIS Data

Countries routinely collect information on various aspects of their supply chains to inform decision-making, monitor resources, and support better population health. Countries collect supply chain data via their LMIS. These systems also help inform global systems and processes, such as the PPMR for RH and malaria commodities and the Pipeline forecasting tool.

GHSC-PSM reviews country-level LMIS data to better understand the wider context in areas in which it works. This data provides a wealth of information that can be used to inform project activities and support targeted system strengthening efforts. For example, if country data frequently shows low stocks of ARVs in health facilities, but overstocking of ARVs in central warehouses, activities to support more effective distribution systems could help improve local access to ARVs.

While this data can offer important insights, it must be interpreted carefully in close consideration of local context. For example, if data shows high levels of stockouts for implantable contraceptives in health facilities, this may indicate a true need, but it could also be because those facilities chose not to carry that product because local women prefer other contraceptive methods. Likewise, rural primary care facilities may not maintain stocks for more specialized supplies or equipment, and instead refer patients to other facilities for more specialized services. It is important for GHSC-PSM to interpret stockout data carefully with consideration for these contextual factors so that it can deliver the supplies that people need to where they need them most.

In addition, the quality of national supply chain data that GHSC-PSM has access to varies considerably by country. For example, in Angola, data reflects only a small proportion of total health facilities (nine for HIV commodities and five for malaria commodities), located in a single province where the project is providing direct support. However, in Ethiopia, data comes from more than 1,500 facilities spanning primary, secondary, and tertiary levels of care. Reporting rates vary significantly by country size, level of commitment to data collection, resources available, and type of reporting system in place (electronic versus manual). To help countries achieve more reliable data collection and reporting for effective decision-making, GHSC-PSM offers a broad spectrum of support covering LMIS development, training, piloting, troubleshooting, and scale up. For example, the project helped Burkina Faso to develop training curricula on LMIS standard operating procedures, supported Madagascar to simplify its new eLMIS to make it easier for users to report data, enabled Malawi to conduct user-acceptance testing for its new eLMIS, and led a data validation exercise in Zimbabwe that highlighted the need to develop solutions to improve reporting accuracy. Actions like these are helping build more reliable, comprehensive data systems to enable sound, evidence-based decision-making over the long term.

It is also important to note that some countries experience systemic challenges with timely reporting. For example, Nepal and Zimbabwe were considered "out of cycle" in Q3 for reporting on stock status and LMIS reporting rate.[10] In Zimbabwe's case, this is because the reporting cycle is not aligned with GHSC-PSM's reporting timeline, and they must report on some indicators with a three-month time lag. In Nepal, reports produced at health facilities can take up to six months to reach the central level.

In addition, countries listed below each receive differing levels of project support dependent on individual mission buy-ins. Some countries, like Lesotho, Namibia, and Pakistan receive technical assistance from the project, but GHSC-PSM does not procure commodities for these countries. Thus, the project cannot easily address stockouts in these countries that are linked to delays from other suppliers, although it can support these countries to improve forecasting, in-country transportation networks, and other areas of their supply chain.

[10] Data from indicators reporting from a different timeframe are not included in the overall numbers for Q3 but are presented in the tables.

The following section documents secondary data observations GHSC-PSM compiled from countries' LMIS reports. While this data is not always direct reflection of GHSC-PSM's performance, it is closely monitored and consistently used to identify needs and better target project activities to maximize GHSC-PSM's impact.

SDP Stockout Rates (Indicator B1)

SDP stockout rate is the final measure of whether health commodities are available to clients when they visit a health facility. Eliminating stockouts is the ultimate goal of all supply chain actors. As a result, the impacts of countless donors, vendors, 3PL providers, ministry officials, supply chain professionals, and wider contextual factors will appear in this indicator. Outcomes that GHSC-PSM can observe vary across countries, products, and levels of project support.

SDPs are broadly categorized as a physical location where patients receive care or commodities directly. SDPs referenced in the data below vary from rural health posts to large, specialized hospitals in major cities. Each country reports data on a different mix of SDPs, which affects how data is interpreted. For example, a primary care center does not

As it isn't feasible or cost-effective to track data for thousands of different health commodities, GHSC-PSM focuses on a sample of common, widely used products (known as tracer products) that can represent overall stock status. Looking at this data can help the project identify bottlenecks, enabling it to focus its efforts on helping countries to overcome these specific challenges. For some commodities (like ARVs and ACTs), countries are able to select their preferred products from a list, so these generally reflect the most widely used products within a given country. However, for RH commodities, countries are required to report on all commodities available, regardless of local consumption patterns and cultural preferences. As many of these products may not have enough demand to warrant facilities stocking them, as patients consistently choose other options, stockouts are more likely to be observed.

Data quantity, source, and quality also varies considerably across countries. For example, Ghana does not yet have a well-functioning LMIS, so it relies on data from an early warning system that includes a limited sample of SDPs. LMIS in countries like Nigeria and Ethiopia have broad coverage and are reporting on thousands of SDPs. In Mozambique, data varies by health area; the country has a strong system for reporting on ARVs, providing data for more than 1,000 treatment sites, but the systems for malaria, family planning, and MNCH are weaker and not considered accurate enough to report. Almost all countries only have a few labs that do viral load testing, so the number of sites reporting on these products is much smaller than the number of sites reporting on products like ARVs, ACTs, and condoms. Further, this data is not able to distinguish between accidental and intended stockouts. For example, policy or pricing changes may cause facilities to change the default treatment regimen offered in favor of another. Further, due to demographic or environmental factors, facilities may have to adapt the products they offer to meet population needs (such as offering longer-acting contraceptives in rural areas where women may not have easy access health facilities). Many factors must be considered when interpreting the data below. Deeper analysis on stockout rates observed for different commodities is provided where contextual information was available to report.

HIV/AIDS Commodities

In Q3, average stockout rates across SDPs were 8 percent for HIV/AIDS commodities (Exhibit II.7). Given GHSC-PSM's strong presence working across Haiti's supply chain, this country continued to perform well with project support with only 1 percent stockouts on average for Q3. Ethiopia, Lesotho, Mozambique, Namibia, Nigeria, Rwanda, and Zambia all had average stockout rates under 10 percent. While Ethiopia's RTK stockout rate could still improve, it declined significantly from Q2 due to a coordinated effort to avert service interruption at SDPs. Sites reporting on RTKs in Ethiopia extend to all sites nationally and beyond PEPFAR supported sites. Supervision activities show that PEPFAR supported sites have a significantly lower stockout rate (0-1% for 1st and 2nd algorithm ARVs).

On May 8, 2017, Angola's National Institute for the Fight Against AIDS updated the National Antiretroviral Treatment Standards. GHSC-PSM will provide support to SDPs to support

In Angola, despite the recorded 44 percent stockout rate (four of nine facilities) for second line ARVs, patients are still receiving treatment; stockout rates appear artificially high due to planned drug regimen changes.

In Lesotho, where GHSC-PSM does not procure HIV/AIDS commodities beyond condoms, the two sites that perform viral load testing experienced stockout of reagents due to a lack of national funds to procure this product. Almost all countries performed well across first line adult ARVs.

Exhibit II.7 Stockout Rates (%) for HIV/AIDS Commodities in SDPs in GHSC-PSM Supported Countries

Tracer Product Stockouts (%)	Angola	Cameroon	Ethiopia	Ghana	Haiti	Lesotho	Mozambique	Namibia	Nigeria	Rwanda	Uganda	Zambia
Total	30	33	7	24	1	6	2	3	8	7	14	6
First line adult ARVs	0	0	2	20	0	0	1	0	6	7	4	7
Second line adult ARVs	44	24	4	29	2	2	2	2	6	2	8	5
First line pediatric ARVs	67	12	2	N/A	1	1	3	0	7	4	5	15
First RTKs	11	0	16	13	3	4	N/A	8	8	8	10	9
Second RTKs	33	31	26	36	1	7	N/A	0	8	18	30	6

Tie-breaker RTKs	N/A	N/A	33	N/A	N/A	9	N/A	8	12	N/A	29	N/A
Male condoms	11	86	10	28	1	4	N/A	0	6	20	N/A	5
Female condoms	56	86	N/A	N/A	N/A	13	N/A	0	8	26	N/A	4
EID consumables	N/A	N/A	11	N/A	N/A	N/A	0	N/A	4	0	N/A	N/A
EID reagents	N/A	N/A	11	N/A	N/A	0	20	N/A	29	0	N/A	0
Viral load consumables	N/A	N/A	32	N/A	N/A	N/A	0	N/A	4	0	N/A	N/A
Viral load reagents	N/A	N/A	11	N/A	N/A	100	0	N/A	13	11	N/A	18
RUTF	N/A	N/A	8	N/A	N/A	15	N/A	N/A	N/A	N/A	N/A	N/A

Notes on non-GHSC-PSM supported areas:

In Cameroon, stockout rates averaged 32 percent (7 and 64 percent for first and second line adult ARVs respectively, and 45 percent for pediatric ARVs).

In Guyana, stockout rates averaged 14 percent (5 and 6 percent for first and second line adult ARVs respectively, and 38 percent for pediatric ARVs).

Notes on out-of-cycle GHSC-PSM supported countries:

In Zimbabwe, stockout rates were 4 percent on average (1 percent first line adult ARVs, 5 percent second line adult ARVs, 9 percent first line pediatric ARVs, 2 percent first RTKs, 2 percent second RTKs, 10 percent tiebreaker RTKs, 2 percent male condoms, and 3 percent female condoms).

Denominators listed in Annex D.

A recent national change from monthly to bimonthly distribution reporting led to data quality issues as well as over- and understocking at local facilities. Partners noted that the amount of RTKs required for the test-and-treat campaign were not available at all facilities. GHSC-PSM was called in to support MSL in reconciling the data, processing the orders, and delivering RTKs to 380 health facilities. On a compressed timeline, GHSC-PSM called each facility to obtain their most current stock level information and update the LMIS.

GHSC-PSM and MSL teams then jointly coordinated the orders, picking, packing, and checking deliveries. Instead of using MSL's logistics network, an exception to use GHSC-PSM's 3PL network was approved

with all expedited orders delivered to local health facilities. Within three weeks, all 380 facilities were adequately stocked in preparation for the national campaign.

This response effort illustrates GHSC-PSM's ability to adapt and pivot to urgent needs outside routine contractual requirements. It also illustrates the need for more stringent data reviews to adequately factor in supplemental stock needed for widespread campaigns. To prevent near-stockouts in the future, GHSC-PSM is working with the MSL to improve the LMIS and the bimonthly distribution model; harmonize data for more reliable forecasting and supply planning; and provide training and resources for enhanced last mile delivery.

SNAPSHOT: GHSC-PSM Provides Critical Supplies for Zambia's Test and Treat Campaign

In an expedited three-week timeframe, Task Order 1 supported Zambia's Medical Stores Limited (MSL) to specially order, process, and distribute an estimated 4,913 RTKs to ensure that 380 facilities nationwide had appropriate stock levels in advance of a national test and treat campaign scheduled for early July.

Malaria Commodities

In Q3, stockout rates across SDPs averaged 21 percent for malaria commodities (Exhibit II.8). Burkina Faso, Ethiopia, Madagascar, Nigeria, and Uganda had the lowest average stockout rates at 15 percent or less. In Ethiopia, GHSC-PSM is providing technical support at the central, regional, and, to some extent, facility level to improve inventory management practices and integrated distribution of commodities. It also conducts quarterly end-use verification surveys at a sample of SDPs and regional warehouses, refilling stock at facilities where needed, which is helping to ensure uninterrupted supplies of malaria commodities.

In Angola, stockouts across malaria commodities appear high in the five SDPs where the project is reporting. Although some presentations of malaria-first line ACT (AL 6x1 and AL 6x2) were not available at the five national hospitals that reported, none of them reported an inability to treat as all hospitals had AL 6x4. While RDTs also appear stocked out at the five hospitals that reported, these supplies are, in fact, not routinely used by the hospitals in Angola because they are equipped with labs for microscopic malaria diagnosis. To promote more accurate measures of stockouts in Angola, GHSC-PSM supported a national quantification exercise in which stakeholders agreed to update methods to more accurately measure stocks. Further, the project trained 130 people on stock inventory management. It also shared Quantimed forecasts, Pipeline supply plans, and a gap analysis with all partners and the Ministry of Health to help ensure adequate stock levels for malaria commodities moving forward.

Zambia also faced stock challenges. To support the country to improve facility reporting and ensure accurate resupply of commodities, the project provided support to national counterparts to facilitate standardization and harmonization of the product catalog — helping to streamline pack sizes, order units, and descriptions between the warehouse management system, eLMIS, and the MSL catalog to improve reporting. GHSC-PSM also trained 125 SDP staff across five provinces in commodity management and helped overcome transportation challenges in reaching island districts around Lake Bangweulu through engaging smaller boats to deliver supplies. Moving forward, the project is planning to assist MSL to adhere to their distribution schedule and will support them in expanding the scope of the

current 3PL contract. However, despite these achievements, stockouts will continue to be seen for FY17 due to a lack of funding commitment from the government, which traditionally procures most essential medicines. GHSC-PSM will continue to work with counterparts to mitigate this situation and distribute available stock among facilities as needed.

In Ghana, a collaboration between the national health agency and the project is improving distribution of commodities to the last mile. The project is supporting last mile distribution in two regions and has initiated steps to kick start the exercise in two additional regions with the Global Fund. In Malawi, inadequate human resources remain one of the key challenges faced by the Ministry of Health to adequately and effectively manage the health commodity supply chain. To help the ministry address these challenges, GHSC-PSM facilitated a refresher training for 1,203 health facility drug store management staff (including 378 women) in logistics and drug store management. The training has strengthened staff capacity and is expected to improve stock management and reporting to the LMIS.

Exhibit II.8 Stockout Rates (%) for Malaria Commodities in SDPs in GHSC-PSM Supported Countries

	Angola	Burkina Faso	Ethiopia	Ghana	Madagascar	Malawi	Nigeria	Rwanda	Uganda	Zambia
Total	74	13	7	34	37	10	22	12	24	15
First-line ACTs (AL 6X1)	80	16	6	N/A	N/A	6	11	14	N/A	23
First-line ACTs (AL 6X2)	40	25	7	N/A	N/A	10	39	30	N/A	16
First-line ACTs (AL 6X3)	20	N/A	8	N/A	N/A	17	31	11	N/A	14
First-line ACTs (AL 6X4)	0	N/A	8	19	N/A	9	57	6	N/A	16
First-line ACTs (AL inability to treat)[11]	0	12	3	N/A	N/A	N/A	9	0	N/A	2
First-line ACTs (AS/AQ 100/270mgx3)	N/A	12	N/A	N/A	29	N/A	17	N/A	N/A	N/A

[11] "Inability to treat" is the percentage of SDPs that were stocked out of all four presentations of artemether-lumefantrine, indicating that they were unable to treat malaria patients with this product.

First-line ACTs (AS/AQ 100/270mgx6)	N/A	9	N/A	N/A	24	N/A	19	N/A	N/A	N/A
First-line ACTs (AS/AQ 25/67.5mg)	N/A	N/A	N/A	66	38	N/A	12	N/A	N/A	N/A
First-line ACTs (AS/AQ 50/135mg)	N/A	N/A	N/A	50	25	N/A	15	N/A	N/A	N/A
RDTs	100	4	9	24	16	2	17	3	14	12
Sulphadoxine-pyrimethamine	100	9	N/A	17	70	20	14	N/A	36	11
LLINs	N/A	13	N/A	N/A	79	N/A	13	N/A	N/A	N/A
Notes on out-of-cycle countries: In Zimbabwe, stockout rates averaged at 15 percent (37 percent AL 6X1, 10 percent AL 6X2, 12 percent AL 6X3, 9 percent AL 6X4, 2 percent AL inability to treat, 6 percent RDTs, and 12 percent sulphadoxine-pyrimethamine.) Denominators listed in Annex D.										

RH COMMODITIES

In Q3, stockout rates across SDPs averaged 31 percent for RH commodities (Exhibit II.9). Ethiopia, Haiti, Malawi, Nigeria, and Zambia all had the lowest average stockout rates at 10 percent or less. Given GHSC-PSM's strong presence working across Haiti's supply chain, this country continued to perform well with project support with virtually zero stockouts in Q3. In Pakistan, some stockouts observed (e.g., for progestin-only pills and emergency oral contraceptives) were due to a lack of demand for these products and preference for products such as combined oral contraceptives. Central-level stock positions are projected to improve, with planned orders for progestin-only pills and emergency oral contraceptives from three provinces in 2017 and 2018. The project is working closely with these provinces to improve requisitioning for these products, so that SDPs may be resupplied once new stocks arrive. The project is also working with the government to support registration and local production of progestin-only pills.

Uganda has noted limited demand for some products, such as injectable contraceptives, which has led to some SDPs to not order more of these products once they are stocked out. Madagascar reports that other partners are moving up orders to address stockouts. The Ministry of Health and U.N. Population Fund are also training service provides in the use of IUDs. The lack of trained providers has meant that many SDPs are not able to offer this method and have not received stock.

In Haiti, GHSC-PSM receives reports directly from SDPs, which they follow up on with phone calls to verify data and stockouts. This close level of customer service allows the team to respond quickly when stocks begin to dwindle; however, this type and level of support is not possible in all countries.

Exhibit II.9 Stockout Rates (%) for Task Order 3 (RH) Commodities in SDPs in GHSC-PSM Supported Countries

Tracer Product Stockouts (%)*	Ethiopia	Ghana	Haiti	Madagascar	Malawi	Nigeria	Pakistan	Rwanda	Uganda	Zambia
Total	10	25	0	47	6	8	42	10	40	3
Copper-Bearing Intrauterine Devices	17	N/A	0	86	2	3	30	9	N/A	0
Calendar-Based Awareness Methods	N/A	N/A	0	3	N/A	N/A	N/A	60	N/A	N/A
Male Condoms	10	28	1	58	15	6	17	20	N/A	5
Female Condoms	N/A	N/A	N/A	82	8	8	N/A	26	N/A	4
Injectable Contraceptives	5	21	0	12	5	1	21	6	40	0
Medroxyprogesterone Acetate 150 Mg Vial, SR	5	21	0	12	5	3	21	6	40	3
Norethisterone Enanthate	N/A	N/A	N/A	N/A	N/A	10	N/A	N/A	N/A	3
Implantable Contraceptives	3	24	1	56	N/A [12]	11	N/A	4	N/A	0
Etonogestrel 68 Mg/Rod, 1 Rod Implant	11	N/A	N/A	56	5	23	N/A	6	N/A	1
Levonorgestrel 75mg/ Rod, 2 Rod Implant	9	24	1	N/A	4	11	N/A	4	N/A	1
Combined Oral Contraceptives	N/A	30	0	19	4	6	19	1	N/A	12
Levonorgestrel/Ethinyl Estradiol 150/30 Mcg + Fe 75 Mg, 28 Tablets/Cycle	8	30	0	19	N/A	N/A	19	1	N/A	12

[12] Malawi compiles data from national level stock reports, which disaggregate by product but not by SDP. Therefore it is not possible to identify which SDPs were stockout out of both products at the same time and the data cannot be aggregated to the method level.

Levonorgestrel/Ethinyl Estradiol 150/30 Mcg 28 Tablets/Cycle	N/A	N/A	N/A	N/A	4	6	N/A	N/A	N/A	N/A
Emergency Oral Contraceptives	8	N/A	N/A	N/A	5	N/A	92	N/A	N/A	N/A
Levonorgestrel 0.75 Mg, 2 Tablet	8	N/A	N/A	N/A	5	N/A	92	N/A	N/A	N/A
Progestin Only Pills (Levonorgestrel 30 Mcg 35 Tablets/Cycle)	13	N/A	N/A	58	6	N/A	93	3	N/A	2

*The RH "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 percent of facilities stocked out of a particular product offered at the facility. A facility could be stocked out of one product and not be stocked out at the method level if the facility has another product within that method available. Only product-level stockout rates are used to calculate the overall stockout rate for Task Order 3 and for each country.

Notes on non-GHSC-PSM supported areas:

In Nepal**, stockout rates averaged 75 percent (81 percent for copper-bearing IUD, 7 percent for male condoms, 5 percent for medroxyprogesterone acetate 150 mg Vial, SR, 75 percent for levonorgestrel 75mg/ rod, 2-rod implant, and 8 percent for levonorgestrel/ethinyl estradiol 150/30 mcg + Fe 75 mg, 28 tablets/cycle)

**Data on Nepal is also out-of-cycle

***Denominators listed in Annex D.

MNCH Commodities

Stockout rates for MNCH commodities are not accurately available and are not currently collected by GHSC-PSM. Many national LMIS do not include MNCH commodities and therefore there are no regular sources of data on availability of these. GHSC-PSM is working to address these issues in most countries that have received funding to strengthen management of MNCH commodities.

Percentage of Stock Status Observations in Storage Sites Where Commodities Are Stocked According to Plan, by Level in Supply System (Indicator B2)

This measure indicates whether countries are able to keep inventory levels within the required minimum and maximum levels, avoiding stockouts (which may impact health facilities) and overstocks (which may result in wastage due to expiries). It can reflect the immediate inventory management practices at specific warehouse or storage levels, as well as upstream factors (such as order delays from donors and suppliers) and downstream factors (such as poor consumption data flowing from health facilities). As with the stockout rate at SDPs, outcomes for this indicator vary by country, task order, product, and supply chain level. GHSC-PSM's strategies to improve warehouse performance and level of influence also vary by country and task order.

HIV/AIDS Commodities

Central storage sites generally had higher rates of optimal stocking (31 percent on average) compared to subnational level one (28 percent), as shown in Exhibit II.10. Highest rates for optimal stocks were observed for first line adult ARVs; these were 63 percent at the central level and 40 percent at subnational level one. EID consumables were only reported in Ethiopia and Uganda and only included five observations. EID reagents were reported in Ethiopia, Lesotho, Nigeria, Uganda and Zambia and only include nine observations. These numbers appear low because often EID products are sent directly to the SDPs that manage them or to labs, and are therefore not stored at central warehouses; for example, in Mozambique, EID products are sent directly to labs. Many GHSC-PSM country programs have started providing technical assistance for warehousing and inventory management to help countries maintain optimal stocks for critical health commodities in the long term. For example, in Burundi, the project is training warehouse managers and conducting periodic supervisory visits to improve the situation at storage sites. In the long term, these actions will help strengthen countries' ability to maintain optimal supplies of lifesaving health commodities.

Exhibit II.10 Percent of stock status observations in Storage Sites Where HIV/AIDS Commodities Are Stocked to Plan

	All	First Line Adult ARVs	Second Line Adult ARVs	Pediatric ARVs	First RTKs	Second RTKs	Tiebreaker RTKs	Male Condoms	Female Condoms	RUTF	EID Consumables	EID Reagents	Viral Load Consumables	Viral Load Reagents
Central Level	31	63	17	43	44	30	0	25	18	0	0	11	40	11
Subnational Level 1	28	40	34	37	35	29	37	12	6	24	N/A	N/A	N/A	N/A
Denominators listed in Annex D.														

MALARIA COMMODITIES

In Q3, 13 percent of storage sites stocked commodities according to plan; 31 percent were overstocked, 20 percent understocked, and 36 percent stocked out). Central storage sites generally had higher rates of optimal stocking (22 percent on average) compared to subnational level one (18 percent) and subnational level two (12 percent).[13] Optimal stocking of LLINs at subnational level one was 63 percent, despite low figures at other levels. LLINs are often sent directly to facilities or lower-level warehouses that are closer to communities, and not stored at central level warehouses. Further, central level figures represent just six countries and 10 observations. To help countries better manage stock across levels, in Q3 GHSC-PSM led efforts to build capacity and strengthen knowledge across countries, and will continue to offer this support to countries.

[13] Subnational level-two data is from one country only (Madagascar).

In Rwanda, the project conducted a national supply chain assessment to evaluate the status of all supply chain components and identify gaps and areas for improvements. In Nigeria, GHSC-PSM reviewed warehouse reports and generated long-haul orders to support May 2017 last-mile delivery to health facilities in PMI-supported states. GHSC-PSM also developed a transition plan to move the central hubs for malaria commodities from the state central medical stores to the axial warehouses where HIV and other health commodities are stored. Long-haul deliveries of malaria commodities from the axial warehouses will occur in phases starting in July 2017, when it is estimated that malaria stocks in the state central medical stores will be exhausted.

Exhibit II.11 Percent of stock status observations in Storage Sites Where Malaria Commodities Are Stocked to Plan

	All	First-line ACTs (AL 6X1)	First-line ACTs (AL 6X2)	First-line ACTs (AL 6X3)	First-line ACTs (AL 6X4)	First-line ACTs (AS/AQ	First-line ACTs (AS/AQ	First-line ACTs (AS/AO 25/67.5mg)	First-line ACTs (AS/AQ 50/135mg)	RDTs	Sulphadoxine-pyrimethamine	LLINs
Central Level	22	22	17	29	29	25	13	22	22	15	26	10
Subnational Level 1	18	17	13	8	20	7	17	17	18	20	18	63
Subnational Level 2	12	N/A	N/A	N/A	N/A	16	16	10	14	19	5	3
Denominators listed in Annex D.												

RH Commodities

Ten percent of stock status observations found that RH commodities were stocked according to plan (Exhibit II.12). Central storage sites generally had higher rates of optimal stocking (21 percent on average) compared to subnational level one (16 percent) and subnational level two (9 percent). GHSC-PSM is working to help countries maintain optimal stocks for critical health commodities in the long term. For example, in Angola, GHSC-PSM, in coordination with the Department of Reproductive Health and other implementing partners, is holding monthly coordination meetings in which collected stock data is shared so that all stakeholders are aware of stock availability. In Pakistan, the project developed a stock sufficiency dashboard to assist in reviewing family planning commodity sufficiency, including at the central and subnational levels, which will help provide more visibility on stock status. Additionally, GHSC-PSM is providing technical assistance to Pakistan on outsourcing the transportation of RH commodities from central levels to district stores, which will help bring the stock of commodities to optimal levels.

Exhibit II.12 Percent of Stock Status Observations in Storage Sites Where RH Commodities Are Stocked to Plan

Commodity	Central	Subnationa l Level 1	Subnationa l Level 2
Total	21	16	9
Injectable Contraceptives	32	16	23
Medroxyprogesterone Acetate 150 Mg Vial, SR	38	22	23
Norethisterone Enanthate	25	4	N/A
Implantable Contraceptives	31	28	10
Etonogestrel 68 Mg/Rod, 1 Rod Implant	0	26	10
Levonorgestrel 75mg/Rod, 2 Rod Implant	48	21	N/A
Combined Oral Contraceptives	16	18	20
Levonorgestrel/Ethinyl Estradiol 150/30 mcg +Fe 75 mg, 28 Tablets/cycle	5	18	20
Levonorgestrel/Ethinyl Estradiol 150/30 mcg 28 Tables/cycle	0	N/A	N/A
Emergency Oral Contraceptives	21	11	1
Levonorgestrel 0.75 Mg., 2 Tablet	0	18	1
Levonorgestrel 1.5 Mg., 1 Tablet	50	4	N/A
Progestin Only Pills	21	16	7
Levonorgestrel 30 Mcg 35 Tablets /Cycle	25	16	7
Copper-bearing Intrauterine Devices	0	14	3
Calendar-based Awareness Methods	0	13	15
Male Condoms	33	13	7
Female Condoms	19	6	1
Denominators listed in Annex D.			

MNCH COMMODITIES

Data on stock according to plan for MNCH commodities is presented in Exhibit II.13.

Exhibit II.13 Percent of Stock Status Observations in Storage Sites Where MNCH Commodities Are Stocked to Plan

	All	Oxytocin (10 IU injectable)	MgSO4 (50% injectable)	Injectable gentamicin	ORS+zinc (together)	Chlorhexidine gel	Amoxicillin (125mg/250mg)	Zinc (alone)	ORS (alone)	PCV vaccine
Central Level	17	25	0	29	N/A	0	0	29	29	N/A
Subnational Level 1	22	33	32	32	0	20	13	13	23	N/A
Subnational Level 2	4	5	3	1	N/A	N/A	N/A	N/A	N/A	6
Denominators listed in Annex D.										

COUNTRY-LEVEL DATA

In Q3, the percent of stock status observations in storage site where commodities were stocked according to plan varied across countries (Exhibit II.14). Haiti, Vietnam, Malawi, and Guyana all had products stocked according to plan more than 40 percent of the time. Of these four countries, Vietnam and Malawi also had 0 percent stockout rates observed at storage facilities, while Haiti had 3 percent, and Guyana had 17 percent of products stocked out at the storage facility level.

Angola, Lesotho, and Madagascar were less likely to have products stocked according to plan in storage site, with rates of 6 percent, 6 percent, and 9 percent respectively. In Angola, GHSC-PSM is part of the HIV quantification working group that will assist the National Institute for the Fight Against AIDS to implement the recently updated Operational Standard Procedure Manual for the Supply Chain Management of HIV Product. It is expected that implementing the guidelines correctly will help improve the current stock status in all supply chain levels. Additionally, there was a nationwide stockout of ASAQ, which is reflected in the low performance for this indicator. In Lesotho, most products were either understocked or overstocked. Only viral load reagents were observed to be stocked out at the storage facility level. The understocking and overstocking reflects the need to adjust the designated maximum and minimum stock level at central medical stores. The current parameters do not take into consideration realistic lead times, buffer stock, storage capacity, and procurement plans. GHSC-PSM is working in collaboration with the Supply Chain Coordinating Unit and National Drug Service Organization on the revision of maximum and minimum stock levels of all health commodities. Lastly, GHSC-PSM Madagascar is working with the ministry and the Logistics Management Technical Unit to provide product management training at the district and community pharmacies (phaGeCom and

PhaGDis) to strengthen the capacities of pharmacy managers to correctly determine needs for keeping appropriately stocked storage facilities.

Exhibit II.14. Percent of Stock Status Observations in Storage Sites Where Commodities Are Stocked to Plan, by country

Country	Over-stocked	Stocked according to plan	Under-stocked	Stocked out
Angola	4	6	49	41
Burkina Faso	38	13	50	0
Burundi	14	32	43	11
Cameroon	23	30	38	8
Ethiopia	48	14	23	16
Ghana	25	21	26	27
Guyana	0	83	0	17
Haiti	45	42	9	3
Lesotho	27	6	58	9
Madagascar	26	9	13	52
Malawi	29	57	14	0
Mozambique	20	34	30	15
Namibia	8	31	42	19
Nigeria	6	22	72	0
Pakistan	22	13	21	43
Rwanda	42	21	38	0
Uganda	18	22	32	28
Vietnam	0	50	50	0
Zambia	25	36	25	14

Notes on out-of-cycle countries: Nepal had 41 percent of products overstocked, 16 percent stocked according to plan, 35 percent understocked and 8 percent stocked out. Zimbabwe had had 14 percent of products overstocked, 29 percent stocked according to plan, 57 percent understocked and 0 percent stocked out.

*Denominators listed in Annex D.

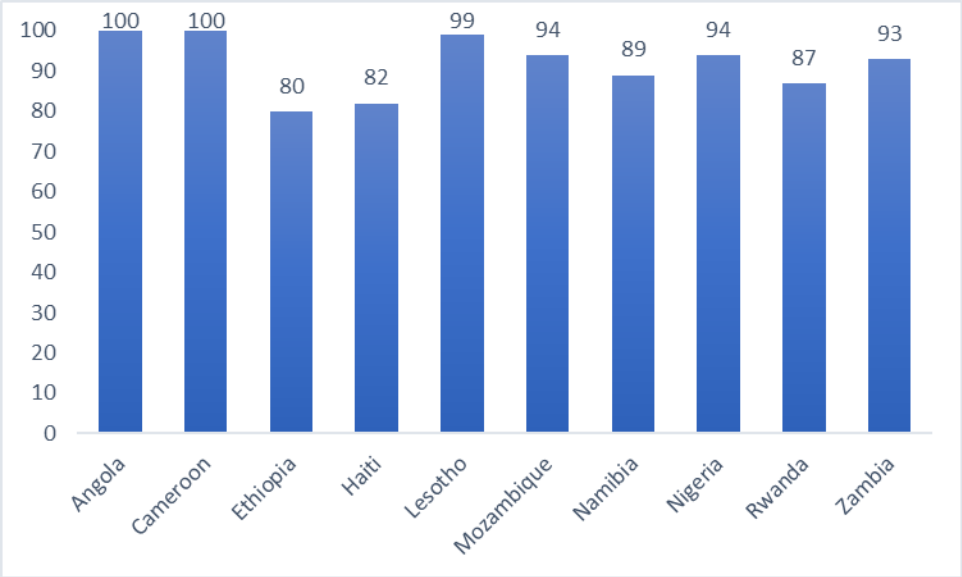
SDP Reporting Rate to LMIS (Indicator B3)

The purpose of this indicator is to determine the level of SDP participation in national LMIS reporting. It is a key metric of LMIS performance, revealing whether health facilities are able to fully utilize the system. Outcomes for this indicator are generally high. As with other in-country indicators, GHSC-PSM's strategies for improving or maintaining high performance are dependent on the project's depth of involvement with LMIS in each country at central management and SDP levels. As requested and appropriate, the project works with countries to strengthen LMIS infrastructure, knowledge, and reporting as highlighted below.

HIV/AIDS Reporting

Overall reporting rates to LMIS remained high (Exhibit II.15), averaging 91 percent. Angola and Cameroon had 100 percent reporting rates; Lesotho, Mozambique, Nigeria, and Zambia all reported rates greater than 90 percent. Lower reporting rates in Ethiopia stemmed from weaker performance in primary care facilities in five areas; the project has followed up with these facilities to help them improve their reporting rate. The project will continue to provide LMIS strengthening support to help maintain high reporting rates across countries, and support countries where improvements are needed. Greater reporting in Haiti is being encouraged through openly sharing lists of low-reporting facilities, as well as through GHSC-PSM regional training to strengthen reporting capacity and supervision.

Exhibit II.15 SDP Reporting Rate to LMIS (%) by Country for HIV/AIDS Commodities[14]



**Denominators listed in Annex D.*

Malaria Reporting

Overall reporting rates to LMIS remained high, averaging 85 percent (Exhibit II.16). Angola had the weakest reporting rate at 50 percent (five of 10 sites reporting), due to recently added project sites lacking the necessary knowledge to report effectively. To strengthen reporting in Angola, the project trained 130 people on LMIS reports and supported the country's NMCP to organize in-service training

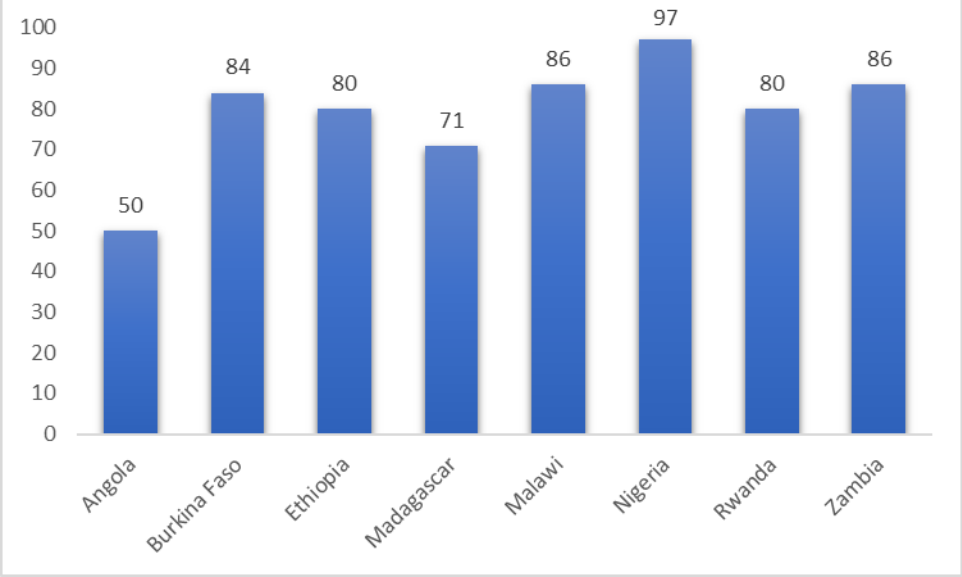
[14] Zimbabwe was out-of-cycle and had a reporting rate of 81 percent; non-GHSC-PSM supported areas Cameroon and Guyana had 100 percent reporting rates to LMIS.

to improve the quality of data reported in malaria monthly reports. The project will follow up with participants to support them to use their training for reporting in Q4.

Training district staff in Madagascar on the streamlined LMIS. Credit: GHSC-PSM

Madagascar made significant improvements in reporting from Q2, rising from 52 percent to 71 percent in Q3. In February 2017, Madagascar officially designated "Channel" as its LMIS software. However, uptake was slow and users found the system complicated to use. To improve reporting, GHSC-PSM worked with the Ministry of Health to simplify the system, reducing unnecessary functions from 17 to 11. In May, GHSC-PSM and the ministry pretested the improved version in four districts, which informed improvements to training curricula and job aids to support greater LMIS reporting. By the end of Q3, 60 percent of districts staff were trained on the updated version of system. Remaining training for districts will be completed in July. The project also conducted OpenLMIS user acceptance training in Malawi, soliciting input from a variety of stakeholders to inform this system's imminent launch.

Exhibit II.16 SDP Reporting Rate to LMIS (%) by Country for Malaria Commodities[15]



**Denominators listed in Annex D.*

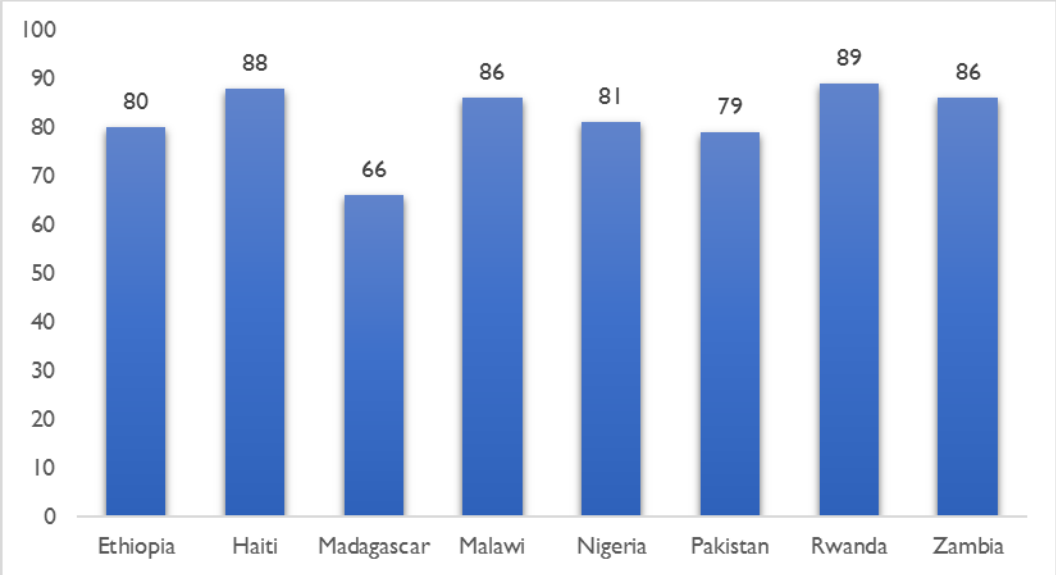
RH Reporting

The overall reporting rate to LMIS for RH commodities was 79 percent (Exhibit II.17). Haiti, Malawi, Rwanda, and Zambia all reported rates greater than 85 percent. As noted under malaria commodities, reporting rates are being augmented through training in Madagascar. In Pakistan, almost 1,000 more sites reported to the LMIS in Q3 than in Q2. However, the overall percentage of sites reporting decreased slightly due to the project absorbing additional sites in Q3, which required more follow up to improve

[15] Zimbabwe was out-of-cycle and had a reporting rate of 83 percent.

motivation and capacity to report. As these sites have only just started receiving project support, and historically had poorer reporting rates than in GHSC-PSM-supported areas, this percentage decrease is to be expected in Q3. The project will continue to provide LMIS strengthening support to help boost and maintain high reporting rates across countries to support countries where improvements are needed.

Exhibit II.17 SDP Reporting Rate to LMIS (%) by Country for RH Commodities[16]



**Denominators listed in Annex D.*

MNCH REPORTING

The average reporting rate to LMIS was 77 percent. Reporting rates for individual countries were: Ethiopia (80 percent), Madagascar (66 percent), Malawi (86 percent), Rwanda (74 percent), and Zambia (86 percent).[17] While the reporting rate was lowest in Madagascar, it does represent a significant increase from January, when only 48 percent of sites were reporting. As noted above, reporting rates are being augmented through training in Madagascar.

Government efforts to monitor MNCH commodities are often less advanced than those for other commodities. As such, it is more challenging to comment on reporting rates for MNCH commodities given the nascent status of MNCH LMIS integration.

SNAPSHOT: Strengthening MNCH Logistics in Ethiopia

In Ethiopia, a national assessment was conducted on the MNCH logistics system to provide stakeholders with a comprehensive overview of the system, including key challenges and availability of essential MNCH commodities. With GHSC-PSM support, data were collected at all levels of the health system, and a draft report has been produced for comments and feedback. Integrating MNCH commodities into the LMIS will provide greater visibility into MNCH commodities throughout the supply chain.

[16] Non-supported GHSC-PSM regions in Nepal had a reporting rate of 89 percent.

[17] Non-supported GHSC-PSM regions in Nepal had a reporting rate of 89 percent.

ANNEX III INDICATOR TABLES

This annex contains the full set of performance indicators for FY 17 Quarter 3.

Section A: Fiscal Year 2017 Key Performance Overview-IDIQ						
Reporting Period (Quarter) start date			07/01/2016	10/01/2016	01/01/2017	04/01/2017
Reporting Period (Quarter) end date			09/30/2016	12/30/2016	03/31/2017	06/30/2017
Summary performance to date			FY 2016 Q4	FY 2017 Q1	FY 2017 Q2	FY 2017 Q3
Global Supply Chain						
A1.	Percentage of line items delivered on time and in full, within the minimum delivery window – %		67%	31%	7%	23%
A3.	Cycle Time (Average) – # (days per shipment)		101	86	174	166
A4.	Inventory Turns (Average number of times inventory cycles through GHSC-PSM-controlled global facilities) – ratio			Annual		
A5.	Total Landed Cost (total cost of all supply chain operations and expenses associated with delivery of one unit of product) – $			Semi-annual		
A6.	Absolute Percent Error, with variants Mean Absolute Percent Error (MAPE) and Forecast Bias – %		See Section C for detailed data on this indicator			
A13.	Percentage of batches of product showing non-conformity (Out of specification percentage) – %		0%	0%	0%	0%
In-Country						
B1.	Stockout Rate at SDPs – %		26%	20%	16%	24%
B2.	Percentage of stock status observations in storage sites where commodities are stocked according to plan, by level in supply system – %		21%	11%	17%	11%
B3.	Service Delivery Point (SDP) reporting rate to the Logistics Management Information System (LMIS) – %		80%	79%	86%	82%
B8.	Percentage of initially GHSC-PSM-supported supply chain functions carried out by national authorities without external technical assistance – %			Annual		
Crosscutting						
C2.	Number of people trained – # (people)	TO specific trainings combined	196	194	416	1110
		Cross-TO trainings		569	1108	2872
		All trainings (TO specific & Cross-TO)	196	763	1524	3982
C3.	Overall customer satisfaction rating for GHSC-PSM services – rating (annual)			Annual		

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

Section B: Fiscal Year 2017 Key Performance Overview by Task Order

Performance To Date

		Task Order 1					Task Order 2					Task Order 3					Task Order 4				
		TO1 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3	TO2 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3	TO3 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3	TO4 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3
Global Supply Chain																					
A1	Percentage of line items delivered on time and in full, within the minimum delivery window – % *(In parentheses: Total number of line items*	N/A	100% (1)	29% (138)	6% (348)	25% (809)	N/A	100% (1)	0% (2)	13% (32)	15% (125)	N/A	0% (1)	54% (13)	22% (9)	5% (20)	N/A				0% (1)
A2	Percentage of QA processes completed within the total estimated QA lead times - %	N/A					N/A				81%	N/A					N/A				
A3	Cycle Time (Average) – # (days per line item delivered)	N/A	78	74	171	154	N/A	78	166	206	234	N/A	148	200	177	220	N/A				310
A4	Inventory Turns (Average number of times inventory cycles through GHSC-PSM controlled global facilities) – ratio	N/A	Annual				N/A	Annual				N/A	Annual				N/A	Annual			
A5	Total Landed Cost (total cost of all supply chain operations and expenses associated with delivery of one unit of product) – $	N/A		Semi-annual			N/A		Semi-annual			N/A		Semi-annual			N/A		Semi-annual		
A6	Absolute Percent Error, with variants Mean Absolute Percent Error (MAPE) and Forecast Bias – %	See Section C for detailed data for this indicator																			
A7	Percentage of line items imported using a temporary registration waiver (Temporary Waiver Percentage)	N/A					N/A					N/A				35%	N/A				
A8	Average percentage of shelf life remaining for warehoused commodities, weighted by the value of each commodity's stock (Product at Risk	N/A		76%	78%	77%	N/A		72%	66%	61%	N/A		70%	67%	65%	N/A				

A2 (QA lead times) is not reported for TO1, 3 or 4. QA processes for these TOs are mangeed by the GHSC-Quality Assurance project.

A7 (Temporary waiver percentage) is not reported for TO1 and TO2 at this time. Reason: The project is still operationalizing sources and indicator calculations for these TOs.

Performance To Date

Indicator			Task Order 1					Task Order 2					Task Order 3					Task Order 4				
			TO1 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3	TO2 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3	TO3 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3	TO4 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3
A9	Percentage of qualified suppliers from which USAID procures product (Supplier Concentration) – % (semi-annual)		N/A		Semi-Annual			N/A		Semi-Annual			N/A		Semi-Annual			N/A		Semi-Annual		
A10	Percentage of product procured using a framework contract (Framework Contract Percentage) – %		N/A	97%	77%	79%	82%	N/A	0%	0%	0%	0.1%	N/A	87%	98%	99%	100%	N/A				
A11	Percentage of catalog products that are ordered frequently (Product Order Frequency) – %		N/A				14%	N/A				16%	N/A				44%	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 – %		N/A					N/A					N/A					N/A				
A13	Percentage of batches of product showing nonconformity (Out of specification percentage) – %		N/A					N/A	0%	0%	0%	0%	N/A					N/A				
A14	Average Vendor Rating Score – rating	Suppliers	N/A			89%	91%	N/A			96%	90%	N/A			87%	85%	N/A				
		Laboratory Q&A	N/A					N/A			73%	76%	N/A					N/A				
		Freight Forwarders	N/A					N/A					N/A					N/A				
A15	Percentage of Quality Assurance investigation reports submitted within 30 days of outcome determination (QA investigation report submission) - %		N/A					N/A				100%	N/A					N/A				
In-country Performance and Sustainability																						
B1	Stockout rate at SDPs – %		N/A	8%	10%	8%	8%	N/A	23%	13%	11%	21%	N/A	31%	29%	25%	31%	N/A		n/a	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 – %		N/A	21%	30%	27%	29%	N/A	18%	8%	22%	13%	N/A	22%	16%	16%	10%	N/A		8%	8%	5%
B3	Service Delivery Point (SDP) reporting rate to the Logistics Management Information System (LMIS) – %		N/A	84%	87%	91%	91%	N/A	75%	80%	84%	85%	N/A	81%	79%	86%	79%	N/A		74%	85%	77%
B4	Average rating of in-country data confidence at the central, subnational, and SDP levels – rating		N/A	Annual				N/A	Annual				N/A	Annual				N/A		Annual		

A12 (Price variance for non-catalogue products) is not reported this time. Reason: The project is still operationalizing sources and indicator calculations.

A13 (Out of specification percentage) is not reported for TO1, 3 or 4. QA processes for these TOs are mangeed by the GHSC-Quality Assurance project.

A14 (Average vendor rating score) is not reported for QA vendors for TO1, 3 or 4. QA processes for these TOs are mangeed by the GHSC-Quality Assurance project.

A15 (QA investigation report submission) is not reported for TO1, 3 or 4. QA processes for these TOs are mangeed by the GHSC-Quality Assurance project.

Performance To Date

	Indicator	Task Order 1					Task Order 2					Task Order 3					Task Order 4					Cross Cutting				
		TO1 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3	TO2 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3	TO3 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3	TO4 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3	Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3
B5	Percentage of countries conducting annual forecasts – %	N/A	Annual				N/A	Annual				N/A	Annual				N/A	Annual				N/A				
B6	Percentage of countries conducting quarterly supply plan updates – %	N/A	100%	91%	87%	59%	N/A	78%	70%	47%	53%	N/A	78%	100%	67%	71%	N/A		33%	33%	36%	N/A				
B7	Percentage of total spent or budgeted on procurement of commodities for public sector services by the government, USG, the Global Fund, or other sources – %	N/A	Annual				N/A	Annual				N/A	Annual				N/A	Annual				N/A				
B8	Percentage of initially GHSC-PSM-supported supply chain functions carried out by national authorities without external technical assistance – %	N/A	Annual				N/A	Annual				N/A	Annual				N/A	Annual				N/A				
B9	Supply Chain Workforce Loss Ratio – ratio	N/A	Annual				N/A	Annual				N/A	Annual				N/A	Annual				N/A				
B10	Percentage of countries that have a functional logistics coordination mechanism in place – %	N/A	Annual				N/A	Annual				N/A	Annual				N/A	Annual				N/A				
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) – %	N/A		Semi-Annual			N/A		Semi-Annual			N/A		Semi-Annual			N/A		Semi-Annual			N/A				
B12	Absolute percent consumption forecast error, with MAPE and forecast bias variants - %	See Section C for detailed data for this indicator																								
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	N/A			1	1	N/A			2	1	N/A				1	N/A					N/A			2	1
C2	Number of People Trained – #	N/A	133	162	299	680	N/A	14	33	17	430	N/A					N/A					N/A		569	1108	2872

Performance To Date

Indicator		Task Order 1					Task Order 2					Task Order 3					Task Order 4				
		TO1 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3	TO2 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3	TO3 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3	TO4 Annual Target	2016 Q4	2017 Q1	2017 Q2	2017 Q3
C3	Overall customer satisfaction rating for GHSC-PSM services – rating	N/A	Annual				N/A	Annual				N/A	Annual				N/A	Annual			
C4	Percentage of required files submitted to BI&A in the reporting period – %	N/A					N/A					N/A					N/A				
C5	Percentage of required files timely submitted to BI&A in the reporting period – %	N/A					N/A					N/A					N/A				
C6	Percentage of sampled 'accurate' submittions reported to BI&A in the reporting period - %	N/A					N/A					N/A					N/A				
C7a	Percentage of product lost due to expiry while under GHSC-PSM control (Product Loss Percentage - Expiry) – %	See Section C for detailed data for this indicator																			
C7b	Percentage of product lost due to theft, damage, or other causes while under GHSC-PSM control (Product Loss Percentage - Theft, Damage, Other)	See Section C for detailed data for this indicator																			
C8	Number of global advocacy engagements in support of improved availability of essential health	N/A		Semi-Annual			N/A		Semi-Annual			N/A		Semi-Annual			N/A		Semi-Annual		
C9	Percent complete and on time submissions to global knowledge management platform - %	N/A					N/A					N/A					N/A				
C10	Percentage of GHSC-PSM-procured molecular instruments that remained functional during the reporting period – %	N/A	40%	75%	79%	89%	N/A					N/A					N/A				

C4,5 & 6 (Complete, Accurate and Timely submissions to BI&A) are not reported at this time. Reason: The project is still operationalizing sources and indicator calculations.

C9 (Submissions to the global knowledge management platform) is not being reported at this time. Reason: Global knowledge management platform not final.

A1. Percentage of line items delivered on time in full, within the minimum delivery window

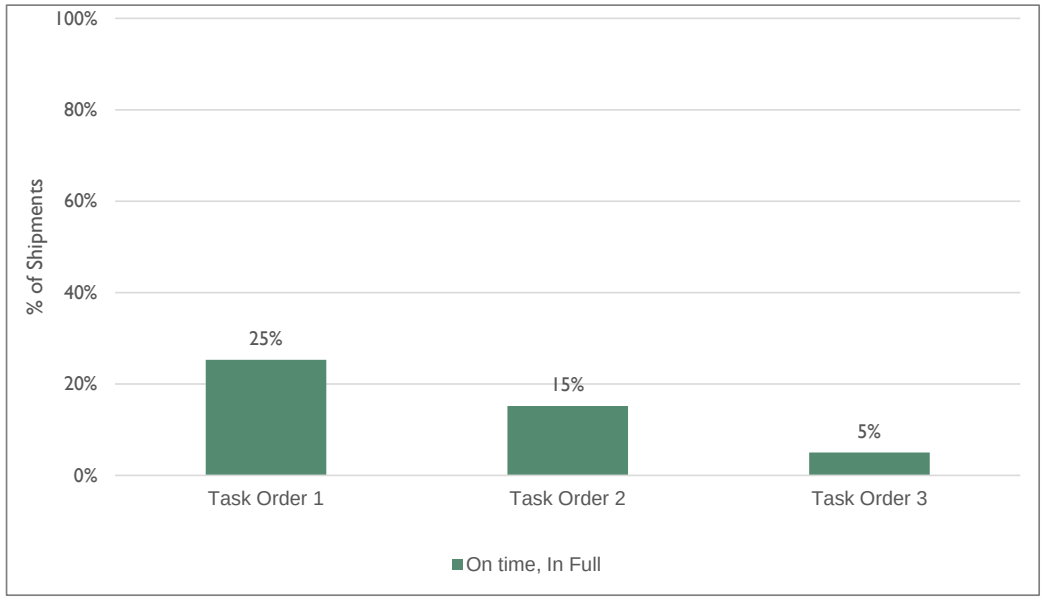
Measure Definition

Numerator: Number of line items delivered to the consignee on time and in full during the quarter

Denominator: Total number of line items delivered to the consignee during the quarter. Includes variants On Time, Not In Full; Not On Time, In Full; Not On Time, Not In Full.

Task Order	Annual Target	Achievement FY 2017 Q3	Achievement Year to Date
TO1	N/A	25%	21%
TO2	N/A	15%	14%
TO3	N/A	5%	24%
TO4	N/A	0%	0%
All TOs	N/A	23%	20%

Indicator Performance



Data Notes

Delivery Date

- 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 Task Order 1.
- Total number of line items delivered: Task order 1: 809. Task Order 2: 125. Task Order 3: 20. Task Order 4: 1

A1b. 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 On time and In full	On time In full (%)	Malaria	Total number of line items delivered	Number of line items On time and In full	On time In full (%)	PRH - Method Level	Total number of line items delivered	Number of line items On time and In full	On time In full (%)
Task Order 1	809	204	25%	Task Order 2	125	19	15%	Task Order 3	20	1	5%
Adult ARVs	113	3	3%	ACTs	37	13	35%	Injectable contraceptives	8	0	0%
Pediatric ARVs	47	8	17%	Rapid diagnostic tests	6	2	33%	Implantable contraceptives	3	0	0%
Laboratory	415	109	26%	Sulphadoxine-pyrimethamine				Combined oral contraceptives	1	0	0%
Condoms	33	6	18%	Severe malaria medicines	3	0	0%	Copper-bearing intraunterine devic	3	1	33%
VMMC	86	49	57%	Other pharmaceutical products	4	1	25%	Emergency oral contraceptives			
Other pharmaceuticals	59	5	8%	LLIN	38	2	5%	Progestin-only pills	2	0	0%
Food and WASH	4		0%	All other non-pharmaceutical produ	37	1	3%	Standard days method	3	0	0%
HIV RTK								All other TO3 products			
Other RTK											
Prefab											
Vehicles and other equipment											
Other non-pharma	52	24	46%								

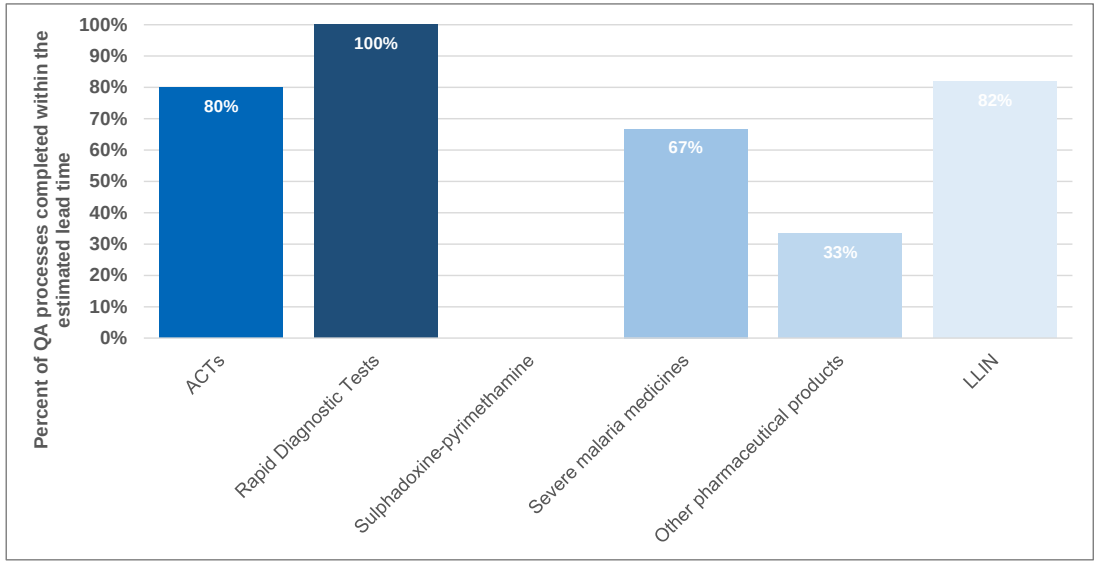
A2. Percentage of quality assurance (QA) processes completed within the total estimated QA lead times

Measure Definition

Numerator: Number of shipments complying with the pre-established QA lead times during the quarter
Denominator: Total number of shipments requiring QA processes that were cleared for shipment during the quarter.

Task Order	Annual Target	Achievement FY 2017 Q3	Achievement Year to Date
TO1	N/A		
TO2	N/A	81%	81%
TO3	N/A		
TO4	N/A		
All TOs	N/A		

Indicator Performance



Data Notes

- Two shipments of LLINs to Nigeria were excluded from the calculation because they required the loading of the shipments to be witnessed. Quality assurance inspection and test results were available significantly before the shipment was loaded. Loading date is determined based on factors external to QA processes.
- QA processes for Task Orders 1, 3 and 4 are managed by the GHSC-Quality Assurance project.

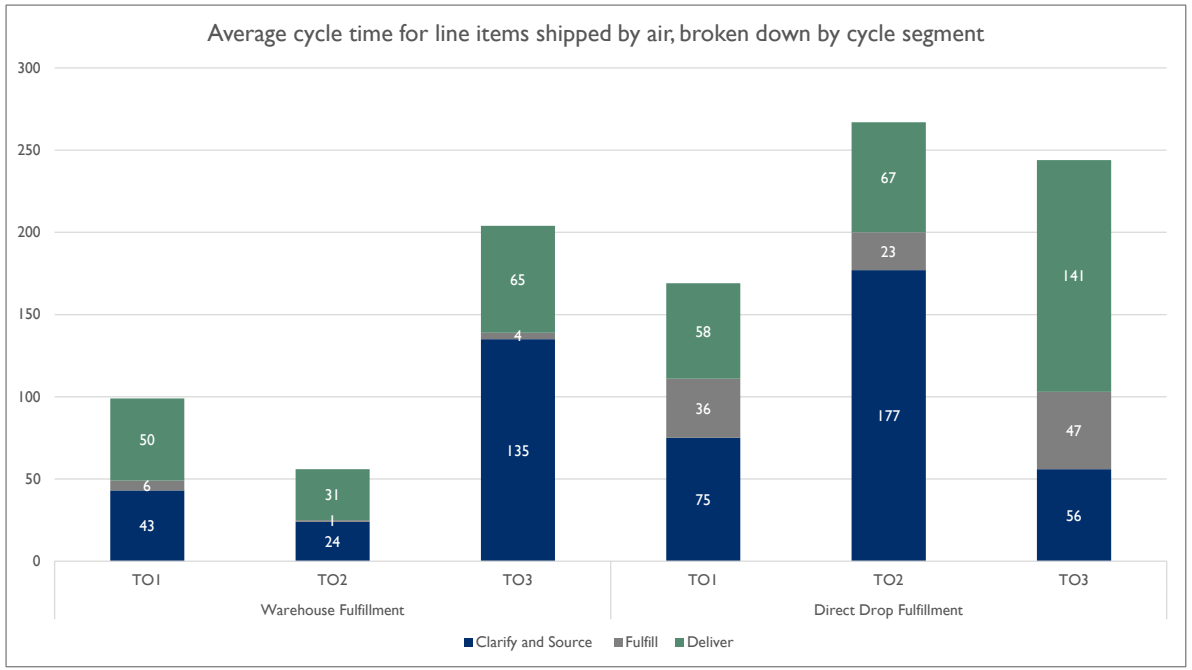
A3. Average Cycle Time

Measure Definition

Numerator: Sum of lead times for all line items delivered during the quarter
Denominator: The count of all line items delivered during the quarter

Task Order	Annual Target	Achievement (All Modes) FY 2017 Q3	Year to Date
TO1	N/A	154	150
TO2	N/A	234	228
TO3	N/A	220	205
TO4	N/A	310	310
All TOs	N/A	166	160

Indicator Performance



Data Notes

- Additional milestones and cycle segments are defined in the GHSC-PSM Monitoring and Evaluation Plan. Data for additional segments will be included as the quality and completeness of ARTMIS milestone data improves.
- Data on overall cycle start and end dates is complete for all line items delivered this quarter. However, internal milestone data is not complete for some line items. 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.
- Task Order 1 was the only TO with items shipped by land. The cycle times for these line items are included in Section 4 of the report- Key Data and Analysis, and on the following tab showing detailed product breakdown.

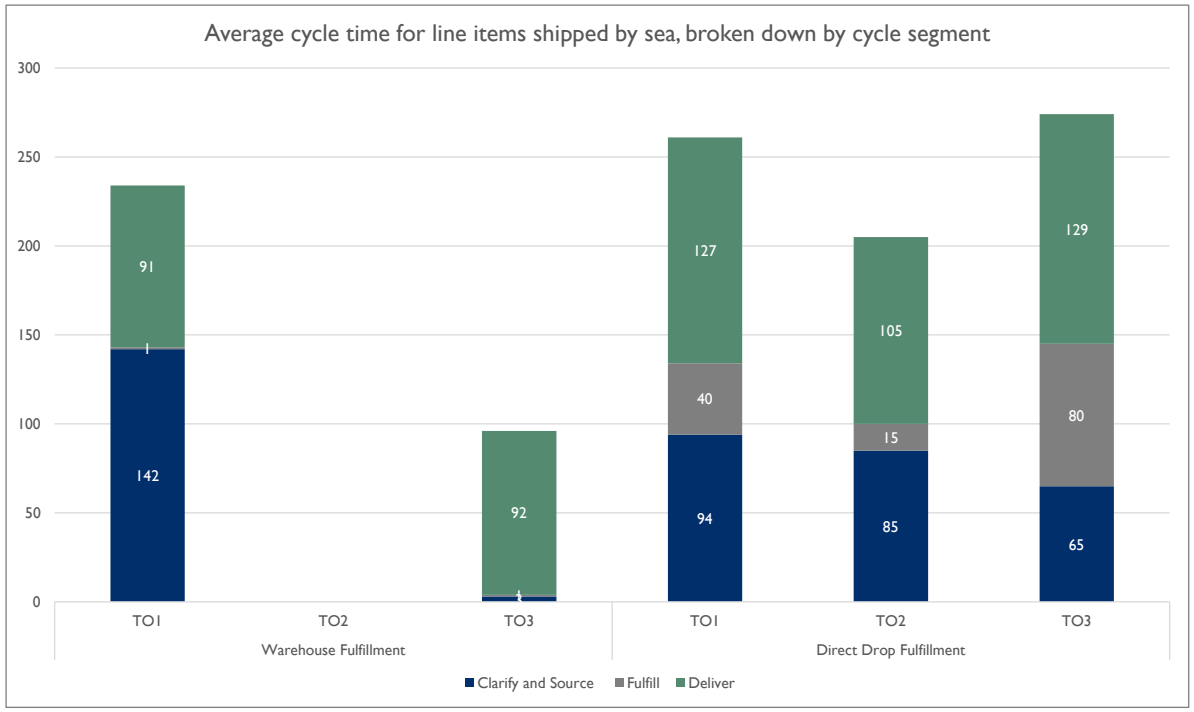
A3. Average Cycle Time

Measure Definition

Numerator: Sum of lead times for all line items delivered during the quarter
Denominator: The count of all line items delivered during the quarter

Task Order	Annual Target	Achievement (All Modes) FY 2017 Q3	Year to Date
TO1	N/A	154	150
TO2	N/A	234	228
TO3	N/A	220	205
TO4	N/A	310	310
All TOs	N/A	166	160

Indicator Performance



Data Notes

- Additional milestones and cycle segments are defined in the GHSC-PSM Monitoring and Evaluation Plan. Data for additional segments will be included as the quality and completeness of ARTMIS milestone data improves.
- Data on overall cycle start and end dates is complete for all line items delivered this quarter. However, internal milestone data is not complete for some line items. 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.
- Task Order 1 was the only TO with items shipped by land. The cycle times for these line items are included in Section 4 of the report- Key Data and Analysis, and on the following tab showing detailed product breakdown.
- The next two indicators (A4. Average inventory turns, and A5. Total landed costs) are not reported at this time. They are an annual and semi-annual indicators and will be included in the FY2017 Q4 report.

A3. Cycle Time (average) - Tracer product category

HIV	All channels and modes	Air		Sea		Land	
		Warehouse Fulfillment, Framework Contract	Direct Drop Fulfillment	Warehouse Fulfillment, Framework Contract	Direct Drop Fulfillment	Warehouse Fulfillment, Framework Contract	Direct Drop Fulfillment
Number of line items	809	32	510	17	32	33	185
Task Order 1	154	101	180	284	242	120	68
Adult ARVs	178	94	206		262	113	
Pediatric ARVs	169	108	181		219	158	
Laboratory	142		162		54		80
Condoms	262	262	197	284	247		
VMMC	76	77	252		232		47
Other pharmaceuticals	240		240		327		183
Food and WASH	271				271		
HIV RTK							
Other RTK							
Prefab							
Vehicles and other							
Other non-pharma	134		182				68

Malaria	All channels and modes	Air		Sea	
		Warehouse Fulfillment, Framework Contract	Direct Drop Fulfillment	Warehouse Fulfillment, Framework Contract	Direct Drop Fulfillment
Number of line items	125	8	78		39
Task Order 2	234	58	266		207
ACTs	226	60	264		
Rapid Diagnostic Tests	213		213		
Sulphadoxine-pyrimethamine					
Severe malaria medicines	364		364		
Other pharmaceutica	281	37	363		
LLIN	272		330		251
All other non-pharmaceutica	192		233		95

PRH - Method Level	All channels and modes	Air		Sea	
		Warehouse Fulfillment, Framework Contract	Direct Drop Fulfillment	Warehouse Fulfillment, Framework Contract	Direct Drop Fulfillment
Number of line items delivered	20	9	5	4	2
Task Order 3	220	206	245	191	283
Injectable contraceptives	128	65		191	
Implantable contraceptives	256		256		
Combined oral contraceptives	247	247			
Copper-bearing intraunterine devices	292	292			
Emergency oral contraceptives					
Progestin-only pills	356	472			239
Standard days method	262		230		326
All other TO3 products					

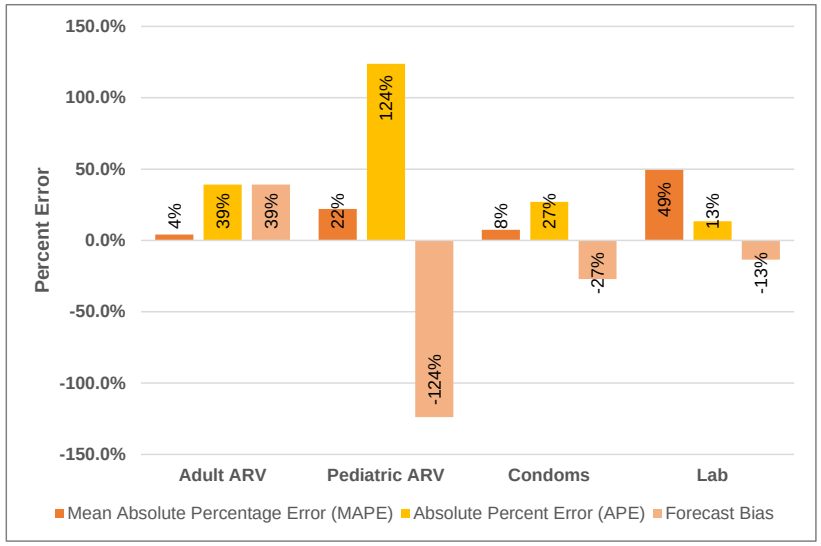
A6. Absolute Percent Forecast Error; with variants Mean Absolute Percent Error (MAPE) and Forecast Bias (Task Order 1)

Measure Definition

Numerator: Absolute value of the differences between the actual quantities desired to be delivered during the period minus the forecasted values.
Denominator: Sum of the actual quantities desired to be delivered.
See Date Notes below for variant definitions.

Product	Target Annual MAPE (%)	Target Annual Forecast Bias APE (%)	2017 Q3 APE (%)	2017 Q3 Forecast Bias (%)	Year to Date MAPE (%)	Year to Date Forecast Bias (%)
Adult ARV	N/A	N/A	39%	39%	4%	4%
Pediatric ARV	N/A	N/A	124%	-124%	22%	-22%
Condoms	N/A	N/A	27%	-27%	8%	-8%
Lab	N/A	N/A	13%	-13%	49%	49%
VMMC	N/A	N/A				
All	N/A	N/A	29%	-17%	7%	-7%

Indicator Performance



Data Notes

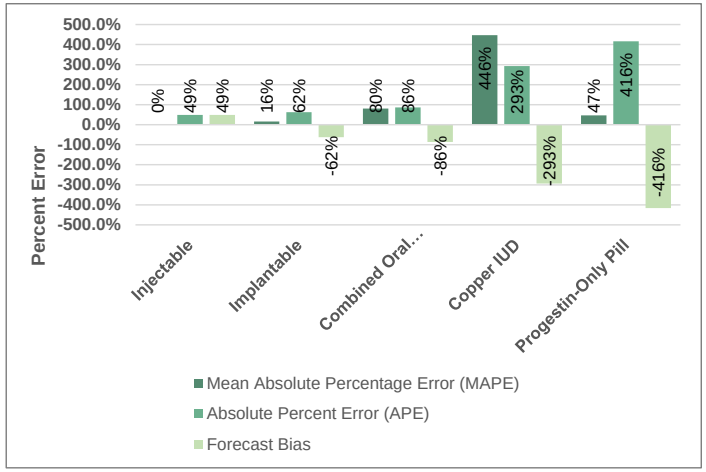
- Forecasted quantities are drawn from the GHSC-PSM global demand forecasts for each product, which are based on an aggregation of country supply plans submitted in the prior quarter. Actual quanities are derived based on the Requested Delivery Dates for products included in customer Requisition Orders submitted to ARTMIS.
- Mean Absolute Percent Error is calculated in the same manner as Absolute Percent Forecast Error, using the cumulative totals of forecasted and actual quantities over the course of the fiscal year.
- Forecast bias is calcuated using the real difference between actual and forecasted quantities in the numerator, rather than the absolute value. Negative forecast bias indicates fewer products requested compares to the forecast. Positive forecast bias indicates more products ordered than forecasted.
- At the present time, GHSC-PSM does not create demand forecasts for Task Order 2 or Task Order 4.

A6. Absolute Percent Forecast Error; with variants Mean Absolute Percent Error (MAPE) and Forecast Bias (Task Order 3)

Measure Definition

Numerator: Absolute value of the differences between the actual quantities desired to be delivered during the period minus the forecasted values.
Denominator: Sum of the actual quantities desired to be delivered.
See Date Notes below for variant definitions.

Indicator Performance



Product	Target Annual MAPE (%)	Target Annual Forecast Bias APE (%)	2017 Q3 APE (%)	2017 Q3 Forecast Bias (%)	Year to Date MAPE (%)	Year to Date Forecast Bias (%)
Injectable	N/A	N/A	49%	49%	0%	0%
Implantable	N/A	N/A	62%	-63%	16%	-16%
Combined Oral	N/A	N/A	86%	-86%	80%	-80%
Copper IUD	N/A	N/A	293%	-293%	446%	-446%
Progestin Pill	N/A	N/A	452%	-416%	47%	-47%
All	N/A	N/A	70%	-22%	48%	-48%

Data Notes

- Forecasted 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. Actual quanities are derived based on the Requested Delivery Dates for products included in customer Requisition Orders submitted to ARTMIS.
- Mean Absolute Percent Errror is calculated in the same manner as Absolute Percent Forecast Error, using the cumulative totals of forecasted and actual quantities over the course of the fiscal year.
- Forecast bias is calcuated using the real difference between actual and forecasted quantities in the numerator, rather than the absolute value. Negative forecast bias indicates fewer products requested compares to the forecast. Positive forecast bias indicates more products ordered than forecasted.
- At the present time, GHSC-PSM does not create demand forecasts for Task Order 2 or Task Order 4.

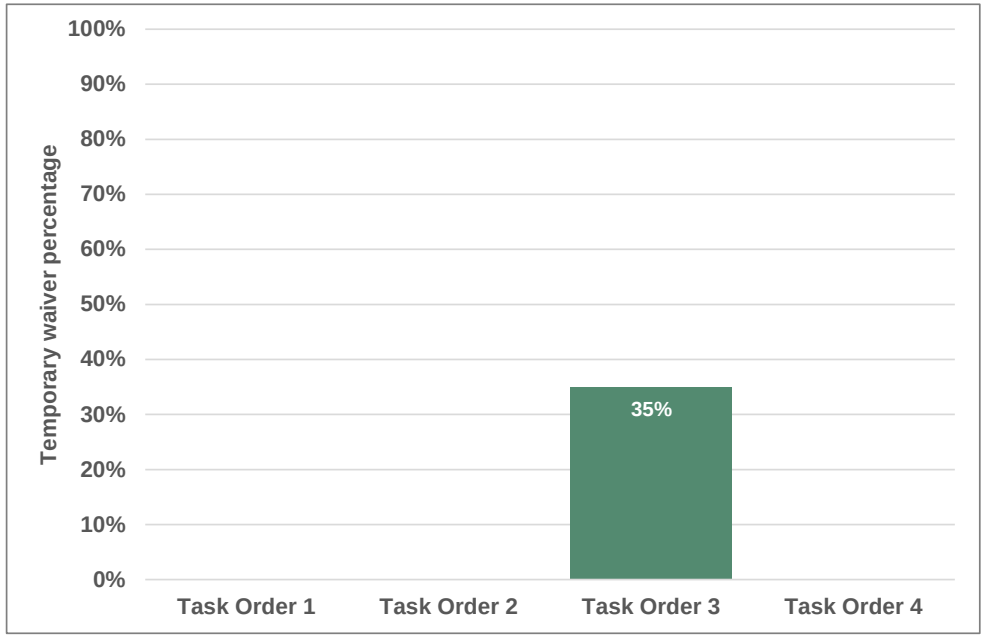
A7. Percentage of line items imported using a temporary registration waiver (Temporary Waiver Percentage)

Measure Definition

Numerator: Line items imported using a temporary registration waiver during the quarter
Denominator: Total line items delivered during the quarter

Task Order	Annual Target	Achievement FY 2017 Q3	Achievement Year to Date
TO1	N/A		
TO2	N/A		
TO3	N/A	35%	
TO4	N/A		
All TOs	N/A	35%	

Indicator Performance



Data Notes

- Data for Task Orders 1, 2 and 4 are not available. GHSC-PSM will continue to work on a systematic method for tracking registration data.

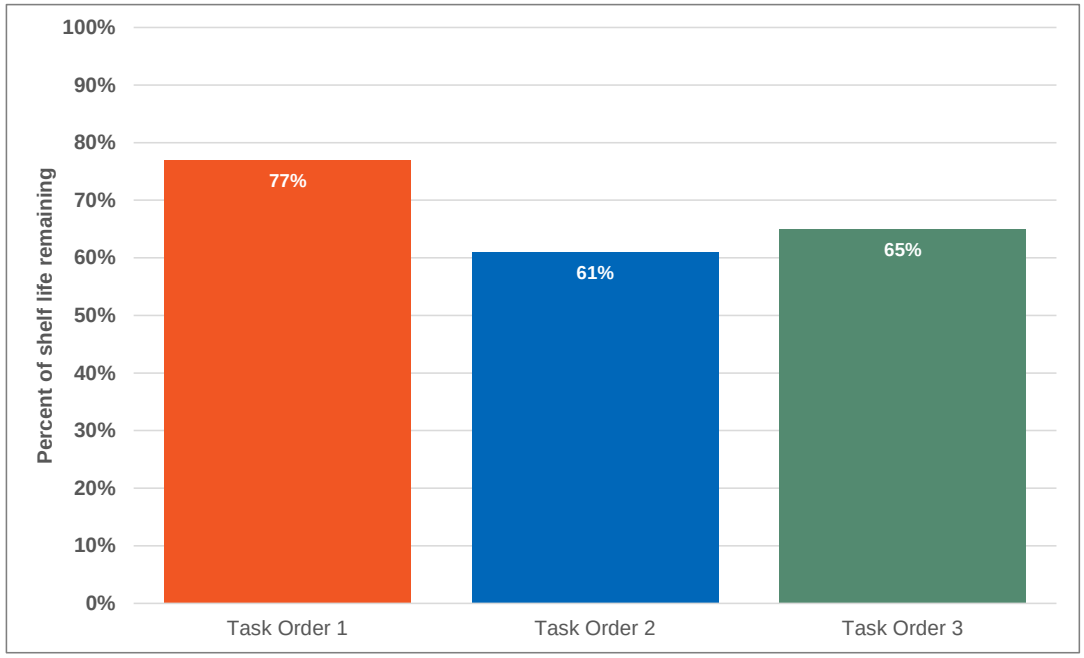
A8. Average percentage of shelf life remaining for warehoused commodities, weighted by the value of each commodity's stock (Product at Risk Percentage)

Measure Definition

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

Task Order	Annual Target	Achievement FY 2017 Q3	Achievement Year to Date
TO1	N/A	77%	77%
TO2	N/A	61%	61%
TO3	N/A	65%	65%
TO4	N/A		
All TOs	N/A	72%	72%

Indicator Performance



Data Notes

- Total value of stock on hand as of June 30, 2017 is as
- Task Order 1 stock on hand includes all condoms.
- The next indicator (A9. Supplier Concentration) is not reported at this time. It is a semi-annual indicator and will be included in the FY2017 Q4 report.

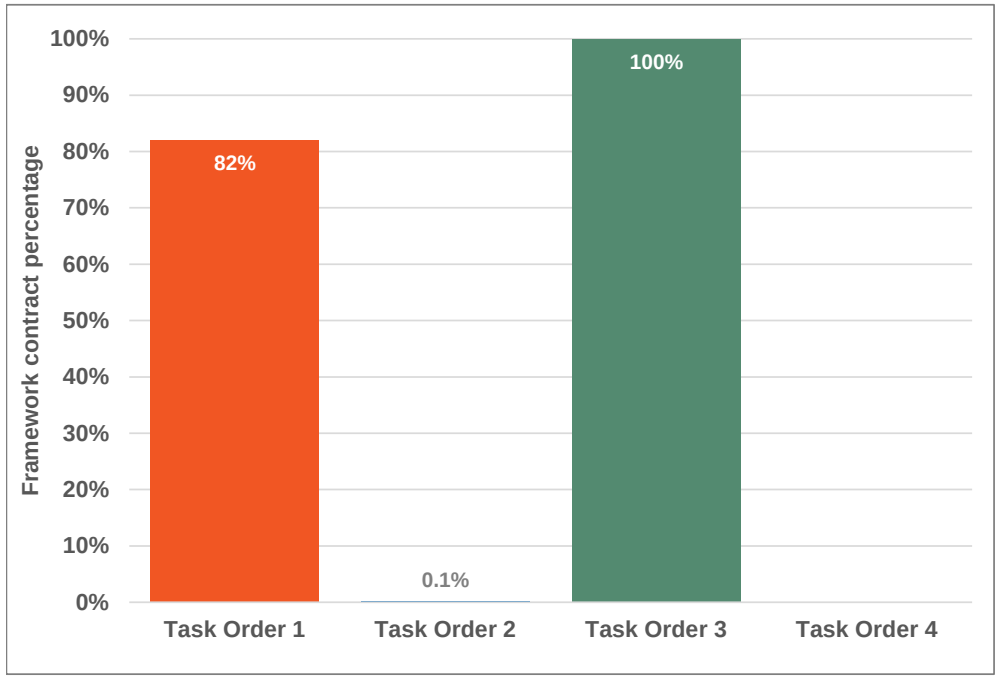
A10. Percentage of product procured using a framework contract (Framework Contract Percentage)

Measure Definition

Numerator: Value of product purchased through framework contracts during the quarter
Denominator: Total value of commodities purchased during the quarter

Task Order	Annual Target	Achievement FY 2017 Q3	Achievement Year to Date
TO1	N/A	82%	80%
TO2	N/A	0.1%	0.04%
TO3	N/A	100%	99%
TO4	N/A		0%
All TOs	N/A	70%	62%

Indicator Performance



Data Notes

- Total value of commodities purchased during the quarter is as follows: Task order 1: $155,933,657. Task Order 2: $31,297,461. Task Order 3: $11,451,032. Task Order 4: $0.

A10. Percentage of product procured using a framework contract (Framework Contract Percentage) - Tracer Product Categc

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
Task Order 1	$155,933,657	82%	Task Order 2	$31,297,462	0.1%	Task Order 3	$11,451,032	100%
All ARVs	$113,136,867	100%	ACTs	$12,779,246	0%	Injectable contraceptives	$1,135,770	100%
Laboratory	$23,985,689	2%	Rapid Diagnostic Tests	$1,772,103	0%	Implantable contraceptives	$9,566,750	100%
Condoms	$5,502,872	100%	Sulphadoxine-pyrimethamine	$2,615,843	0%	Combined oral contraceptives	$651,312	100%
VMMC	$9,077,937	95%	Severe malaria medicines	$10,735,321	0%	Copper-bearing intraunterine devices		
Other pharmaceuticals	$3,459,111	0%	Other pharmaceutical products	$2,339,749	0%	Emergency oral contraceptives		
Food and WASH	$732,571	0%	LLIN	$990,148	0%	Progestin-only pills	$97,200	100%
HIV RTK			All other non-pharmaceutical produ	$65,051	64%	Standard days method		
Other RTK	$38,610	0%				All other TO3 products		
Prefab								
Vehicles and other equipment								
Other non-pharma								

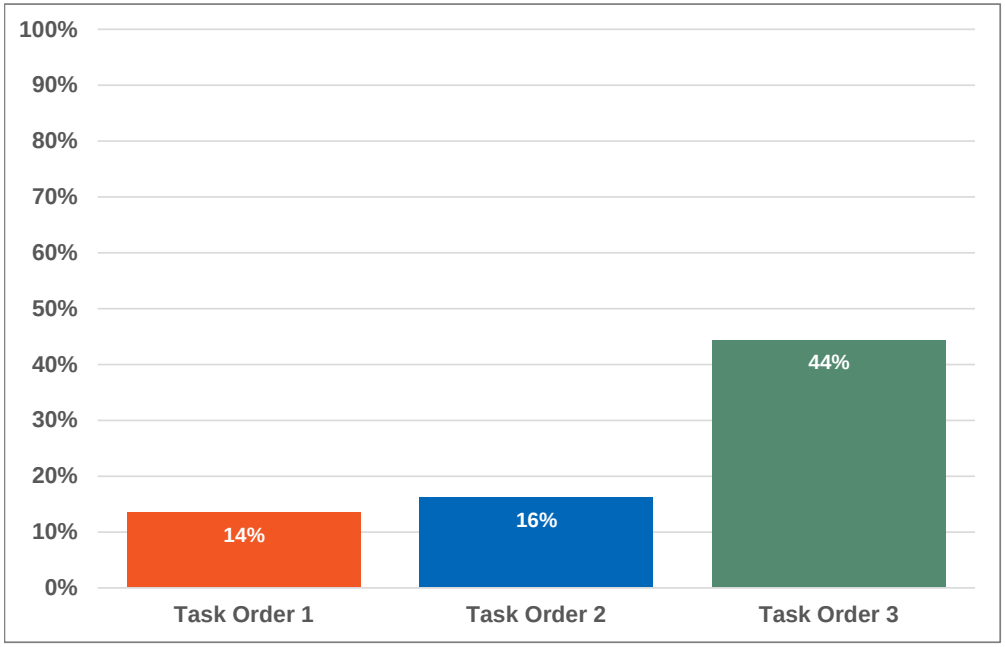
A11. Percentage of catalog products that are ordered frequently (Product order frequency)

Measure Definition

Numerator: Total number of catalog products that were ordered 3 or more times in the last year
Denominator: Total number of products in the GHSC-PSM catalog at the time of reporting

Task Order	Annual Target	Achievement FY 2017 Q3	Achievement Year to Date
TO1	N/A	14%	
TO2	N/A	16%	
TO3	N/A	44%	
TO4	N/A		
All TOs	N/A	14%	

Indicator Performance



Data Notes

- Total number of products in the catalog at the time of reporting is as follows: Task order 1: 2540. Task Order 2: 204. Task Order 3: 45.
- No Task Order 4 products have been added to the catalog at the time of reporting.
- The next indicator (A12. Price variance) is not reported at this time. The project is still operationalizing sources and indicator calculations.

A11. Percentage of catalog products that are ordered frequently (Product order frequency) - by Tracer Product Category

HIV	Total number of catalog products	% of products ordered 3+ times in the last year	% of products ordered 1-2 times in the last year	% of products ordered 0 times in the last year
Task Order 1	2540	14%	30%	56%
Adult ARVs	70	30%	9%	61%
Pediatric ARVs	82	27%	6%	67%
Laboratory	1439	14%	38%	47%
Condoms	140	9%	7%	84%
VMMC	18	28%	0%	72%
Other pharmaceuticals	391	9%	26%	65%
Food and WASH	6	33%	17%	50%
HIV RTK	22	0%	0%	100%
Other RTK	6	0%	50%	50%
Prefab	0			
Vehicles and other equipment	19	0%	21%	79%
Other non-pharma	347	10%	24%	65%

Malaria	Total number of catalog produc	% of products ordered 3+ times	% of products ordered 1-2 times in the last year	% of products ordered 0 times in the last year
Task Order 2	204	16%	29%	55%
ACTs	17	47%	6%	47%
Rapid Diagnostic Tests	15	13%	0%	87%
Sulphadoxine-pyrimethamine	5	60%	0%	40%
Severe malaria medicines	23	17%	26%	57%
Other pharmaceutical products	17	0%	41%	59%
LLIN	86	12%	12%	77%
All other non-pharmaceutical produc	41	15%	85%	0%

PRH	Total number of catalog produc	% of products ordered 3+ times	% of products ordered 1-2 times in the last year	% of products ordered 0 times in the last year
Task Order 3	45	44%	44%	11%
Injectable contraceptives	2	50%	0%	50%
Implantable contraceptives	3	67%	33%	0%
Combined oral contraceptives	3	67%	0%	33%
Copper-bearing intra-unterine devi	1	100%	0%	0%
Emergency oral contraceptives	2	0%	50%	50%
Progestin-only pills	2	50%	0%	50%
Calendar-based awareness metho	2	50%	0%	50%
Hormone-releasing intrauterine sys	0			
All other TO3 products	30	40%	60%	0%

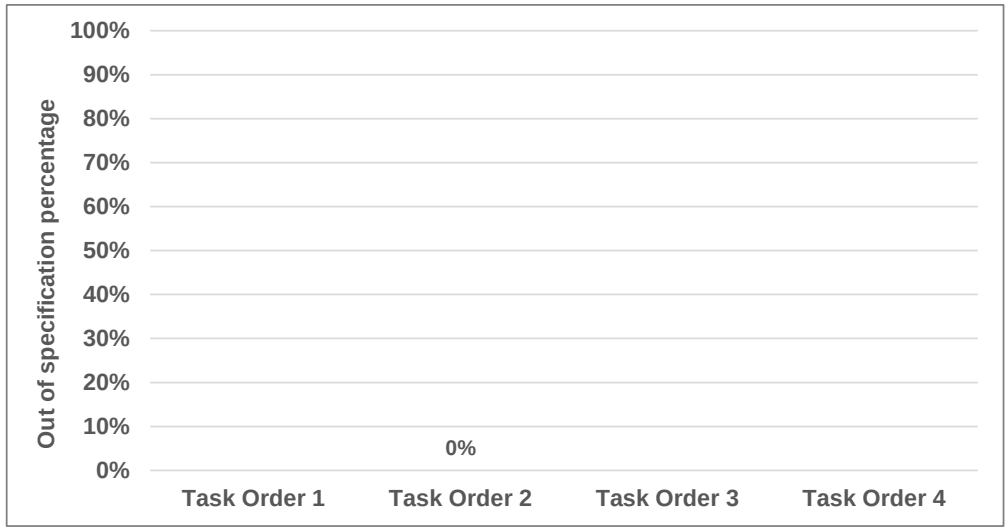
A13. Percentage of batches of product showing nonconformity (Out of Specification Percentage)

Measure Definition

Numerator: Total number of batches of product showing nonconformity during the quarter
Denominator: Total number of batches tested during the quarter

Task Order	Annual Target	Achievement FY 2017 Q3	Achievement Year to Date
TO1	N/A		
TO2	N/A	0%	0%
TO3	N/A		
TO4	N/A		
All TOs	N/A		

Indicator Performance



Data Notes

- Total number of batches of malaria products test this quarter is 306
- All QA testing for Task Order 2 is conducted by GHSC-PSM. All testing for Task Orders 1, 3 and 4 is conducted via the USAID Global Health Supply Chain Program-Quality Assurance (GHSC-QA) contract. GHSC-QA may be contacted for out of specification data for these task orders.

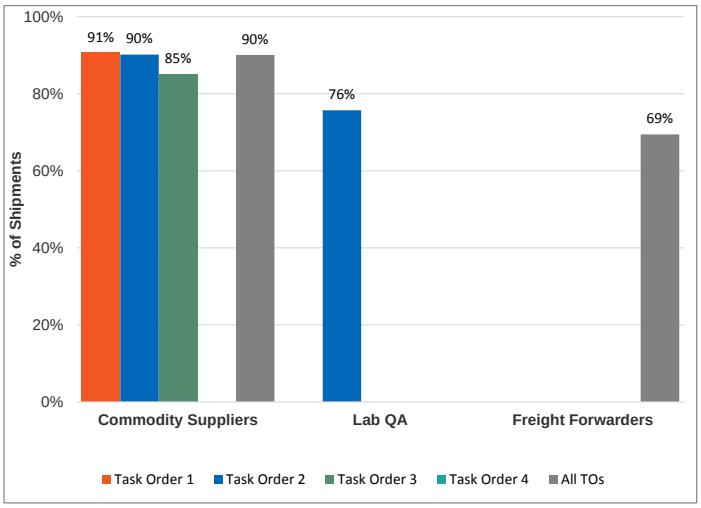
A14. Average vendor rating score

Measure Definition

Numerator: Sum of all vendor ratings.
Denominator: Number of vendors from whom GHSC-PSM procured products/commodities, lab testing services, or freight forwarding during the quarter

Task Order	Annual Target	Achievement FY 2017 Q3 comm. suppliers	Achievement FY 2017 Q3 Lab QA	Achievement FY 2017 Q3 Freight Forwarders
TO1	N/A	91%	N/A	N/A
TO2	N/A	90%	76%	N/A
TO3	N/A	85%	N/A	N/A
TO4	N/A	N/A	N/A	N/A
All TOs	**N/A**	**90%**	**76%**	**69%**

Indicator Performance



Data Notes

Denominators

- Commodity suppliers: TO1 suppliers: 32; TO2 suppliers: 15; TO3 suppliers: 4
- Lab QA vendors (all TO2): 3
- Freight forwarders (no TO disaggregation): 4

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
TO1 (n=32)	**91%**	97%	84%	98%
TO2 (n=15)	**90%**	100%	83%	95%
TO3 (n=4)	**85%**	100%	76%	75%
All TOs	**90%**	**98%**	**82%**	**93%**

QA Lab Vendors (TO2 only)				
Criteria	Reliability (timeliness of service)	Responsiveness		Completeness (of documentation)
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?	On-time confirmation of receipt of samples for analysis	Frequency of modification to Certificates of Analysis (CoAs)
Weight	43%	10%	10%	18%
Average score (n=3)	**69%**	**44%**	**94%**	**100%**

3PL Vendors				
#	Component	Numerator		Score
1–Reliability (timeliness of service)				
1a	Estimated ship date versus actual ship date (within 3 days)	Number of shipments during the reporting period for which the actual ship date was within 3 calendar days of the estimated ship date.	Number of shipments during the reporting period	72%

		301	416	
1b	Port-to-door ship time reliability (Percentage of shipments that arrive within the required lead time for port-to-door shipping based on shipping lane and channel) (Disaggregated by ocean and air)	Number of shipments delivered during the reporting period which arrived within the approved window of the required lead time for the shipping lane per the GHSC-PSM lead time table	Number of shipments delivered during the reporting period	
	OCEAN (+7/-12 calendar days window)	35	76	46%
	AIR (+3/-10 calendar days window)	190	290	66%
2–Responsiveness				
2a	Percentage of shipments for which booking to waiver initiation cycle time was within 4 business days (waiver shipments only)	Number of waiver shipments during the reporting period for which the booking date to waiver initiate date period was less than or equal to 4 business days	Number of waiver shipments during the reporting period	
		241	572	42%
2c	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	
		414	572	72%
3–Quality of shipment				
3a	Percentage of shipments delivered without OSD (overages, shortages or damages) (Cargo Integrity) (When investigation finds 3PL at fault) (Measure at end of investigation) historical	Number of shipments delivered without OSD	Number of shipments delivered during the reporting period	
		403	406	99%
4–Invoice accuracy				
4a	Invoice accuracy compared to contract price	Number of invoices received during the reporting period which had no (cost) rating errors	Number of invoices received during the reporting period	
		301	438	69%

5–Compliance				
5a	Percentage of NCRs (non-conformance reports) adequately resolved within allotted timeframe (no NCRs = 100%)	Number of NCRs received for which an adequate response occurred within the allotted timeframe	Number of NCRs received	
		6	6	100%

Service
83%
76%
74%
81%

Cost	Service	Total
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)	
15%	5%	100%
38%	**100%**	**76%**

Indicator weight	Component weight	Weighted score
	50%	
20%		

		31%
15%		
15%		
	20%	11%
10%		
10%		
	10%	10%
10%		
	10%	7%
10%		

	10%	10%
10%		
	Total Score	70.0%

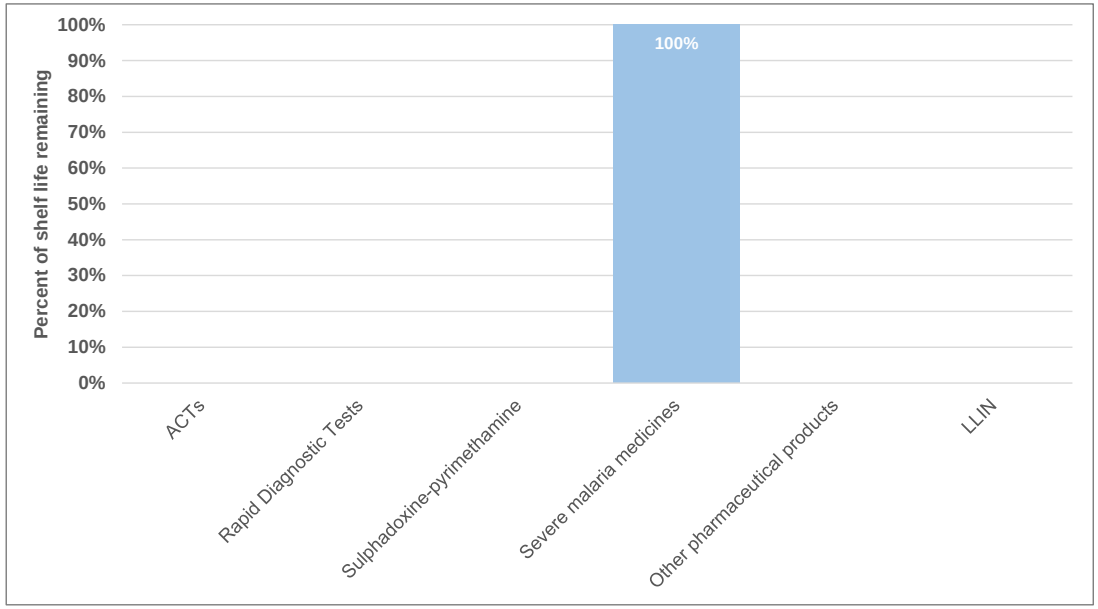
A15. Percentage of Quality Assurance Investigation reports submitted within 30 days of outcome determination (QA investigation report subm

Measure Definition

Numerator: Total number of Quality Assurance invesitgation reports submitted to PMI within 30 days of outcome determination
Denominator: Total number of QA investigation reports due during the quarter

Task Order	Annual Target	Achievement FY 2017 Q3	Achievement Year to Date
TO1	N/A		
TO2	N/A	100%	100%
TO3	N/A		
TO4	N/A		
All TOs	N/A	100%	100%

Indicator Performance



Data Notes

- N/A
- All QA activities for Task Order 2 are conducted by GHSC-PSM. All QA for Task Orders 1, 3 and 4 is managed by the USAID Global Health Supply Chain Program-Quality Assurance (GHSC-QA) contract. GHSC-QA may be contacted for data related to these task orders.

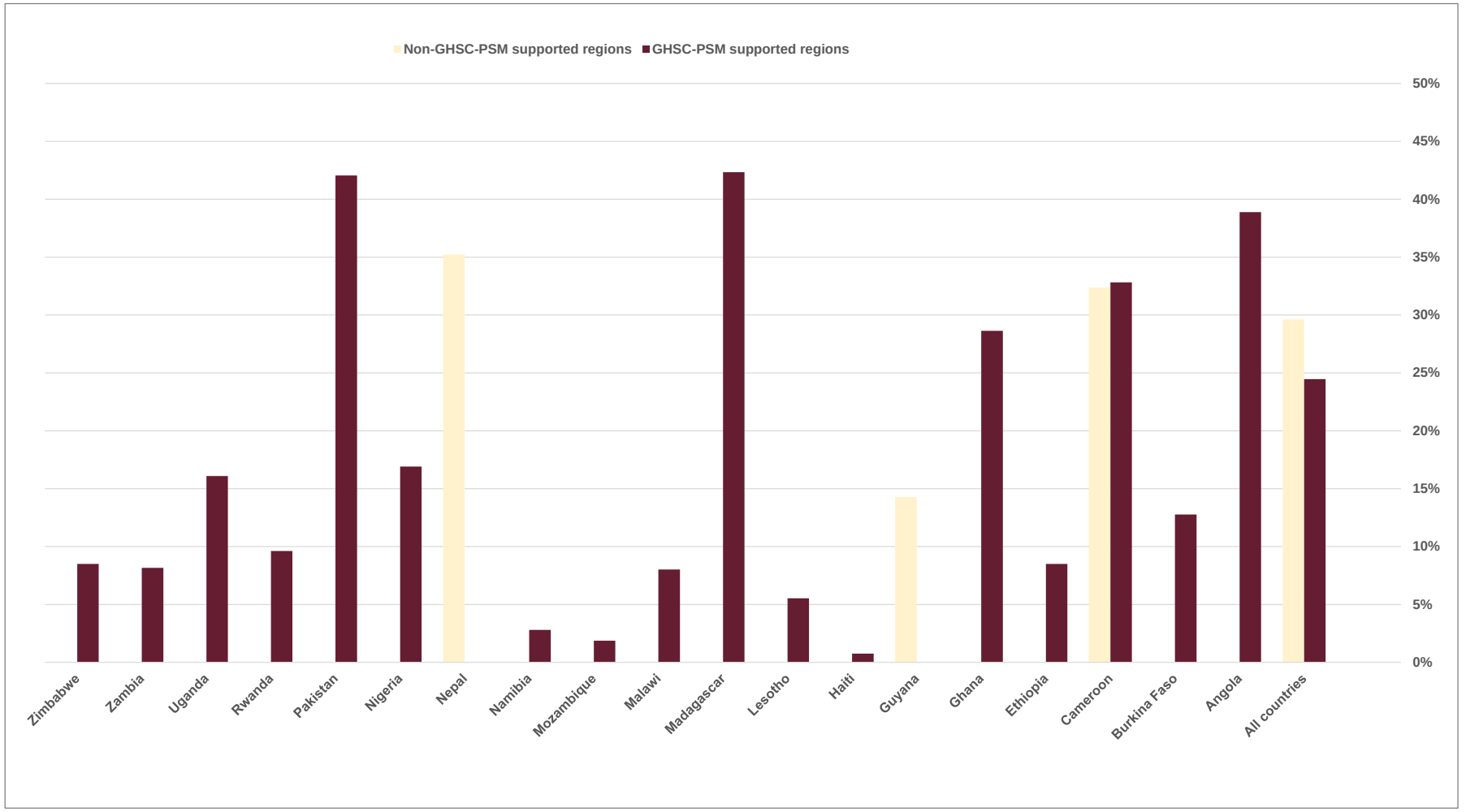
B1. Stockout rate at SDPs

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 which offer the tracer product.

Task Order	Annual Target	Achievement FY 2017 Q3	Achievement Year to Date
TO1	N/A	8%	7%
TO2	N/A	21%	16%
TO3	N/A	31%	30%
All TOs	N/A	24%	20%

Indicator Performance



B1. Percentage of SDPs with Stockouts of Tracer Products

	Countries supported for all task orders	Angola GHSC-PSM-supported	Burkina Faso GHSC-PSM-supported	Cameroon GHSC-PSM-supported	Cameroon non-GHSC-PSM-supported	Ethiopia GHSC-PSM-supported	Ghana GHSC-PSM-supported	Guyana non-GHSC-PSM-supported	Haiti GHSC-PSM-supported	Lesotho GHSC-PSM-supported	Madagascar GHSC-PSM-supported	Malawi GHSC-PSM-supported	Mozambique GHSC-PSM-supported	Namibia GHSC-PSM-supported	Nigeria GHSC-PSM-supported	Rwanda GHSC-PSM-supported	Uganda GHSC-PSM-supported	Zambia GHSC-PSM-supported	*Zimbabwe GHSC-PSM-supported (Q2 FY2017)
HIV	Task Order 1	30%		33%	32%	7%	24%	14%	1%	6%			2%	3%	8%	7%	14%	6%	4%
	First line adult ARVs	0%		0%	7%	2%	20%	5%	0%	0%			1%	0%	6%	7%	4%	7%	1%
	Second line adult ARVs	44%		24%	64%	4%	29%	6%	2%	2%			2%	2%	6%	2%	8%	5%	5%
	First line pediatric ARVs	67%		12%	45%	2%		38%	1%	1%			3%	0%	7%	4%	5%	15%	9%
	First RTKs	11%		0%		16%	13%		3%	4%				8%	8%	8%	10%	9%	2%
	Second RTKs	33%		31%		26%	36%		1%	7%				0%	8%	18%	30%	6%	2%
	Tie-breaker RTKs					33%				9%				8%	12%		29%		10%
	Male condoms	11%		86%		10%	28%		1%	4%				0%	6%	20%		5%	2%
	Female condoms	56%		86%						13%				0%	8%	26%		4%	3%
	EID consumables					11%							0%		4%	0%			
	EID reagents					11%				0%			20%		29%	0%		0%	
	Viral load consumables					32%							0%		4%	0%			
	Viral load reagents					11%				100%			0%		13%	11%		18%	
	Ready-to-use therapeutic foods (RUTF)					8%				15%									
Malaria	Task Order 2	57%	13%			7%	34%				37%	10%			22%	12%	24%	15%	15%
	First-line ACTs (AL 6X1)	80%	16%			6%						6%			11%	14%		23%	37%
	First-line ACTs (AL 6X2)	40%	25%			7%						10%			39%	30%		16%	10%
	First-line ACTs (AL 6X3)	20%				8%						17%			31%	11%		14%	12%
	First-line ACTs (AL 6X4)	0%				8%	19%					9%			57%	6%		16%	9%
	AL inability to treat)	0%	12%			3%									9%	0%		2%	2%
	First-line ACTs (AS/AQ 100/270mgx3)		12%								29%				17%				
	First-line ACTs (AS/AQ 100/270mgx6)		9%								24%				19%				
	25/67.5mg)						66%				38%				12%				
	50/135mg)						50%				25%				15%				
	malaria	100%	4%			9%	24%				16%	2%			17%	3%	14%	12%	6%
	(SP)	100%	9%				17%				70%	20%			14%		36%	11%	12%
	LLINs		13%								79%				13%				

B1. Percentage of SDPs with Stockouts of Tracer Products

	Countries supported for all task orders	Ethiopia GHSC-PSM-supported	Ghana GHSC-PSM-supported	Haiti GHSC-PSM-supported	Madagascar GHSC-PSM-supported	Malawi GHSC-PSM-supported	Nigeria GHSC-PSM-supported	Pakistan GHSC-PSM-supported	Rwanda GHSC-PSM-supported	Uganda GHSC-PSM-supported	Zambia GHSC-PSM-supported	*Nepal non-GHSC-PSM-supported
PRH**	Task Order 3	10%	25%	0%	47%	6%	8%	42%	10%	40%	3%	35%
	Copper-bearing intrauterine devices	17%		0%	86%	2%	3%	30%	9%		0%	81%
	Calendar-based awareness methods			0%	3%				60%			
	devices											
	Male condoms	10%	28%	1%	58%	15%	6%	17%	20%		5%	7%
	Female condoms				82%	8%	8%		26%		4%	
	Injectable contraceptives	5%	21%	0%	12%	5%	1%	21%	6%	40%	0%	
	Depot Medroxyprogesterone Acetate 104 mg/0.65 mL											
	Depot Medroxyprogesterone Acetate 150 mg Vial, SR	5%	21%	0%	12%	5%	3%	21%	6%	40%	3%	5%
	Norethisterone enanthate						10%				3%	
	Implantable contraceptives	3%	24%	1%	56%		11%		4%		0%	75%
	Implant	11%			56%	5%	23%		6%		1%	
	Levonorgestrel 75mg/ rod, 2 rod Implant	9%	24%	1%		4%	11%		4%		1%	75%
	Combined oral contraceptives		30%	0%	19%	4%	6%	19%	1%		12%	
	Levonorgestrel / Ethinyl Estradiol 150/30 mcg + Fe 75 mg, 28 Tablets/Cycle	8%	30%	0%	19%			19%	1%		12%	8%
	Levonorgestrel/Ethinyl Estradiol 150/30 mcg 28 Tablets/Cycle					4%	6%					
	Emergency oral contraceptives	8%				5%		92%				
	Levonorgestrel 0.75 mg, 2 Tablet	8%				5%		92%				
	Levonorgestrel 1.5 mg, 1 Tablets											
	Progestin only pills	13%			58%	6%		93%	3%		2%	
	Levonorgestrel 30 mcg 35 Tablets/Cycle	13%			58%	6%		93%	3%		2%	

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 observatoins for a tracer commodity at storage sites.

Task Order	Annual Target	Achievement FY 2017 Q3	Achievement Year to Date
TO1	N/A	29%	29%
TO2	N/A	13%	14%
TO3	N/A	10%	11%
TO4	N/A	5%	7%
All TOs	N/A	11%	12%

Indicator Performance

		Central	Sub-National Level 1	Sub-National Level 2
HIV	Task Order 1	31%	28%	
	First-line adult ARVs	63%	40%	
	Second-line adult ARVs	17%	34%	
	First-line pediatric ARVs	43%	37%	
	First RTKs	44%	35%	
	Second RTKs	30%	29%	
	Tie-breaker RTKs	0%	37%	
	Male condoms	25%	12%	
	Female condoms	18%	6%	
	RUTF	0%	24%	
	EID consumables	0%		
	EID reagents	11%		
	Viral load consumables	40%		
	Viral load reagents	11%		
Malaria	Task Order 2	22%	18%	12%
	First-line ACTs (AL 6X1)	22%	17%	
	First-line ACTs (AL 6X2)	17%	13%	
	First-line ACTs (AL 6X3)	29%	8%	
	First-line ACTs (AL 6X4)	29%	20%	
	First-line ACTs (AS/AQ 100/270mgx3)	25%	7%	16%
	First-line ACTs (AS/AQ 100/270mgx6)	13%	17%	16%
	First-line ACTs (AS/AQ 25/67.5mg)	22%	17%	10%
	First-line ACTs (AS/AQ 50/135mg)	22%	18%	14%
	Rapid diagnostic tests for malaria	15%	20%	19%
	Sulphadoxine-pyrimethamine (SP)	26%	18%	5%
	LLINs	10%	63%	3%

		Central	Sub-National	Sub-National Level 2
PRH	Task Order 3	21%	16%	9%
	Injectable contraceptives	32%	16%	23%
	Depot Medroxyprogesterone Acetate 104 mg/0.65mL			
	Depot Medroxyprogesterone Acetate 150 mg Vial, SR	38%	22%	23%
	Norethisterone enanthate	25%	4%	
	Implantable contraceptives	31%	28%	10%
	Etonogestrel 68 mg/rod, 1 rod Implant	0%	26%	10%
	Levonorgestrel 75mg/rod, 2 rod Implant	48%	21%	
	Combined oral contraceptives	16%	18%	20%
	Levonorgestrel/Ethinyl Estradiol 150/30 mcg +Fe 75 mg, 28 Tablets/cycle	5%	18%	20%
	Levonorgestrel/Ethinyl Estradiol 150/30 mcg 28	0%		
	Emergency oral contraceptives	21%	11%	1%
	Levonorgestrel 0.75 mg, 2 Tablet	0%	18%	1%
	Levonorgestrel 1.5 mg, 1 Tablet	50%	4%	
	Progestin only pills	21%	16%	7%
	Levonorgestrel 30 mcg 35 Tablets /cycle	25%	16%	7%
	Copper-bearing intrauterine devices	0%	14%	3%
	Calendar-based awareness methods	0%	13%	15%
	Male condoms	33%	13%	7%
	Female condoms	19%	6%	1%
MCH	Task Order 4	17%	22%	4%
	Oxytocin (10 IU injectable)	25%	33%	5%
	MgSO4 (50% injectable)	0%	32%	3%
	Injectable gentamicin	29%	32%	1%
	ORS+zinc (together)		0%	
	Chlorhexidine gel	0%	20%	
	Amoxicillin (125mg or 250mg dispersible tablets)	0%	13%	
	Zinc (alone)	29%	13%	
	ORS (alone)	29%	23%	
	PCV vaccine			6%

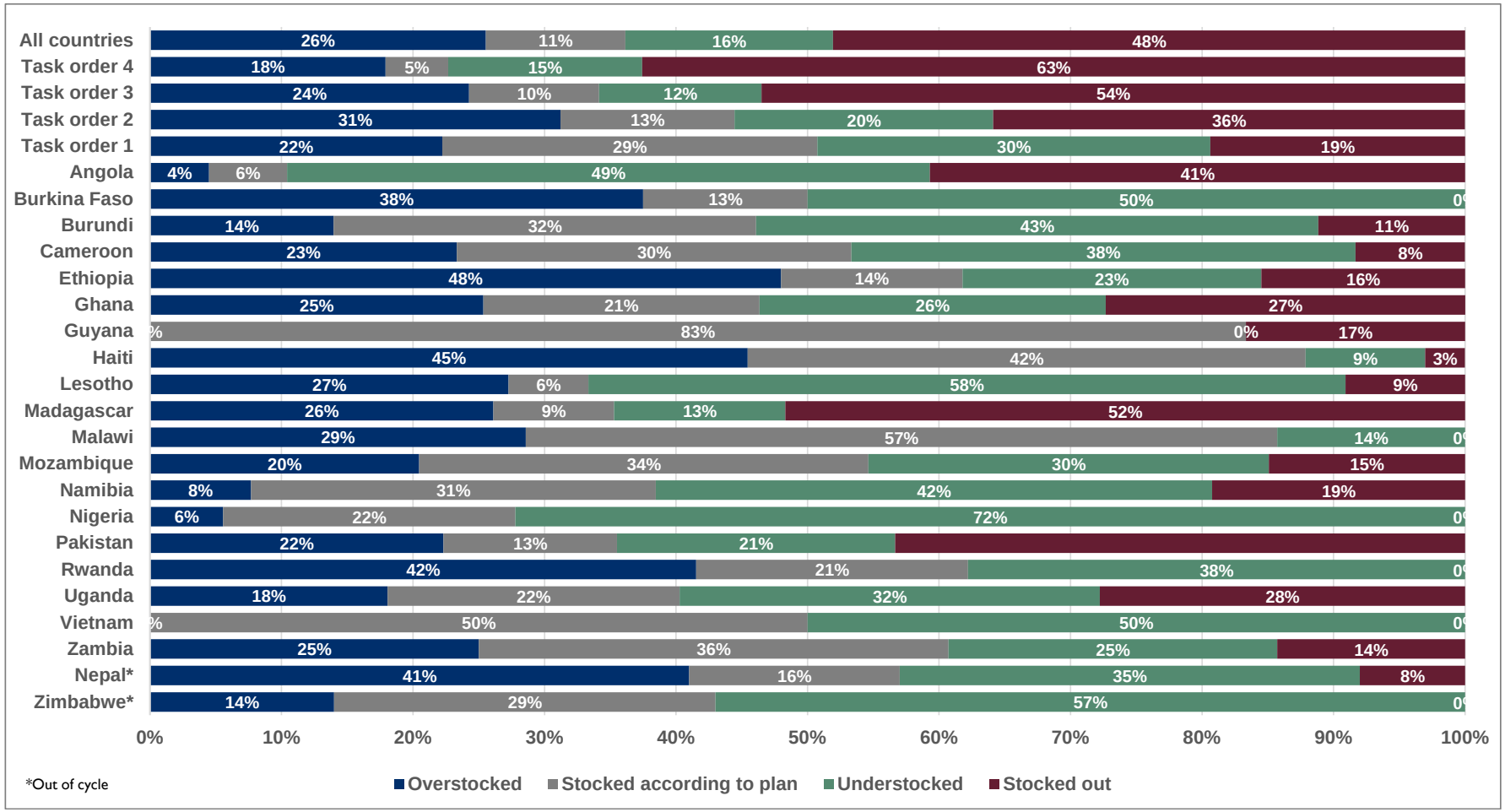
B2. Percentage of stock status observations in storage sites, where commodities are stocked according to plan, by level in supply system (Tracer Products for out of cycle countries- Zimbabwe and Nepal)

Indicator Performance

		Central	Sub-National	Sub-National
HIV	Task Order 1	25%		
	First-line adult ARVs	0%		
	Second-line adult ARVs	0%		
	First-line pediatric ARVs	0%		
	First RTKs	100%		
	Second RTKs	100%		
	Tie-breaker RTKs	0%		
	Male condoms	0%		
	Female condoms	0%		
	RUTF			
	EID consumables			
	EID reagents			
	Viral load consumables			
	Viral load reagents			
Malaria	Task Order 2	33%		
	First-line ACTs (AL 6X1)	0%		
	First-line ACTs (AL 6X2)	100%		
	First-line ACTs (AL 6X3)	0%		
	First-line ACTs (AL 6X4)	0%		
	First-line ACTs (AS/AQ 100/270mgx3)			
	First-line ACTs (AS/AQ 100/270mgx6)			
	First-line ACTs (AS/AQ 25/67.5mg)			
	First-line ACTs (AS/AQ 50/135mg)			
	Rapid diagnostic tests for malaria	0%		
	Sulphadoxine-pyrimethamine (SP)	100%		
	LLINs			

		Central	Sub-National	Sub-National
PRH	Task Order 3	0%	24%	17%
	Injectable contraceptives	0%	0%	24%
	Depot Medroxyprogesterone Acetate 104 mg/0.65mL			
	Depot Medroxyprogesterone Acetate 150 mg Vial, SR	0%	0%	24%
	Norethisterone enanthate			
	Implantable contraceptives	0%	25%	19%
	Etonogestrel 68 mg/rod, 1 rod Implant			
	Levonorgestrel 75mg/rod, 2 rod Implant	0%	25%	19%
	Combined oral contraceptives	0%	20%	23%
	Levonorgestrel/Ethinyl Estradiol 150/30 mcg +Fe 75 mg, 28 Tablets/cycle	0%	25%	
	Emergency oral contraceptives			
	Levonorgestrel 0.75 mg, 2 Tablet			
	Levonorgestrel 1.5 mg, 1 Tablet			
	Progestin only pills			
	Levonorgestrel 30 mcg 35 Tablets /cycle			
	Copper-bearing intrauterine devices	0%	0%	11%
	Calendar-based awareness methods			
	Male condoms	0%	50%	13%
	Female condoms			
MCH	Task Order 4	0%	22%	15%
	Oxytocin (10 IU injectable)	0%	50%	16%
	MgSO4 (50% injectable)		0%	13%
	Injectable gentamicin		25%	13%
	ORS+zinc (together)			
	Chlorhexidine gel	0%	0%	11%
	Amoxicillin (125mg or 250mg dispersible tablets)	0%		9%
	Zinc (alone)	0%	20%	12%
	ORS (alone)	0%	20%	39%
	PCV vaccine			

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



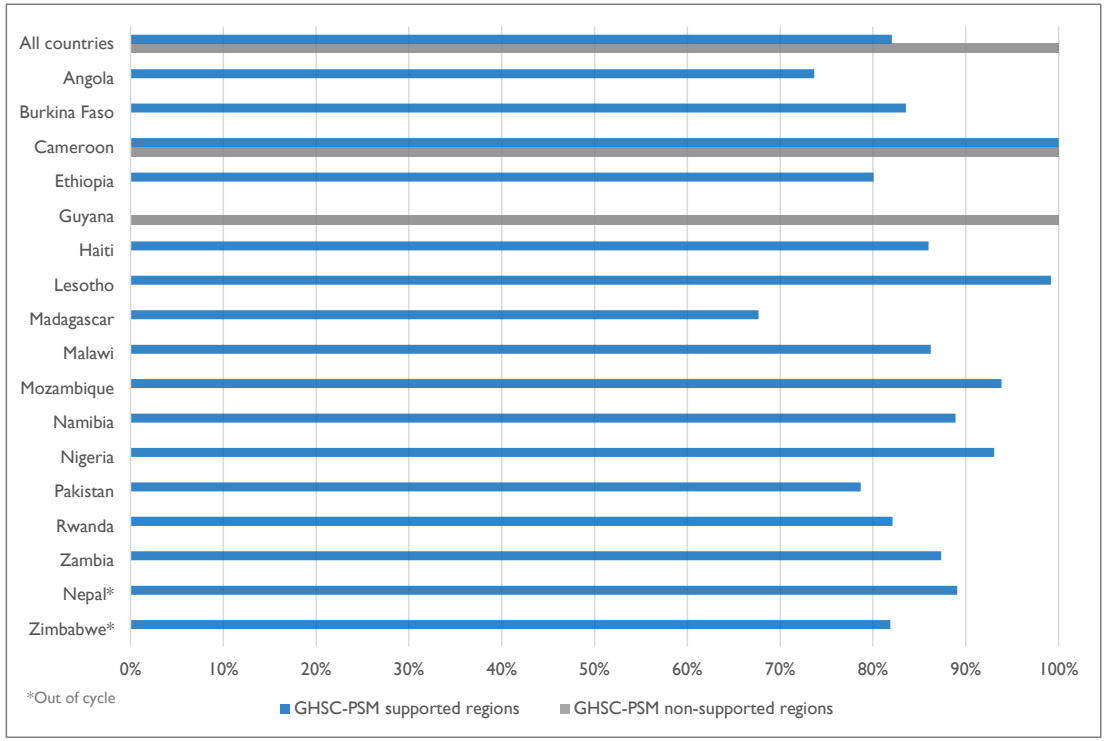
B3. Service Delivery Point (SDP) reporting rate to the Logistics Management Information System (LMIS)

Measure Definition

Numerator: Number of SDPs that submitted the required LMIS report(s) or order form(s) during the previous reporting period.
Denominator: The total number of SDPs in country which should be reporting.

Task Order	Annual Target	Achievement FY 2017 Q3	Achievement Year to Date
TO1	N/A	91%	90%
TO2	N/A	85%	82%
TO3	N/A	79%	80%
TO4	N/A	77%	74%
All TOs	N/A	82%	81%

Indicator Performance



Data Notes

- N/A

B3. Service Delivery Point (SDP) reporting rate to the Logistics Management Information System (LMIS)

Countries supported for all task orders		Angola GHSC-PSM-supported	Burkina Faso GHSC-PSM-supported	Cameroon GHSC-PSM-supported	Cameroon non-GHSC-PSM-supported	Ethiopia GHSC-PSM-supported	Guyana non-GHSC-PSM-supported	Haiti GH-SC-PSM-supported	Lesotho GH-SC-PSM-supported	Madagascar GH-SC-PSM-supported	Malawi GH-SC-PSM-supported	Mozambique GH-SC-PSM-supported	Namibia GH-SC-PSM-supported	Nigeria GH-SC-PSM-supported	Pakistan GH-SC-PSM-supported	Rwanda GH-SC-PSM-supported	Zambia GH-SC-PSM-supported	*Nepal non-GHSC-PSM-supported regions	*Zimbabwe GHSC-PSM-supported regions
HIV	Task Order 1	100%		100%	100%	80%	100%	82%	99%			94%	89%	94%		87%	93%		81%
Malaria	Task Order 2	50%	84%			80%				71%	86%			97%		80%	86%		83%
PRH	Task Order 3					80%		88%		66%	86%			81%	79%	89%	86%	89%	
MCH	Task Order 4					80%				66%	86%					74%	86%	89%	

* Out of cycle

Next indicator:

B4 (In-country data confidence) is not reported this time. Reason: Annual indicator.

B5 (Annual Forecast Rreviews) is not reported this time. Reason: Annual indicator.

B6. Percentage of countries conducting quarterly supply plan updates

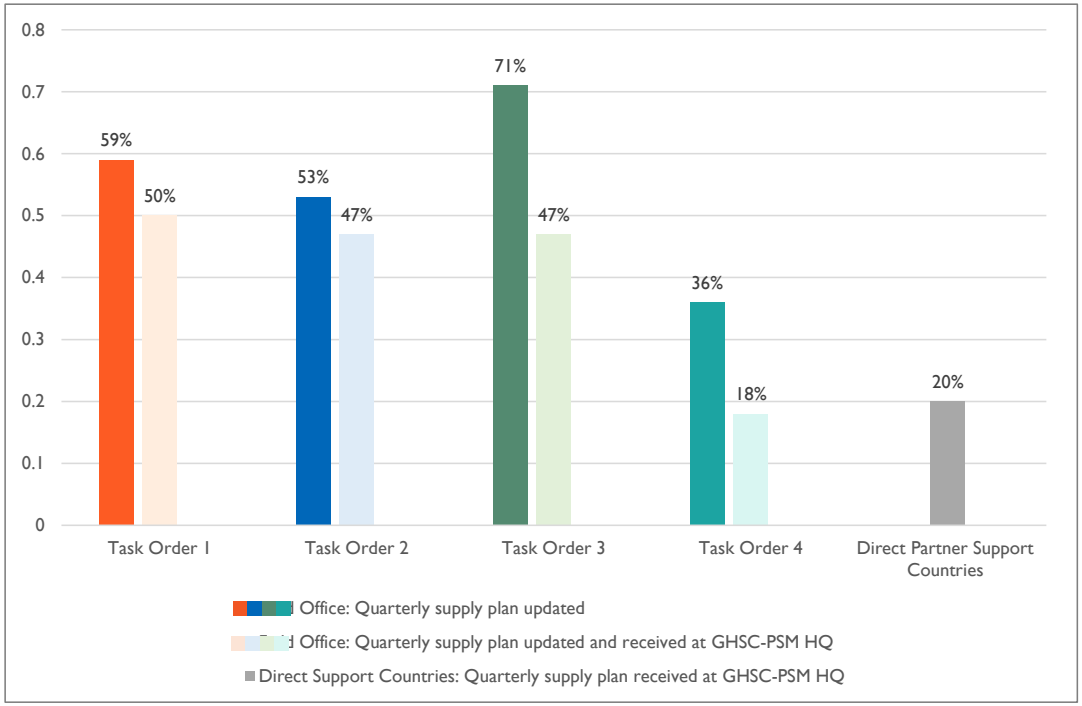
Measure Definition

Numerator: Number of all GHSC-PSM-supported countries that conducted supply plan updates in each quarter.
Denominator: Total number of GHSC-PSM-supported countries.

Task Order	Annual Target	Achievement FY 2017 Q3	Achievement Year to Date
TO1	N/A	59%	75%
TO2	N/A	53%	58%
TO3	N/A	71%	77%
TO4	N/A	36%	36%
DPS*	N/A	20%	20%
All TOs**	N/A	57%	64%

*Percentage of countries that submitted supply plan updates to GHSC-PSM
**Does not include DPS countires.

Indicator Performance



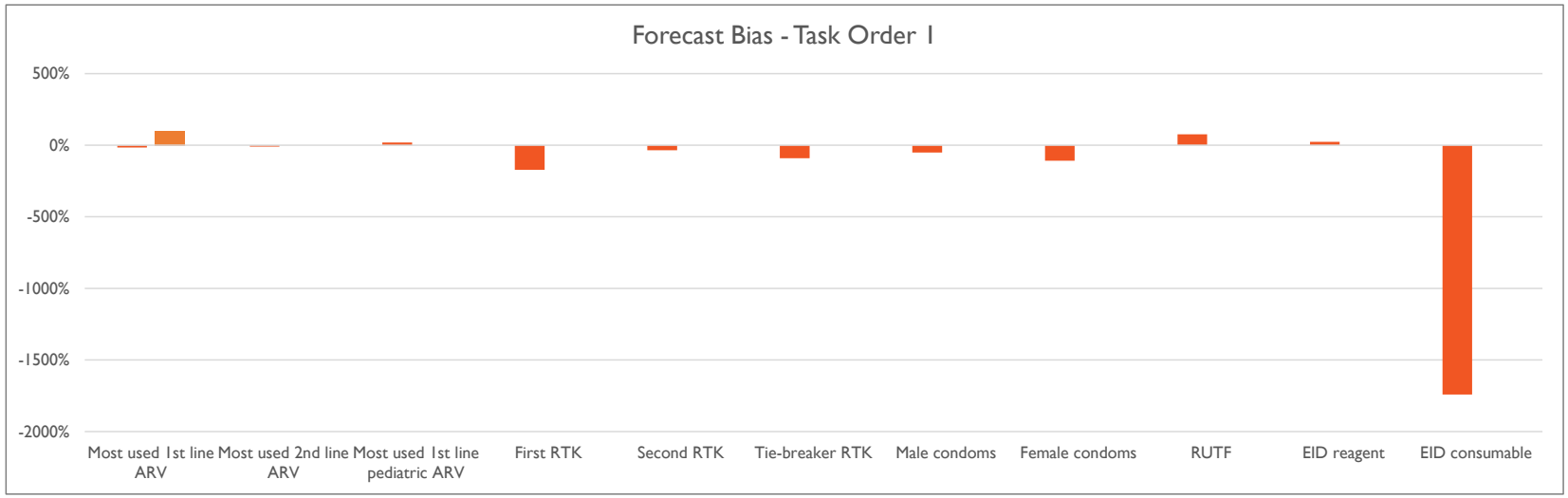
Other Comments

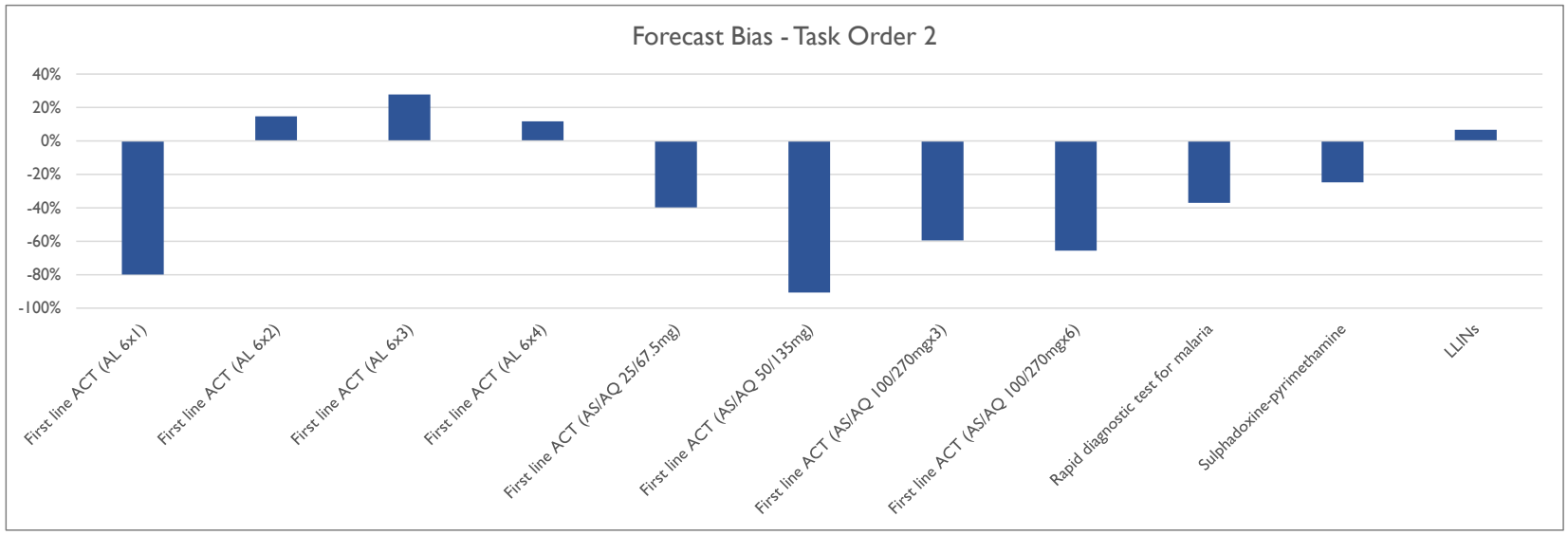
- The denominator for each task order is based on the number of countries where (1) the countries have bought into the particular task order and (2) GHSC-PSM has a field office (TO1: 22, TO2: 19, TO3: 17, and TO4: 11). This includes countries that have not started reporting regular M&E data but are regularly procuring commodities (Botswana, Burma, Cambodia, Central America Region,Guinea, Indonesia, RDMA [Laos, Thailand], and South Sudan). Namibia has received M&E TWG approval to be excluded from this indicator as the GHSC-PSM does not procure commodities and supply plans are not shared.
- DPS countries are countries that order commodities where the USAID mission has not bought into the GHSC-PSM single award, or countries that have bought into the single award but have limited commodity funding, field presence and staff (DSP: 10). The denominator for DPS countries for this indicator does not include countries where GHSC-PSM has facilitated a one-off procurement or where procurement is not sufficient to warrant a supply plan.

B12. Absolute Percent Consumption Forecast Error

Measure Definition

Numerator: Absolute value of the difference between the actual quantities of products consumed at SDPs during period minus the forecasted consumption. **Denominator:** Sum of the actual quantities of products consumed. **Variants: Forecast Bias** (Calculated using the actual value of the difference between quantities forecasted and quantities consumed at or issued to the SDPs) and **Mean Absolute Percent Error** (MAPE - average absolute percent error over one fiscal year).

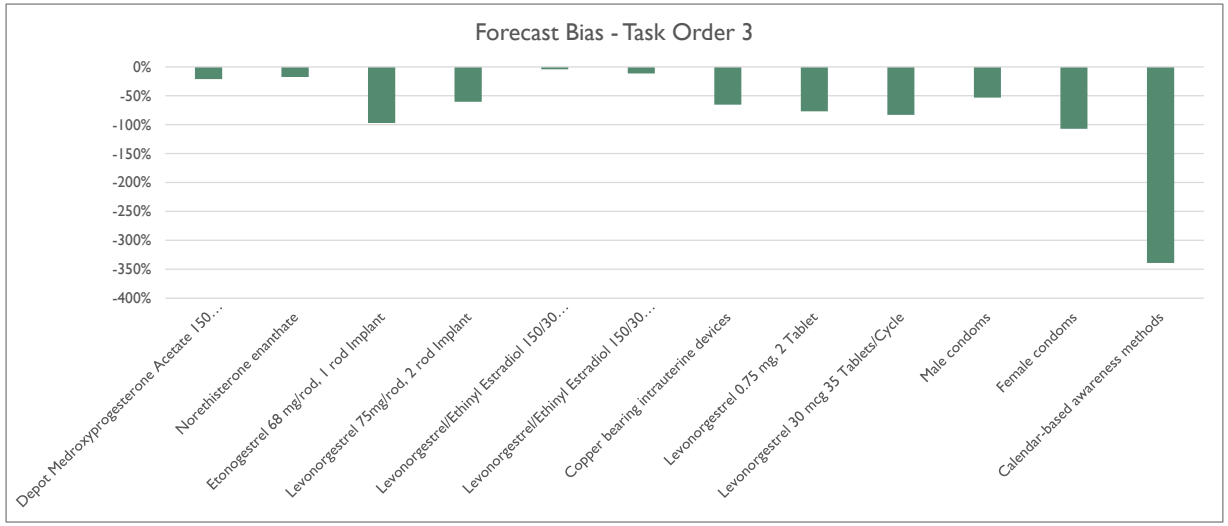


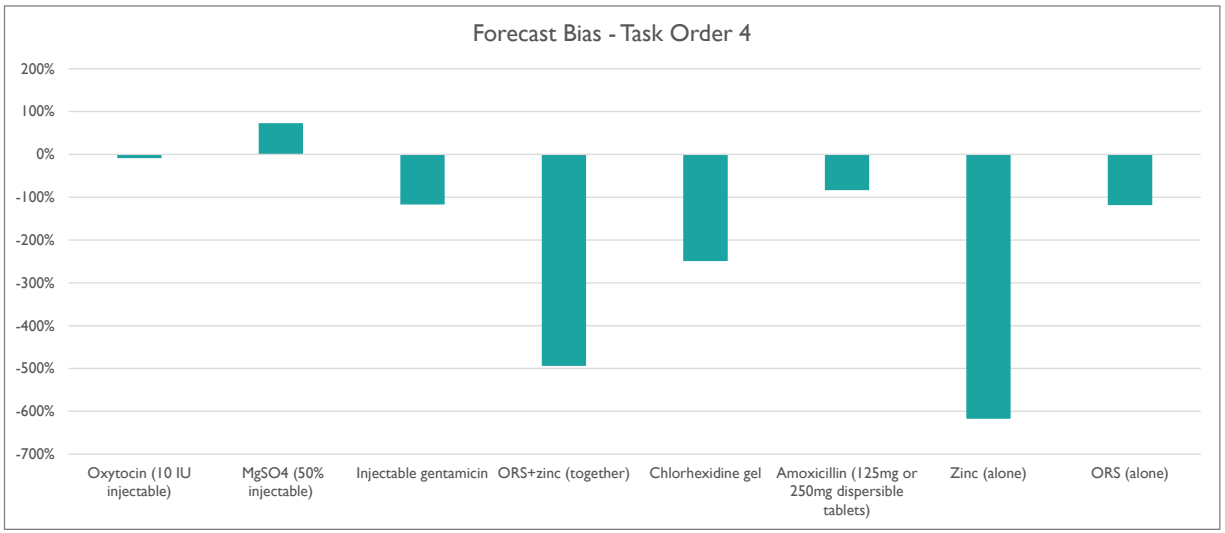


B12. Absolute Percent Consumption Forecast Error

Measure Definition

Numerator: Value of the differences between the actual quantities consumend or issued to SDPs during the period minus the forecasted values. **Denominator:** Sum of the actual quantities desired to be delivered. Variants: Forecast Bias (Calculated using the actual value of the difference between quantities forecasted and quantities consumed at or issued to the SDPs).





C1. Number of innovations that were developed, implemented, or introduced and are related to health commodity market or supply chain best practices of shipments delivered on time in full, within the customer-specified delivery window

Measure Definition

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

Task Order	Annual Target	Achievement	
		FY 2017 Q3	Year to Date
TO1	N/A	1	2
TO2	N/A	1	3
TO3	N/A	1	1
TO4	N/A		
Cross-cutting	N/A	1	3
All TOs	N/A	4	9

Description of Innovation		
Country	Type of Innovation	Brief Description
TO1		
Cameroon	New Approach	With support from the HIV/AIDS task order, Cameroon adopted a push distribution approach for ARVs in the Centre region. The Centre region generally had poor onsite delivery rates from the regional warehouse to health facilities, and poor quality and on-time requisitions from health facilities to the regional warehouse. In an attempt to solve this problem, the region team is trying a new approach which involves packing medicines in a delivery van and moving from health facility to health facility on a particular axis. At each health facility, the team works with health facility staff to determine their needs through on-the-job capacity building. Required HIV commodities are then supplied and the team moves on to the next facility. This new approach combines building onsite capacity of staff with ensuring a
TO2		
Ghana	New Approach	GHSC-PSM began using private sector distribution companies to distribute long-lasting insecticide-treated nets (LLINs) for Ghana's nationwide school-based distribution campaign. DHL Global Forwarding, Imperial Health Sciences Ghana Limited, Movis Ghana Limited, and Nexus Excel Log were awarded fixed-price contracts to distribute LLINs to 23,000 schools nationwide. The introduction of private sector vendors eliminates the risk associated with previous options, and teachers no longer are burdened with the task of transporting LLINs to their schools for distribution.
TO3		
Pakistan	New Technology	The field office team prioritized developing simplified and user-friendly LMIS systems. Under the reproductive health task order, the Pakistan team help develop a stock sufficiency dashboard for use by provincial governments and other supply chain stakeholders to optimize reproductive health commodity stock management. The new dashboard assists in reviewing reproductive health commodity stock sufficiency from the central to the SDP level and automates monthly stock analysis — a process that was previously conducted manually. Typically, comprehensive reports are run on a quarterly cycle to coincide with complete and up-to-date contraceptive LMIS data at all levels. As a result of this innovation, Pakistan's contraceptive LMIS has been enhanced and decision-makers across system levels can more easily monitor reproductive health stock status. Over the coming months, GHSC-PSM
Cross-cutting		
Mozambique	New Approach	GHSC-PSM worked with four 3PL transport subcontractors to take fuel cost into account to limit the risks of fuel price volatility in Mozambique. This crosscutting innovation will allow a defined percentage of the transport cost to be adjusted as needed following the official fuel (diesel) price defined by the government

C2. Number of People Trained by supply chain functional area and sex

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 the different categories of participants (e.g., physicians, nurses, social workers).

Task Order	Annual Target	Achievement FY 2017 Q3	Achievement Year to Date
TO1	N/A	680	1141
TO2	N/A	430	580
TO3	N/A	0	
TO4	N/A	0	
Multiple TOs	N/A	2872	4549
All TOs	N/A	3982	6270

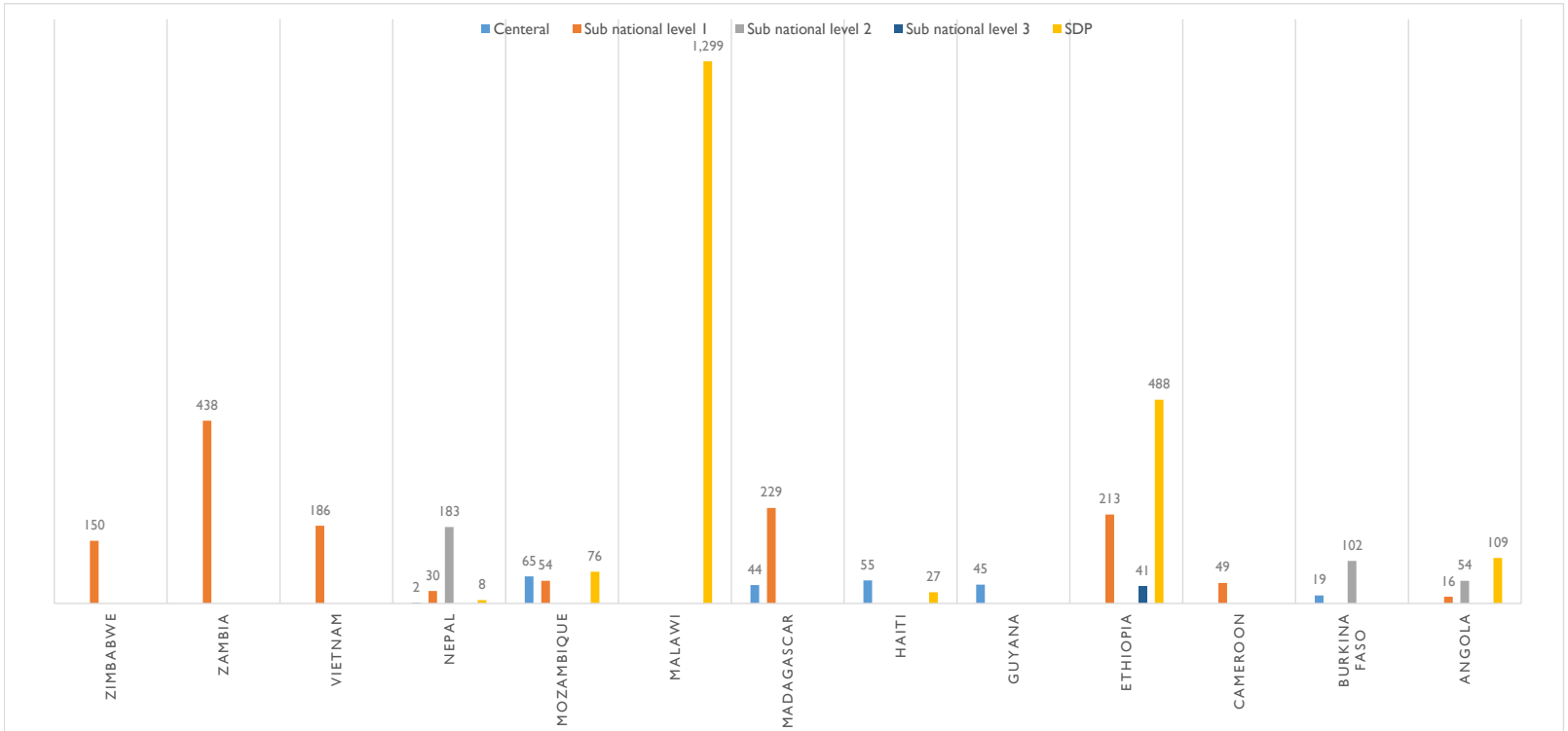
Indicator Performance

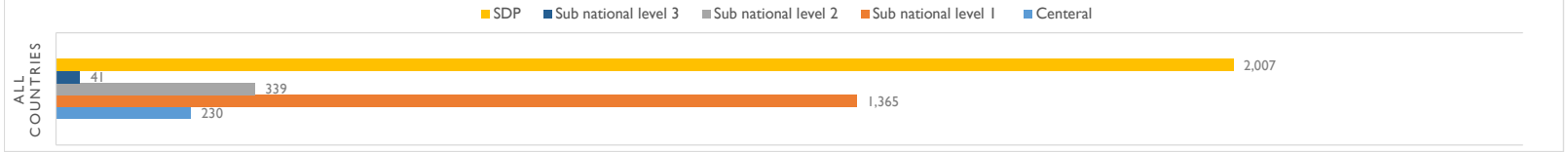
	C2. Number of People Trained	Central	Sub-National Level 1	Sub-National Level 2	Sub-National Level 3	SDP
HIV	Task Order 1					
	Forecasting and Supply Planning	8	186			
	Procurement					
	Quality Assurance					
	Warehousing and Inventory Management	45				137
	Transportation and Distribution					
	MIS		21			
	Governance and Financing					
	Human Resources and Capacity Development		252			
	Monitoring and Evaluation		28			3
	Strategy and Planning					
Malaria	Task Order 2					
	Forecasting and Supply Planning					4
	Procurement					
	Quality Assurance					
	Warehousing and Inventory Management		16	54		
	Transportation and Distribution					
	MIS	19		102		
	Governance and Financing					
	Human Resources and Capacity Development		133			
	Monitoring and Evaluation					102
	Strategy and Planning					
PRH	Task Order 3					
	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					

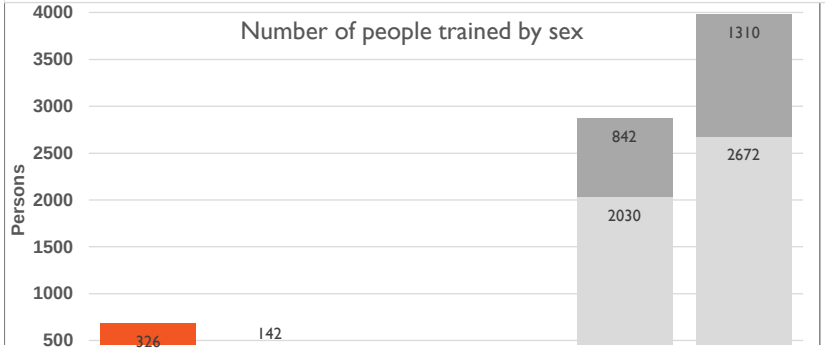
	C2. Number of People Trained	Central	Sub-National Level 1	Sub-National Level 2	Sub-National Level 3	SDP
MCH	Task Order 4					
	Forecasting and Supply Planning					
	Procurement					
	Quality Assurance					
	Warehousing and Inventory Management					
	Transportation and Distribution					
	MIS					
	Governance and Financing					
	Human Resources and Capacity Development					
	Monitoring and Evaluation					
	Strategy and Planning					
Multiple TOs	Multiple					
	Forecasting and Supply Planning					
	Procurement	55	21	114		3
	Quality Assurance					
	Warehousing and Inventory Management	17	438	69	23	1304
	Transportation and Distribution	21				
	MIS	14	152			76
	Governance and Financing		24			378
	Human Resources and Capacity Development		53			
	Monitoring and Evaluation	47			18	
	Strategy and Planning	4	41			

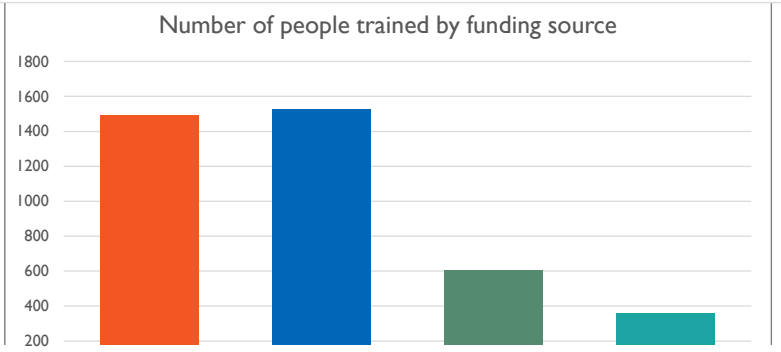
Data Notes
N/A

C2. Number of People Trained by Task Order, by Country, Sex and Funding Source









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.

Indicator Performance

Task Order	Country	Supply Chain Level	Site of Loss	Total value of Loss (USD)	Loss denominator (USD)	Loss Percentage
TO1	RDC	Global	Storage	350	35,752,381	0.001%
TO1	Haiti	Central	Storage	117,299	10,291,280	1.1%
TO1	Nigeria	Central	Storage	78,471	*Not available*	*Not available*
TO1	Vietnam	Central	Storage	74,120	4,665,808	1.6%

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.
- There were no expiries of TO2 or TO3 products reported this quarter.

C7b. Percentage of product lost due to theft, damage, and 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.

Indicator Performance

Task Order	Country	Supply Chain Level	Site of Loss	Type of loss	Total value of Loss (USD)	Loss denominator (USD)	Loss Percentage
TO1	Nigeria	Global	Transit	Damage	413	6,388,071	0.006%
[redacted]							
TO1	Vietnem	Global	Transit	Damage	122	3,232,740	0.004%
TO1	Cameroon	Global	Transit	Damage	10,650	435,136	2.4%
TO1	Nigeria	Central	Transit	Damage	4,015	*Not available*	*Not available*
TO1	Zimbabwe	Central	Storage	Other	16,070	1,372,203	1.2%
TO2	Burma	Global	Transit	Other	3,900	596,250	0.7%
TO2	Madagascar	Global	Transit	Other	10,584	1,508,335	0.7%
TO2	Mozambique	Subnational 1	Storage	Other	5,874	119,216	4.9%
TO2	Nigeria	Central	Storage	Damage	19,388	*Not available*	*Not available*
[redacted]							
TO2	Nigeria	Subnational 1	Transit	Other	2,333	*Not available*	*Not available*
TO2	Tanzania	Global	Transit	Other	12,269	1,296,362	0.9%

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.
- There were no losses of TO3 products reported this quarter.

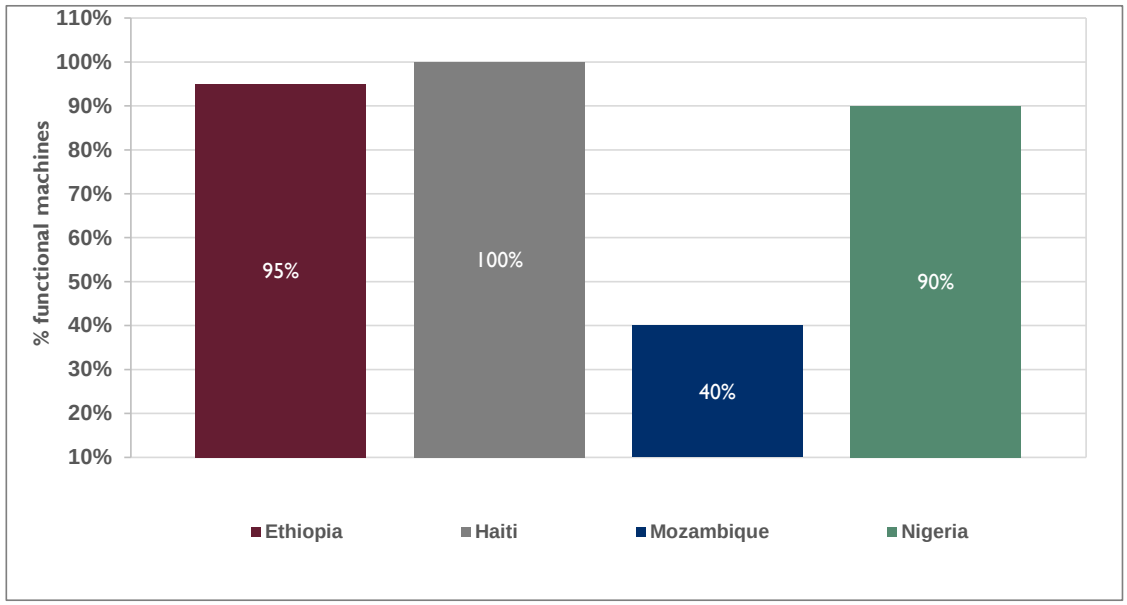
C10. Percentage of GHSC-PSM-procured molecular instruments that remained functional during the reporting period

Measure Definition

Numerator: Total number of molecular instruments that remained functional for the entire reporting period.
Denominator: Total number of molecular instruments.

	Target	Achievement FY 2017 Q3	Achievement Year to Date
TO1	N/A	89%	83%

Indicator Performance



Data Notes

- N/A

D. Denominator Annex

Countries	Angola GHSC-PSM-supported	Burkina Faso GHSC-PSM-supported	Cameroon GHSC-PSM-supported	Cameroon non-GHSC-PSM-supported	Ethiopia GHSC-PSM-supported	Ghana GHSC-PSM-supported	Guyana non-GHSC-PSM-supported	Haiti GHSC-PSM-supported	Lesotho GHSC-PSM-supported	Madagascar GHSC-PSM-supported	Malawi GHSC-PSM-supported	Mozambique GHSC-PSM-supported	Namibia GHSC-PSM-supported	Nigeria GHSC-PSM-supported	Pakistan GHSC-PSM-supported	Rwanda GHSC-PSM-supported	Uganda GHSC-PSM-supported	Zambia GHSC-PSM-supported	*Nepal GHSC-PSM-non-supported	*Zimbabwe GHSC-PSM-supported
B1. Stockout rate at service delivery points																				
Tracer Products																				
First-line adult ARVs	9		50	128	1070	56	19	86	120			1149	48	2713		310	##	347		###
Second-line adult ARVs	9		50	74	138	49	17	86	116			335	48	510		353	##	347		###
First-line pediatric ARVs	9		49	73	750		13	86	108			903	48	869		328	##	347		###
First RTKs	9		43		209	117		86	97				48	3422		292	##	###		###
Second RTKs	9		42		177	76		86	96				48	2785		250	##	###		###
Tie-Breaker RTKs					73				82				48	1471			##			###
Male condoms	9		43		669	116		##	54				17	1276		408		###		###
Female condoms	9		43						45				17	928		61		###		###
Ready-to-use therapeutic food (RUTF)					521				92											
EID reagents					19				1			5		21		6		11		
EID consumables					96							5		23		6				
Viral load reagents					19				2			8		23		9		11		
Viral load consumables					19							8		23		9				
First-line ACTs (AL 6X1)	5	###			556						563			3359		198		###		###
First-line ACTs (AL 6X2)	5	###			531						560			3165		172		###		###
First-line ACTs (AL 6X3)	5				524						544			3248		261		###		###
First-line ACTs (AL 6X4)	5				514	100					560			2891		298		###		###
AL inability to treat	5	###			704									3441		298		###		
First-line ACTs (AS/AQ 25/67.5mg)	5					102				1876				3025						
First-line ACTs (AS/AQ 50/135mg)	5					102				1876				3014						
First-line ACTs (AS/AQ 100/270mgx3)	5	###								1876				2992						
First-line ACTs (AS/AQ 100/270mgx6)	5	###								1876				2948						
Rapid diagnostic tests for malaria	5	###			237	113				1876	552			3342		157	##	###		###
Sulphadoxine-pyrimethamine (SP)	5	###				114				1395	301			3029			##	###		734
LLINs		###								1393				2315						
Injectable Contraceptives					1123	113		##		1748	498			1280	####	308	86	###	###	
Depot Medroxyprogesterone Acetate 104 mg/0.65mL, Subcutaneous																				
Depot Medroxyprogesterone Acetate 150 mg Vial, Intramuscular					1123	113		##		1748	498			1278	####	308	86	###	###	
Norethisterone enanthate														1258				###		
Implantable contraceptives					878	106		##		1748				493		500		###	###	
Etonogestrel 68 mg/rod, 1 rod Implant					838					1748	394			482		190		###		
Levonorgestrel 75mg/rod, 2 rod Implant					633	106		##			410			427		249		###	###	
Combined oral contraceptives					985	111		##		1748	500			1259	####	316		###	###	
Levonorgestrel/Ethinyl Estradiol 150/30 mcg + Fe 75 mg, 28 Tablets/Cycle					985	111		##		1748					####			###	###	
Levonorgestrel/Ethinyl Estradiol 150/30 mcg 28 Tablets/Cycle											500			1259		316				
Emergency oral contraceptives					985						221				8969					
Levonorgestrel 0.75 mg Tablet					985						221				8969					
Levonorgestrel 1.5 mg Tablet																				
Progestin only pills					558					1748	360				8969	269		###		
Levonorgestrel 30 mcg 35 Tablets /cycle					558					1748	360				8969	269		###		
Copper-bearing intrauterine devices					789			##		1748	121			283	8969	95		###		
Calendar-based awareness methods								##		1748						75				
Male condoms					669	116		##		1748	476			1276	####	408		###	###	
Female condoms										1748	239			928		61		###		
Oxytocin (10 IU injectable)					282					1754	406					429		###	###	
MgSO4 (50% injectable)					229					1754	303					17		###	###	
Injectable gentamicin					66					1754	535							###	###	
ORS+zinc (together)					75															
Chlorhexidine gel					14													###	###	
Amoxicillin (125mg or 250mg dispersible tablets)					129						377					124		###	###	
Zinc (alone)											254					174		###	###	
ORS (alone)											337					508		###	###	
PCV vaccine										1753										

D. Denominator Annex

																						B6 only								
Countries	Angola	Burkina Faso	Burundi	Cameroon	Ethiopia	Ghana	Guyana	Haiti	Lesotho	Liberia	Madagascar	Malawi	Mozambique	Namibia	Nigeria	Pakistan	Rwanda	Uganda	Vietnam	Zambia	*Nepal	*Zimbabwe	Botswana	Burma	Cambodia	Central America Region	Guinea	Indonesia	RDMA	South Sudan
B2. Stocked according to plan																														
Task Order 1	144		59	60	148	153	6	36	33				252	26	8		110	36	4	9		8								
Task Order 2	570	8	293		91	220					12413	12	252		10		92	21		6		6								
Task Order 3	513		8		144	176		36			14089	18	288			1394	177	21		9	468									
Task Order 4					106						7015	12	252				76			6	380									
B3. LMIS reporting rate																														
Task Order 1 - supported	9			65	1570			149	122				1287	54	3868		565			1953		1744								
Task Order 2 - supported	10	2123			1570						2649	653			3550		565			2125		1684								
Task Order 3 - supported					1570			222			2649	653			1599	14645	565			2125										
Task Order 4 - supported					1507						2649	653					565			2125										
Task Order 1 - non-supported				88			22																							
Task Order 2 - non-supported																														
Task Order 3 - non-supported																					4105									
Task Order 4 - non-supported																					4105									

B6. Supply plan updates																														
Task Order 1	1		1	1	1	1	1	1	1			1	1		1		1	1	1	1		1	1	1	1	1		1		1
Task Order 2	1	1	1		1	1				1	1	1	1		1		1	1		1		1		1	1		1		1	1
Task Order 3	1		1		1	1		1		1	1	1	1		1	1	1	1		1	1					1				1
Task Order 4					1					1	1	1	1		1	1	1			1	1					1				

D. Denominator Annex

B12: MEAN ABSOLUTE PERCENT ERROR (CONSUMPTION FORECAST)- *and* APE AND FORECAST BIAS*

Tracer Product	Quarter 3	
	Forecasted Consumption	Actual Consumption
HIV/AIDS Tracers		
Most used first-line adult ARV	6953688	6006337
Most used second-line adult ARV	236608	214530
Most used first-line pediatric ARV	504497	621147
First RTK	249600	91993
Second RTK	40222	29813
Tie-breaker RTK	3994	2098
EID consumable	2781	151
EID reagent	1310	1721
Viral load consumable	655	504
Viral load reagent	6503	5856
Male condoms	38425977	25544240
Female condoms	1255407	600363
Ready to Use Therapeutic Foods (RUTF)	7664	31908
Malaria Tracers		
Malaria-First line ACT (AL 6x1)	4463765	2480482
Malaria-First line ACT (AL 6x2)	2158221	2532686
Malaria-First line ACT (AL 6x3)	1768687	2449048
Malaria-First line ACT (AL 6x4)	4300509	4874742
Malaria-First line ACT (AS/AQ 100/270mgx3)	500789	313899
Malaria-First line ACT (AS/AQ 100/270mgx6)	712412	430186
Malaria-First line ACT (AS/AQ 25/67.5mg)	149354	106850
Malaria-First line ACT (AS/AQ 50/135mg)	563938	295852
Rapid Diagnostic Tests (RDTs)	22649139	16526872
Sulphadoxine-pyrimethamine (SP)	4813030	3858540
LLINs	689529	738637
PRH Tracers		
Copper-bearing intrauterine devices	369850	223933
Male condoms	58143215	37960934
Female condoms	1232103	594558
Calendar-based awareness methods	5010	1141
Depot Medroxyprogesterone Acetate 104 mg/0.65 mL, Uniject SC Pre-Filled Syringe, SR		
Depot Medroxyprogesterone Acetate 150 mg Vial, SR	4555421	3762010
Etonogestrel 68 mg/rod, 1 rod Implant	260510	132313
Levonorgestrel 0.75 mg, 2 Tablet	79327	44818
Levonorgestrel 1.5 mg, 1 Tablet		
Levonorgestrel 30 mcg 35 Tablets/Cycle	658019	359564
Levonorgestrel 75mg/rod, 2 rod Implant	157468	98314
Levonorgestrel/Ethinyl Estradiol 150/30 mcg + Fe 75 mg, 28 Tablets/Cycle	2427882	2328190
Levonorgestrel/Ethinyl Estradiol 150/30 mcg 28 Tablets/Cycle	120000	107881
Norethisterone enanthate	95496	81300
MCH Tracers		
Oxytocin (10 I.U. injectable)	1655497	1523767
MgSO4 (50% injectable)	165082	611572
Injectable gentamicin	1453622	670530
ORS+zinc (together)	50894	8568
Chlorhexidine gel	550218	157549
Amoxicillin	1637458	891982
Zinc (alone)	6483279	903799
ORS (alone)	599835	274773
PCV vaccine		

USAID GLOBAL HEALTH SUPPLY CHAIN PROGRAM

Procurement and Supply Management

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