

**USAID GLOBAL HEALTH  
SUPPLY CHAIN PROGRAM**  
Procurement and Supply Management



FISCAL YEAR 2023

QUARTERLY REPORT | QUARTER 2  
JANUARY 1, 2023, TO MARCH 31, 2023



FISCAL YEAR 2023

**QUARTERLY REPORT**

**January 1, 2023, to March 31, 2023**

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The USAID Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project is funded under USAID Contract No. AID-OAA-I-15-00004. GHSC-PSM connects technical solutions and proven commercial processes to promote efficient and cost-effective health supply chains worldwide. Our goal is to ensure uninterrupted supplies of health commodities to save lives and create a healthier future for all. The project purchases and delivers health commodities, offers comprehensive technical assistance to strengthen national supply chain systems and provides global supply chain leadership.

GHSC-PSM is implemented by Chemonics International, in collaboration with Arbola Inc., Axios International Inc., IDA Foundation, IBM, IntraHealth International, Kuehne + Nagel Inc., McKinsey & Company, Panagora Group, Population Services International, SGS Nederland B.V., and University Research Co., LLC. To learn more, visit [ghsupplychain.org](http://ghsupplychain.org).

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## ACRONYMS

3HP	isoniazid and rifapentine (combination treatment for tuberculosis preventive therapy)
3PL	third-party logistics
ABC	activity-based costing
ABC/3TC/DTG	abacavir/lamivudine/dolutegravir
ABM	activity-based management
ACT	artemisinin-based combination therapy
AI	artesunate injectable
AIDC	automatic identification and data capture
AL	artemether-lumefantrine
AMF	Against Malaria Foundation
API	active pharmaceutical ingredient
ARPA	American Rescue Plan Act

ART	antiretroviral therapy
ARV	antiretroviral
BHA	Bureau of Humanitarian Assistance
BMGF	Bill & Melinda Gates Foundation
CAB-LA	cabotegravir
CHAI	Clinton Health Access Initiative
CHTF	Child Health Task Force
CMS	central medical store
CAPA	corrective and preventive action
COC	certificate of conformance
COE	center of excellence
CO2	carbon dioxide

COP	country operational plan
COVID-19	novel coronavirus
CPAP	continuous positive airway pressure
CR	change request
CSC	customer service center
CSI	Contraceptive Security Indicator
DAP	Delivered at Place
DBS	dried blood spot
DCP	decentralized procurement
DDP	Delivered Duty Paid
DHAPP	Department of Defense HIV/AIDS Prevention Program

DHIS2	District Health Information Software 2
DNO	diagnostic network optimization
DRC	Democratic Republic of the Congo
DRS	Regional Health Directorate
DTG	dolutegravir
EID	early infant diagnosis
eLMIS	electronic logistics management information system
ENAP	Every Newborn Action Plan
EPI	Expanded Program on Immunization
EPSS	Ethiopian Pharmaceuticals Supply Service
EUV	end-use verification
FASP	forecasting and supply planning

FDC	fixed-dose combination
FP/RH	family planning/reproductive health
FY	fiscal year
GDSN	Global Data Synchronization Network
GHS	Ghana Health Service
GHSC-PSM	USAID Global Health Supply Chain Program-Procurement and Supply Management project
GHSC-QA	USAID Global Health Supply Chain Program-Quality Assurance project
GHSC-RTK	USAID Global Health Supply Chain Program-Rapid Test Kit project
GHSC-TA	USAID Global Health Supply Chain Program-Technical Assistance project
GIS	geographic information system
GTIN	Global Trade Item Number
HDP	hypertensive disorders of pregnancy

HRP2/3	Pf histidine-rich protein
HSSP	health sector strategic plan
IAPHL	International Association of Public Health Logisticians
IDIQ	indefinite delivery, indefinite quantity
IFUs	instructions for use
IMNHC	International Maternal Newborn Health Conference
I2I	Innovation to Impact
IT	information technology
ITN	insecticide-treated net
IUD	intrauterine device
JMS	Joint Medical Store
KPI	key performance indicator

KSM	key starting material
LAC	Latin America and the Caribbean
LLIN	long-lasting insecticide-treated net
LMIS	logistics management information system
LOX	liquid oxygen
LQAG	LLIN Quality Assurance Group
MCH	maternal and child health
mCPR	modern contraceptive prevalence
MEDS	Mission for Essential Drugs and Supplies
MHSC	Maternal Health Supplies Caucus
MIS	management information system
MMD	multi-month dispensing

MMV	Medicines for Malaria Venture
MNCH	maternal, newborn, and child health
MOH	Ministry of Health
MOHCC	Ministry of Health and Child Care
MOSAIC	Maximizing Options to Advance Informed Choice for HIV Prevention
MPA-IM	medroxyprogesterone acetate-intramuscular
mRDT	malaria rapid diagnostic test
MSF	Médecins Sans Frontières
MTaPS	Medicines, Technologies and Pharmaceutical Services
NPC	National Product Catalog
NMCP	National Malaria Control Program
NSCA	National Supply Chain Assessment



OOS	out-of-specification
OPSANTE	Outil de Suivi des Produits de Sante
OTD	on-time delivery
OTIF	on-time, in-full delivery
P&L	profit and loss
PBO	piperonyl butoxide
PCR	polymerase chain reaction
PCMT	Product Catalog Management Tool
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
pLDH	parasite lactate dehydrogenase
PLHIV	people living with HIV
PMI	U.S. President's Malaria Initiative

PO	purchase order
PPE	personal protective equipment
PPH	postpartum hemorrhage
PPMRm	Procurement Planning and Monitoring Report for malaria
PQ	prequalification
PQM+	Promoting the Quality of Medicines Plus
PrEP	pre-exposure prophylaxis
PSA	pressure swing adsorption
PSBI	possible serious bacterial infection
Q	quarter
QA	quality assurance
QAMT	quality assurance method transfer

QAT	Quantification Analytics Tool
QC	quality control
RAS	rectal artesunate suppository
RBC	Rwanda Biomedical Center
RDC	regional distribution center
RFP	request for proposal
RHSC	Reproductive Health Supplies Coalition
RMS	Regional Medical Stores
RO	requisition order
RTK	rapid test kit
SCM	supply chain management

SCMD	Supply Chain Management Department
SDP	service delivery point
SIGLUS	Information and Logistics Management System for Health Units (Sistema de Informação e Gestão de Logística para Unidades Sanitárias)
SIMAM	Medicines and Medical Articles Information System (Sistema de Informação de Medicamentos e Artigos Médicos)
SMO	social marketing organization
SOP	standard operating procedure
SP	sulphadoxine-pyrimethamine
SPAQ	sulphadoxine-pyrimethamine + amodiaquine
SSA	semi-synthetic artemisinin
SSNB	small and sick newborn

SSWG	Systems Strengthening Working Group
SUMEVE	Single System for Monitoring and Evaluation of HIV Epidemiological Surveillance
TA	technical assistance
TB	tuberculosis
TE	tenofovir/emtricitabine
TL	tenofovir/lamivudine
TLD	tenofovir/lamivudine/dolutegravir
TO	task order
TPT	TB preventive treatment
TWG	technical working group
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund

USAID	United States Agency for International Development
USG	U.S. Government
VAN	Global Family Planning Visibility and Analytics Network
VL/EID	viral load/early infant diagnosis
VMI	vendor-managed inventory
VMMC	voluntary medical male circumcision
VMS	vendor-managed solutions
WFD	workforce development
WHO	World Health Organization
WMS	warehouse management system
ZAMMSA	Zambian Medicines and Medical Supply Agency

# EXECUTIVE SUMMARY

The USAID Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project, funded by the U.S. Agency for International Development (USAID), is pleased to present this report summarizing our work and performance for quarter 2 (Q2) fiscal year 2023 (FY 2023). The project provides lifesaving medicines and other health commodities. GHSC-PSM builds efficient, reliable, and cost-effective supply chains to deliver these drugs and health supplies for the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), the U.S. President's Malaria Initiative (PMI), USAID's programs in voluntary family planning and reproductive health (FP/RH), and the Agency's program in maternal, newborn, and child health (MNCH), which share the cost of the project. USAID's response to the novel coronavirus (COVID-19) is also described in this report.

**GHSC-PSM Life of Project Fast Facts**

- Delivered **16 million patient-years of tenofovir/lamivudine/dolutegravir (TLD) treatment**
- Delivered **501 million antimalarials to treat infections**
- Delivered enough contraceptives to provide an estimated **94.4 million couple-years** of protection, when combined with proper counseling and correct use
- Procured a total of over **\$27.8 million in maternal, newborn, and child health (MNCH) commodities**
- Supported **45 countries** with technical assistance
- Saved \$77.4 million on warehousing, strategic packaging, and logistics
- Saved \$647 million on commodity procurement

## Q2 PERFORMANCE AND PROGRESS HIGHLIGHTS

GHSC-PSM continues to maintain high global supply chain performance and to make progress in deploying transformative supply chain solutions while laying a strong foundation for a successful transition to USAID Next Generation Global Health Supply Chain (NextGen) projects.

In Q2, the project achieved its 19th consecutive quarter of on-time delivery (OTD) over the 80 percent target by leveraging the strength of its existing mechanism while introducing and expanding on approaches to logistics management. (See section CI.)

Beyond the global supply chain, GHSC-PSM is building the capacity of host countries and local institutions toward managing their own supply chains and contributing to USAID’s goal of fostering sustainability. By promoting sound management and strong governance the project assists organizations in fulfilling their missions. To that end, the project works to cultivate pools of skilled global and local personnel to oversee critical supply chain elements and to establish management frameworks to facilitate strategic oversight. For example, in Q2:

- GHSC-PSM delivered its annual Introduction to Supply Chain Management course to 27 USAID headquarters (HQ) and Mission staff to prepare them for their roles in supporting in-country and international stakeholders in promoting commodity security. (See section C2.)
- In Botswana, GHSC-PSM seconded a contracts management advisor to the central medical store (CMS) to build the skills of its Contract Management Unit in contract management. The advisor is implementing several initiatives to strengthen contract management capacity in the CMS. An effective contract management unit is crucial to ensuring prudent resource use and to maintaining a continuous supply of health commodities. (See section B1.)
- The project included key performance indicators (KPIs) in its third-party logistics (3PL) services contract with Joint Medical Store in Uganda, and worked with Angola and the Democratic Republic of Congo (DRC) to continue piloting a KPI dashboard. This is part of GHSC-PSM’s overall strategy of assisting countries in managing 3PL performance and minimizing risks by establishing mechanisms to record and track 3PL performance. (See section C2.)

GHSC-PSM is also called upon to assist countries to safely handle and dispose of unusable pharmaceutical and medical products. Working in collaboration with host-country governments and USAID, in Q2 the project engaged in initiatives in various countries to address disposal needs and to build a sustainable network for managing unusable pharmaceuticals. Under the GHSC-PSM Task Order 5, Afya Ugavi project in **Kenya**, GHSC-PSM collaborated with the Kenya Ministry of Health (MOH) to plan for and manage the safe destruction of expired COVID-19 vaccines. The project supported data validation teams in categorizing, counting, packaging, and sealing expired COVID-19 vaccines for collection. In the next phase, the team will execute a reverse logistics mop-up exercise to transport all the expired waste from depots to approved locations for destruction. In **Guinea**, GHSC-PSM worked with key stakeholders to develop an operational plan for procuring and managing eight incinerators to be donated by Global Fund as part of its COVID-19 response. The project will be responsible for implementing the plan. (See Annex A). In **Nigeria**, the project is working to properly dispose of liquid waste generated by government diagnostic laboratories. GHSC-PSM provided giant tanks for four polymerase chain reaction labs to temporarily store waste before a third-party environmental management solutions company transports it for treatment and safe disposal.

The project also began drafting a guide on waste disposal of expired commodities in preparation for transition and closeout.

GHSC-PSM shares evidence of new and promising practices from country offices and tools, knowledge, and learnings with the global community for its use and for achieving more significant impact. For example, the project published the technical report “Using a Data Science Approach to Build Timely, Sustainable,



Repeatable and User-centered Analysis to Drive Actions” that explores strengthening monitoring and evaluation processes through a data science approach to analytics. GHSC-PSM also joined Medicines, Technologies and Pharmaceutical Services (MTaPS), Promoting the Quality of Medicines Plus (PQM+), and other Child Health Task Force partners to publish “Call to Action: Improve Access and Use of Quality Medicines to Save Lives.” The project developed and published four adaptable analytic tools on GitHub™ for public use in an effort to promote sharing, adoption, and use of these tools beyond implementing countries.

While the project continues to engage in COVID-19 commodity procurement and technical assistance activities, in Q2, GHSC-PSM retired reporting COVID-impacted OTD and on-time in full (OTIF) data. Previously, these results were reported to provide insight into the extent to which COVID-19 disruptions were delaying global supply chain orders. COVID-related delays peaked in Q1 FY 2021 and although the pandemic continues to have a lagging impact, the scale has now declined to the point where COVID-19-impacted and standard OTD/OTIF are no longer meaningfully different. In the interest of streamlined reporting, the project will present only standard OTD/OTIF data from now on. Also, in Q2, at USAID’s direction, and in light of declining demand for personal protective equipment (PPE), GHSC-PSM retired the PPE stockpile and released the remaining PPE stock back to the supplier at no cost to the project. Similarly in Q2, GHSC-PSM depleted the remaining stock in the COVID-19 rapid test kit stockpile and at USAID’s direction, did not conduct a replenishment.

Looking forward, GHSC-PSM will continue to prioritize technical assistance activities that enable countries to lead their supply chain systems sustainably.

## TRANSITION PLANNING FOR NEXTGEN

In Q2, GHSC-PSM made strides in planning and preparing for the transition to USAID’s NextGen Global Health Supply Chain Suite of Programs. The GHSC-PSM Transition Management team continued to develop Country Transition Plan templates, to assist countries in drafting their contractual transition deliverables. For those GHSC-PSM countries that have already completed transition and closeout activities, the project facilitated after-action reviews to document lessons learned that were then shared across a wider project audience. The Transition Management team will continue to collect and share learnings and best practices as country and HQ teams transition their activities. The Transition Management team also hosts a global supply chain-focused Technical Working Group with USAID colleagues to further elaborate procurement-specific transition strategies, including stockpiling and supplier contract handover. Similarly, GHSC-PSM routinely hosts transition-focused meetings with USAID to coordinate transition planning and risk mitigation. Through these fora, Transition Management is advancing discussions on communication protocols and the process for country transition plan development.

GHSC-PSM also advanced preparations for an in-person Country Director Meeting taking place in May, where the predominant theme will be project transition and legacy. This meeting will feature presentations and in-depth discussions on the transition preparations of various teams across the project.

## GLOBAL SUPPLY CHAIN PERFORMANCE

Section C I describes GHSC-PSM's global supply chain procurement and logistics activities and achievements. Highlights of the project’s global supply chain performance in Q2 are below.

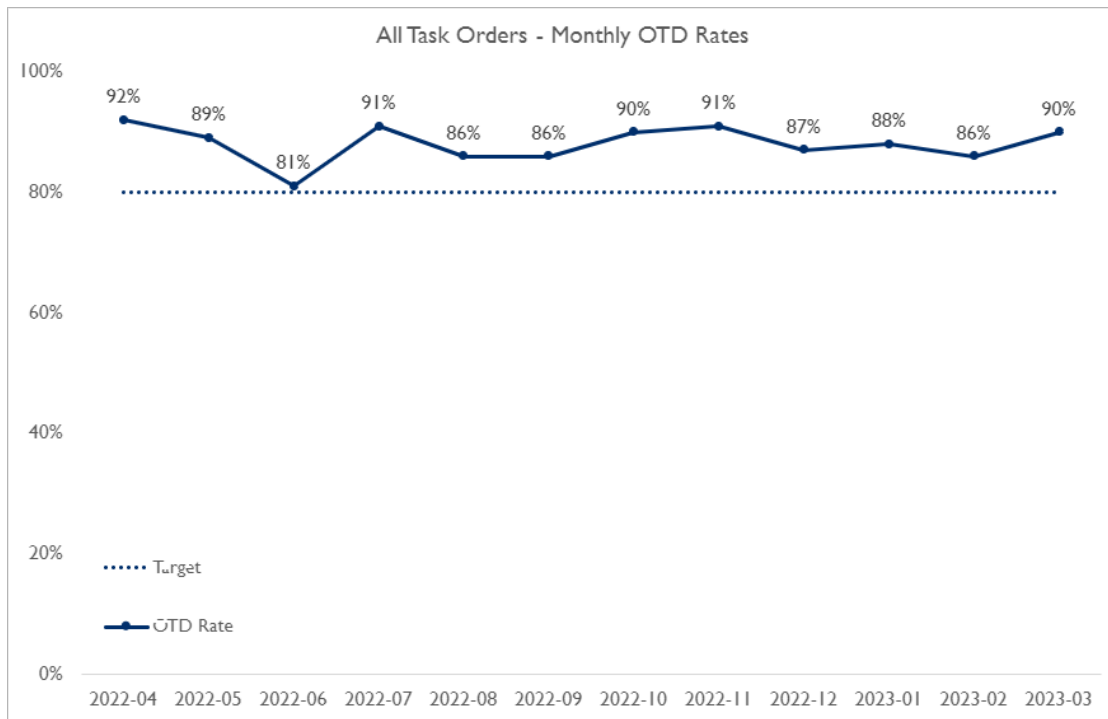
**Procured over \$162.5 million** in drugs, diagnostics, and health commodities in Q2, and over **\$5 billion** to date.

**Delivered over \$136 million** in drugs, diagnostics, and health commodities in Q2, and over **\$4.7 billion** to date.

Achieved OTD<sup>1</sup> of **88 percent** and **OTIF of 86 percent**.

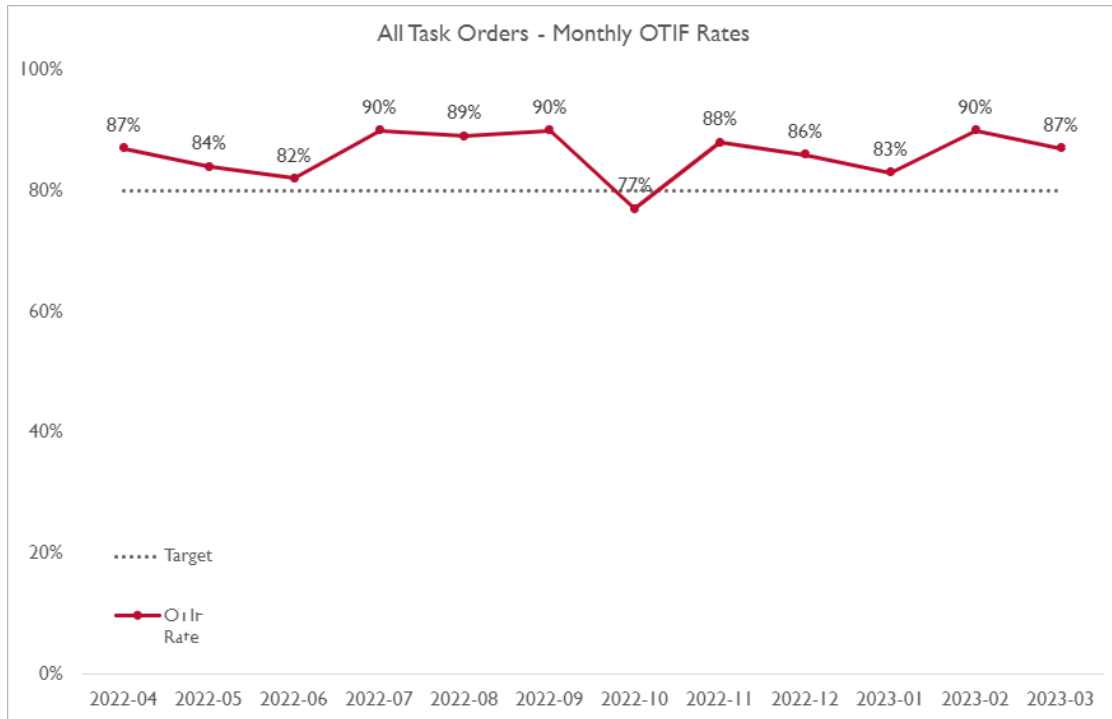
Additional delivery results, including OTIF, are discussed in each health area section.

Exhibit I. April 2022 through March 2023 Monthly Indefinite Delivery, Indefinite Quantity (IDIQ) OTD



<sup>1</sup> The project's delivery window is -14/+7 days. With this window, deliveries are considered on time if they are made within the period 14 days before or seven days after the agreed-to delivery date.

Exhibit 2. April 2022 through March 2023 Monthly IDIQ OTIF

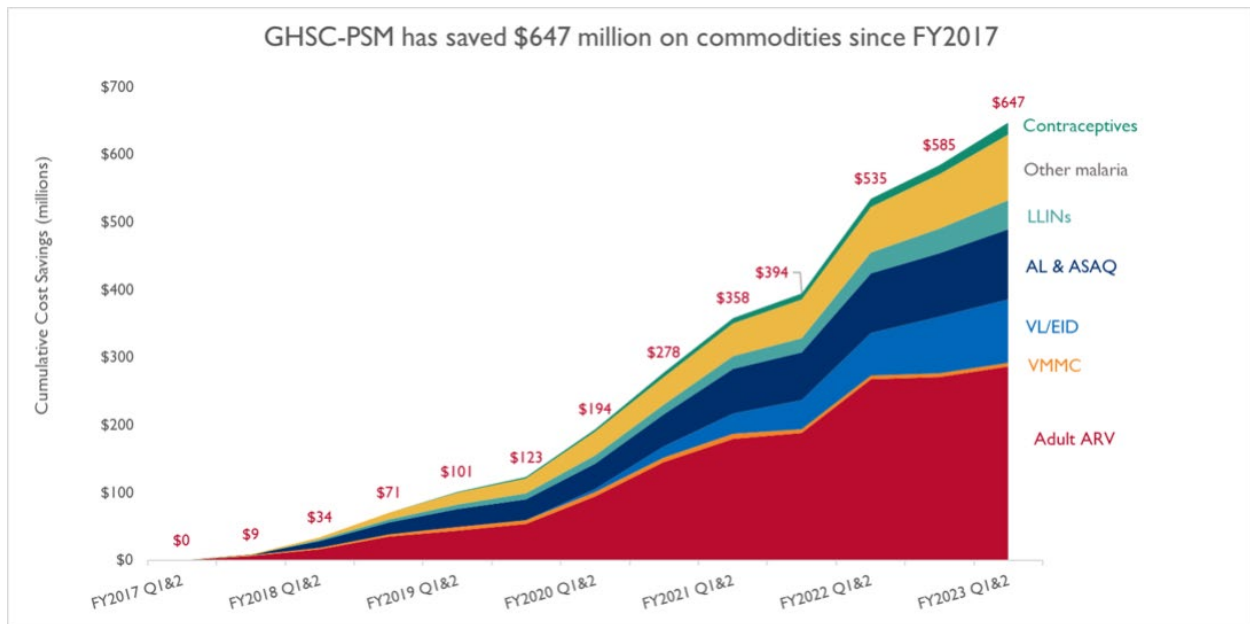


GHSC-PSM routinely conducts root-cause analyses of late deliveries to refine procurement and supply chain processes and to continuously improve performance.

### COST SAVINGS ON MEDICINES AND HEALTH COMMODITIES

GHSC-PSM conducts regular and detailed analysis to understand the markets for the medicines and health commodities it procures and to bring this knowledge to negotiations with suppliers. Through careful negotiation of long-term contracts with suppliers for major product groups, such as viral load testing, GHSC-PSM has saved \$647 million on commodities over the life of the project, as shown in Exhibit 3. In the first half of FY 2023, the project has saved \$62.5 million.

Exhibit 3. Life of Project Savings on Medicines and Health Commodities



To produce long-term value and sustainability, GHSC-PSM achieved these cost savings while working to ensure suppliers maintain their interest in the market and expanding the number of suppliers in many commodity categories, so the U.S. government (USG) can benefit from a competitive supplier base. Additional savings have also accrued as prices for commodities have risen more slowly than the general rate of inflation. This analysis is provided in Section C1b.

### COST SAVINGS ON LOGISTICS

GHSC-PSM saved \$4.1 million on logistics from Q1 through Q2 FY 2023 and \$77.4 million over the life of the project. Cost savings are realized through:

- Open competition in freight lanes
- Optimization of the regional distribution center network
- Strategic packing to reduce shipping costs

See section C1b. Global Supply Chain for details.

### HEALTH AREAS

GHSC-PSM provides procurement services and technical assistance to strengthen supply chains and promote global collaboration for the USG programs for HIV/AIDS, malaria, FP/RH, MNCH, and emerging health threats. Highlights from Q2 are provided below.

#### HIV/AIDS

GHSC-PSM has **delivered enough antiretroviral therapy to provide nearly 21 million patient-years of HIV treatment to date.**

This includes **16 million patient-years of TLD treatment delivered to date.**

In Q2, the project used HIV/AIDS funds to support PEPFAR's goal of controlling the HIV/AIDS epidemic by ensuring an uninterrupted supply of HIV/AIDS prevention, treatment, and viral load testing commodities at all levels, implementing technical assistance and systems strengthening initiatives to promote country ownership of the HIV/AIDS response, participating in global policy dialogues, creating and disseminating global resources, supporting health supply chain research, and modifying supply chain data tools to improve procurement, management, availability, and quality of health commodities.

**Achieving OTD and OTIF.** In Q2, the project continued to achieve OTD and OTIF above the target of 80 percent (87 percent OTD and 85 percent OTIF).

**Delivering pre-exposure prophylaxis (PrEP).** In Q2, GHSC-PSM delivered 1,638,545 bottles of PrEP products to 13 countries.<sup>2</sup> GHSC-PSM finalized the subcontract with the supplier of cabotegravir. This allows the project to begin procuring this injectable PrEP commodity in preparation for its introduction as directed in the PEPFAR FY 2024 (Country Operational Plan (COP)23) Technical Consideration for HIV Prevention Programming.

**Delivering condoms.** In Q2, GHSC-PSM delivered more than 100 million male condoms (33,000 cases) and more than 720,000 female condoms to 15 countries.<sup>3</sup> This included an additional delivery of 1,923 cases of male condoms for Ukraine and an emergency order of plain, no-logo condoms to Kazakhstan. The project processed 35 purchase orders in Q2, working aggressively to clear a backlog of orders reliant on the FY 2023 Condom Fund.

**Delivering voluntary medical male circumcision (VMMC) kits.** In Q2, GHSC-PSM delivered 337,369 VMMC kits to Malawi, Mozambique, Tanzania, Uganda, and Zimbabwe and 3,000 Shang Ring devices to Zimbabwe.

**Transitioning to TLD and multi-month dispensing.** In Q2, GHSC-PSM delivered more than 958,000 bottles of TLD to 14 countries.<sup>4</sup> Most deliveries were 90-count bottles except for Burkina Faso, Togo, and Zambia who ordered 180-count bottles.

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<sup>2</sup> DRC, Côte d'Ivoire, Kenya, Lesotho, Malawi, Mali, Namibia, Nigeria, Panama, Tanzania, Uganda, Zambia, and Zimbabwe.

<sup>3</sup> Benin, Burkina Faso, Cameroon, DRC, Côte d'Ivoire, Eswatini, Ghana, Haiti, Kazakhstan, Mali, Senegal, Uganda, Ukraine, Zambia, and Zimbabwe.

<sup>4</sup> Angola, Benin, Burkina Faso, Burundi, Cameroon, Eswatini, Guatemala, Haiti, Honduras, Kenya, Mozambique, Togo, Uganda, and Zambia.

**Transitioning to dolutegravir (DTG) 10mg.** Building on the transition to the optimal pediatric antiretroviral (ARV), in Q2, the project delivered 290,578 90-count bottles of DTG 10 mg to 11 countries and 300,562 30-count bottles to two countries. These deliveries will assist countries in initiating or expanding DTG 10mg transitions in line with their approved transition plans.

**Expanding the ARV Delivered at Place (DAP) program.** GHSC-PSM is increasing private sector engagement in the ARV supply chain. In Q2, 36 of the 55 purchase order lines (65 percent) released to suppliers were under the D-Term program (DAP or Delivery Duty Paid) for eight of the D-Term priority countries.<sup>5</sup> The project has issued 100 of 172 purchase order lines (58 percent) in FY 2023 under D-Terms.

**Implementing viral load/early infant diagnosis (VL/EID) awards.** Delivered 1.91 million VL/EID tests in Q2, saving approximately \$4.9 million compared to 2019 pre-global request for proposal (RFP) prices under the terms of the global service-level agreements. Total expenditure on these Q2 orders was approximately \$21.9 million. Total savings for GHSC-PSM and other PEPFAR buyers since 2020 compared with pre-RFP prices are more than \$102 million.

**Access to essential medicines.** In Q2, GHSC-PSM began evaluating its new sourcing strategy established in Q1. This evaluation focused on the proportion of awards for local manufacturers and wholesalers and opportunities/challenges with recently onboarded local wholesalers.

**Engaging suppliers.** In Q2, the three selected ARV suppliers in the vendor-managed solutions (VMS) program attended a joint supplier conference to launch the VMS program. This conference was led by GHSC-PSM, with the support of the USAID Global Health Supply Chain-Quality Assurance team.

For more information, see section B1: HIV/AIDS.

## **Malaria**

To date, GHSC-PSM has **procured over \$1.2 billion in malaria medicines and commodities for 31 countries.**

In Q2, GHSC-PSM delivered **18 million treatments for malaria; 501 million over the life of the project.**

In Q2, GHSC-PSM **delivered 7.98 million long-lasting insecticide-treated nets (LLINs) to 11 countries.**

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<sup>5</sup> DRC, Haiti, Kenya, Mozambique, Nigeria, Uganda, Zambia, and Zimbabwe.

In Q2, the project used malaria funds to engage current suppliers and qualify new suppliers to promote market health, drafted technical resources for global audiences, promoted activities to reduce or mitigate stock risks, and fostered quality of malaria commodities, among other activities.

**Achieving OTD and OTIF.** In Q2, the project continued to achieve OTD and OTIF above the target of 80 percent (91 percent OTD and 90 percent OTIF).

**Engaging suppliers.** In Q2, GHSC-PSM hosted in-person and virtual meetings with suppliers of malaria rapid diagnostic tests (mRDTs) and LLINs. Discussions focused on supplier performance, opportunities and challenges in manufacturing and/or warehousing capacity, and their product pipelines in Africa.

**Expanding market capacity for artemether-lumefantrine (AL).** In Q2, the project completed quality assurance method transfer (QAMT) reviews for two suppliers—one dispersible and one hard tablet, and qualified the products for procurement.

**Defining the standard requirement for shelf life and lifespan of LLINs.** In Q2, GHSC-PSM worked to update the certificate of conformance (CoC) report with the appropriate shelf life and lifespan requirement for LLINs.

**Generating technical requirements for procuring repellent.** In Q2, at the request of the Cambodia National Malaria Program, GHSC-PSM generated the technical requirements for the procurement of topical repellents and performed quality reviews on the topical repellent RFP for Cambodia to protect forest goers.

**Identifying successful supply chain workforce development (WFD) activities:** In Q2, GHSC-PSM began using country data from a study USAID funded in 2021 to conduct a qualitative assessment of WFD activities in PMI-funded countries, starting with Malawi.

**Producing technical resources:** In Q2, the project drafted a malaria community health worker supply chain advocacy paper and a landscape analysis modeling tool and guidance for inventory management for low malaria endemic settings.

For more information, see section B2: Malaria.

## **FP/RH**

GHSC-PSM has delivered enough contraceptives that, when combined with proper counseling and correct use, are estimated to **provide 94 million couple-years of protection** to date.

This includes **4 million couple-years of protection** in Q2.

In Q2, the project used FP/RH funds to document and share project-supported research, expand contraceptive choice, participate in global dialogues, create and disseminate global resources, support

initiatives to increase supply chain visibility and improve stakeholder collaboration, and to expand access to data tools to improve visibility for supply chain management, among other activities.

**Achieving OTD and OTIF.** GHSC-PSM delivered 86 percent of FP/RH commodities on time and 87 percent on-time and in-full in Q2.

**Sharing best practices and lessons learned with the global community.** In Q2, GHSC-PSM delivered presentations in various fora on topics such as hormonal intrauterine device procurement, market intelligence, the local manufacturing business case, optimizing contraceptive packaging, FY 2022 Contraceptive Security Indicator (CSI) survey findings, and a poster presentation on supply chain mobile applications for community health workers (CHWs) at the Community Health Worker Symposium in Liberia.

**Progressive packaging.** In Q2, GHSC-PSM placed the project's first-ever order of the medroxyprogesterone acetate injectable contraceptive 20-package configuration for delivery to Zambia. The configuration includes an equal number of vials-to-syringes in each box (20/20). This is an effort to address the distribution and stock management challenges associated with the existing packaging configuration. Results expected include a reduction in wasted product and improved product availability due to supply chain efficiency.

**Enhancing visibility of FP supply data.** In Q2, GHSC-PSM continued to improve FP supply data visibility through Global Family Planning Visibility and Analytics Network (VAN) platform and processes. The project also advocated for the VAN sustainability model in Ethiopia and Malawi, supported Nigeria in integrating the Nigeria Health Logistics Information System and VAN, and facilitated the transition to VAN Premium membership for Burundi, Liberia, and Rwanda.

**Updating the CSI survey for 2023 rollout.** In Q2, GHSC-PSM collaborated with USAID to update the CSI survey, incorporating feedback from five pilot country offices. The updates included clarifying technical terms, updating language and definitions, and adapting the COVID-19 pandemic section to reflect the 2023 landscape.

**Updating the logistics landscape tracker for government and parastatal outsourcing.** In Q2, GHSC-PSM updated the logistics landscape tracker. The tracker indicates which governments and parastatals are outsourcing supply chain services and where the project is outsourcing warehousing and distribution services. The tracker is applicable to other health task orders and will be disseminated to USAID as a resource for government outsourcing advocacy efforts.

For more information, see section B3: Family Planning and Reproductive Health.

## **MNCH**

In Q2, the project **published two reports** on the assessment of **commodities that address**



**hypertensive disorders of pregnancy (HDP) in Ghana and one global Call to Action for lifesaving MNCH commodities.**

In Q2, the project used MNCH funds to document project-supported commodity financing successes, participate in global policy dialogues, create and disseminate global resources, support health supply chain research, and modify supply chain data tools to improve procurement, management, availability, and quality of commodities used to treat and prevent pregnancy-related disorders and address common child and newborn health issues.

**MNCH commodity procurement.** Since its start, GHSC-PSM has procured over \$27 million in MNCH drugs and commodities. In Q2 FY 2023, GHSC-PSM made an urgent procurement of essential medicines on the verge of stockout for the DRC.

**Achieving on-time delivery.** Delivered 100 percent of maternal, newborn and child health commodities on time in Q2. Both OTD and OTIF scores for MNCH deliveries were 100 percent in FY23 Q2.

**Providing international MNCH supply chain leadership and guidance.** In Q2, the project concluded global technical discussions on availing commodities to treat childhood pneumonia and possible serious bacterial infection (PSBI) and, alongside partners, published a [call to action paper](#) with key recommendations. The project also engaged with partners at USAID’s Strategic Framework Event and contributed expertise at the NEST360 Newborn Policy Dialogue in Ghana. As a follow-up to the Newborn Policy Dialogue meeting, the project began to coordinate with partners to revise Ghana’s essential medicine list. Additionally, GHSC-PSM began planning post-partum hemorrhage commodity workshops in Guinea and Nigeria. The project also completed a draft of the resource “How to Operate the Center of Excellence” in Q2. Finally, GHSC-PSM shared its work that led to improved MNCH commodity financing in Ethiopia in many forums, and began developing a resource to share these successful strategies externally.

**Supporting systems for data-informed MNCH decision making.** Continued to refactor data analytics tools for use in Liberia—the Data Extraction Tool and Consumption Anomaly Tool—to track and make decisions around MNCH commodities. The project also completed the refactoring process for two tools in Burkina Faso, developed user guides, and presented data analytic tools to the Malawian government for their consideration. GHSC-PSM also supported end-use verification data collection and reporting in five countries in Q2.

**Working with countries to improve adherence to commodity quality standards and enhance in-country coordination and collaboration.** Provided MNCH-supported technical assistance to 15 countries in Q2. This included supporting two assessments in Ghana: 1) assessing the supply system for antihypertensives to identify barriers and avail them to health providers and patients and 2) assessing availability, use, and maintenance of medical devices and consumables for the respiratory ecosystem with a focus on safe and effective oxygen provision for small and sick newborns, including oxygen. The project completed the antihypertensives study in Q2 and published two reports with the findings.

For more information, see section B4: Maternal, Newborn and Child Health.

## STRENGTHENING HEALTH SYSTEMS

GHSC-PSM's strategic goal is for every country to have a locally led health supply chain that is integrated, optimized, accountable, agile, lean, and able to sustainably supply quality products to all citizens. The project currently manages 33 country or regional offices, supplemented by headquarters-based experts; these offices provide wide-ranging technical assistance to strengthen national health supply chains.

Country highlights:

- Supported peer-to-peer training and mentoring that have led to significant improvements in health facility inventory management and the use of LMIS in **Lesotho**. (See section B1.)
- Worked in **Ghana, Haiti, Liberia, Nigeria, Zambia** and **Zimbabwe** to develop tools that improve efficiencies in warehouse management. GHSC-PSM designs analytic tools within each country's context while ensuring that the tools are repeatable, reusable, and adaptable so countries can reuse them in a way that encourages and improves self-reliance.
- Procured 21 warehouse barcode scanners for **Eswatini's** CMS to increase warehouse efficiencies, including pick accuracy and order fulfillment. The accuracy and timeliness of inventory data are vital in determining when new orders need to be placed and when products need to be shipped, preventing the risk of facility stockouts.
- Worked with the MOH in **Malawi** to finalize the country's third national health sector strategic plan, or HSSP III, which now includes a health supply chain section.

For more information, see section C2: Systems Strengthening and Technical Assistance.

# Introduction

## A1. Background

The U.S. Agency for International Development (USAID) Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project works to ensure uninterrupted supplies of quality medicines and commodities to save lives and to create a healthier future for all. The project directly supports the following global health areas of importance to the U.S. Government (USG):

- The U.S. President's Emergency Plan for AIDS Relief (PEPFAR) to help reach its HIV/AIDS global 95-95-95 testing, treatment, and viral-load suppression targets.
- The U.S. President's Malaria Initiative (PMI) to reduce malaria deaths and substantially decrease malaria morbidity toward the long-term goal of elimination.
- USAID's Family Planning and Reproductive Health (FP/RH) program to ensure that key RH commodities are available for safe and reliable voluntary family planning.
- USAID's maternal and child health (MCH<sup>6</sup>) program to prevent child and maternal deaths.
- Other public health threats as they emerge, with support for Zika and novel coronavirus (COVID-19) at this time.

The project procures and delivers medicines and commodities, offers comprehensive technical assistance (TA) to strengthen national supply chain systems, and provides global supply chain leadership to ensure that lifesaving health supplies reach those most in need. GHSC-PSM procured commodities or provided TA to more than 70 countries over the life of the project (see Exhibit 3 below).

## A2. About This Report

We are pleased to present our performance report for quarter 2 (Q2) fiscal year 2023 (FY 2023). (January 1, 2023, through March 31, 2023). GHSC-PSM is a matrixed project that integrates work across two axes: health areas and technical objectives. Accordingly, the report is organized as follows:

- Section B summarizes major activities in each of the **five health areas**, including HIV/AIDS; malaria; FP/RH; maternal, newborn and child health (MNCH); and other public health threats.
- Section C describes activities under each of the **three main technical objectives** (global commodity procurement and logistics, systems strengthening, and global collaboration), including key indicator results for those objectives.

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<sup>6</sup> To clarify, the program externally is referred to as the "Maternal and Child Health Program," which was the impetus to name the task order the "Maternal and Child Health" task order. However, we often refer to maternal, newborn, and child health when discussing the technical content because we have a particular emphasis on supporting newborns.

- Annex A describes the activities GHSC-PSM has undertaken with **COVID-19 funding** to respond to the pandemic.
- Annex B provides **performance indicators** for January 1, 2023, through March 31, 2023 (annual indicators).

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

Exhibit 4. Countries for Which GHSC-PSM Procured Commodities (proc.) or Provided TA Over the Life of the Project (does not include COVID-19 procurements)<sup>7</sup>

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<sup>7</sup>Procurement and technical assistance country count criteria have been refined and clarified. Country counts may vary from previous reports. Procurement countries include all countries for which GHSC-PSM has released a purchase or distribution order during the life of the project. The table below includes these countries for all routine product groups, with COVID-19 procurements excluded. Technical assistance countries include all countries where GHSC-PSM has conducted long- or short-term technical assignments, for all health areas. Countries with limited in-country logistics support only are not counted.

	Proc.	TA		Proc.	TA
<b>AFRICA:</b>			<b>ASIA:</b>		
Republic of Angola	●	●	Islamic Republic of Afghanistan	●	
Republic of Benin	●		People's Republic of Bangladesh	●	
Republic of Botswana	●	●	Union of Burma	●	●
Burkina Faso	●	●	Kingdom of Cambodia	●	●
Republic of Burundi	●	●	Republic of Indonesia		●
Republic of Cameroon	●	●	Lao People's Democratic Republic	●	●
Democratic Republic of the Congo (DRC)	●		Nepal	●	●
Republic of Côte d'Ivoire	●		Islamic Republic of Pakistan	●	●
Kingdom of Eswatini	●	●	Independent State of Papua New Guinea	●	●
Federal Democratic Republic of Ethiopia	●	●	Republic of the Philippines	●	
Republic of Ghana	●	●	Kingdom of Thailand	●	●
Republic of Guinea	●	●	Socialist Republic of Vietnam	●	●
Republic of Kenya	●	●	<b>LATIN AMERICA &amp; CARIBBEAN:</b>		
Kingdom of Lesotho	●	●	Antigua and Barbuda	●	
Republic of Liberia	●	●	Commonwealth of the Bahamas	●	
Republic of Madagascar	●	●	Barbados	●	●
Republic of Malawi	●	●	Federative Republic of Brazil	●	
Republic of Mali	●	●	Republic of Chile	●	
Islamic Republic of Mauritania	●		Republic of Colombia	●	
Republic of Mozambique	●	●	Dominican Republic	●	
Republic of Namibia	●	●	Republic of Ecuador	●	
Republic of Niger	●	●	Republic of El Salvador	●	●
Federal Republic of Nigeria	●	●	Republic of Guatemala	●	●
Republic of Rwanda	●	●	Co-operative Republic of Guyana	●	●
Republic of Senegal	●		Republic of Haiti	●	●
Republic of Sierra Leone	●	●	Republic of Honduras	●	●
Republic of South Africa	●		Jamaica	●	●
Republic of South Sudan	●	●	Republic of Panama	●	●
United Republic of Tanzania	●		Republic of Paraguay	●	
Togolese Republic	●		Republic of Peru	●	
Republic of Uganda	●	●	Federation of Saint Kitts and Nevis	●	
Republic of Zambia	●	●	Saint Lucia	●	
Republic of Zimbabwe	●	●	Saint Vincent and the Grenadines	●	
<b>EUROPE &amp; EURASIA:</b>			Republic of Suriname	●	●
Republic of Kazakhstan	●		Republic of Trinidad and Tobago	●	
Kyrgyz Republic	●	●	<b>MIDDLE EAST:</b>		
Republic of Tajikistan	●	●	Hashemite Kingdom of Jordan	●	
Ukraine	●		Republic of Yemen	●	

# PROGRESS BY HEALTH AREA

This section summarizes GHSC-PSM’s support in Q2 FY 2023 for HIV/AIDS; malaria; FP/RH; maternal, MNCH; and other public health threats.

## BI. HIV/AIDS



GHSC-PSM has delivered enough antiretrovirals (ARVs) to provide nearly **21 million patient-years of HIV treatment over the life of the project**, including over **351 thousand patient-years of treatment in Q2**.

To date, GHSC-PSM has delivered over **80 million bottles of tenofovir/lamivudine/dolutegravir (TLD)<sup>8</sup>** to 33 countries, which provided over **16 million patient years of treatment**.



**Multi-month dispensing (MMD)** of packages of TLD first-line treatment accounted for **100 percent of all quantities delivered** in Q2. Patients have saved **an estimated 3.3 million trips** to the pharmacy in Q2 and **more than 112.8 million trips over the life of the project**. This saves patients time and money, and gives clinicians more time with other patients in need.



In Q2, **26 countries<sup>9</sup>** procured HIV/AIDS medicines and commodities.

**28 countries<sup>10</sup>** received health supply chain systems strengthening with HIV/AIDS funding in FY 2023.

<sup>8</sup> This total figure for TLD delivery includes 49.2 million 90-count bottles, 28 million 30-count bottles, and 2.8 million 180-count bottles. For more information, see Section B1. HIV/AIDS, TLD, and multi-month dispensing.

<sup>9</sup> GHSC-PSM procured HIV/AIDS commodities for the following countries: AFRICA: Angola, Benin, Burkina Faso, Burundi, Cameroon, DRC, Côte d'Ivoire, Eswatini, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mali, Mozambique, Namibia, Nigeria, Tanzania, Togo, Uganda, Zambia, Zimbabwe; ASIA: Philippines; CARIBBEAN: Haiti; CENTRAL/SOUTH AMERICA: Guatemala; EUROPE & EURASIA: Ukraine.

<sup>10</sup> GHSC-PSM has provided HIV-funded TA support to the following countries in FY 2023: AFRICA: Angola, Botswana, Burkina Faso, Burundi, Cameroon, Eswatini, Ethiopia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mali, Mozambique, Namibia, Nigeria, Rwanda, Sierra Leone, Uganda, Zambia, Zimbabwe; ASIA: Myanmar, Indonesia; CARIBBEAN: Haiti, Honduras; CENTRAL/SOUTH AMERICA: El Salvador, Guatemala, Panama. Additional short-term assistance was provided in Jamaica.

GHSC-PSM supports PEPFAR's goal of controlling the HIV/AIDS epidemic by procuring and delivering medicines and commodities to prevent infection and treat people living with HIV (PLHIV), including viral load testing commodities to monitor treatment efficacy. This requires global collaboration with suppliers, other donors (Global Fund), the USG, and supported country governments. GHSC-PSM implements data visibility initiatives to appropriately procure and distribute ARVs and diagnostics, linking patients with the health commodities they need. Project activities support USAID's efforts to achieve the 95-95-95 goals: 95 percent of PLHIV people know their status, 95 percent of these are on HIV treatment, and 95 percent of these have no detectable virus. In FY 2023, GHSC-PSM integrated key technical direction from USAID around viral load/early infant diagnosis (VL/EID) diagnostics, vendor-managed solutions (VMS), logistics, TA priorities, and advanced analytics and data visibility into its work plan. The project set up systems to internally track and coordinate these priorities and to support communicating progress back to USAID.

## **HIV/AIDS SUPPLY CHAIN ON-TIME DELIVERY AND COST SAVINGS**

### ***Procurement***

GHSC-PSM has procured more than \$3.3 billion in HIV commodities over the life of the project, with \$325 million worth of procurements in FY 2023. Adult ARVs make up 45 percent of all procurements by value this FY.

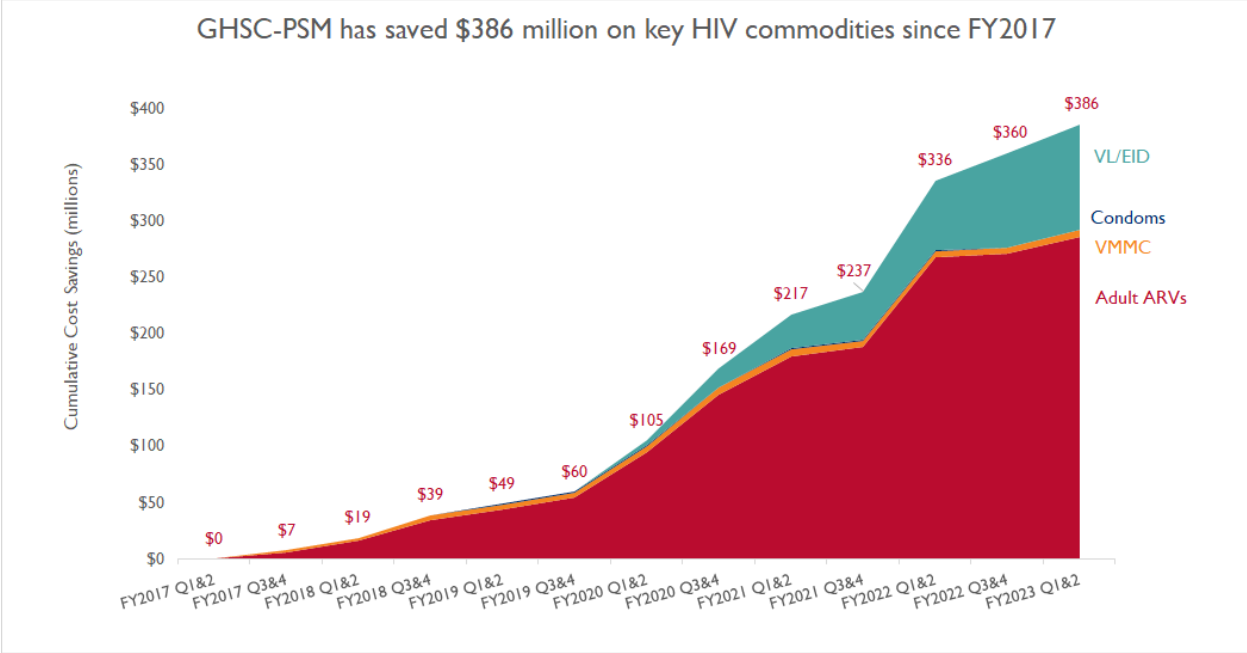
### ***Savings from strategic sourcing of HIV commodities***

GHSC-PSM's strategic sourcing activities continue to generate significant cost savings for PEPFAR and the countries and people served by its HIV programs. As shown in Exhibit 5, GHSC-PSM has saved \$386 million on core HIV commodities over the life of the project compared to baseline prices, including more than \$25 million in the first half of FY 2023.

Savings generated include \$286 million on adult ARVs, including over \$15 million in the first half of FY 2023, driven almost entirely by the project's TLD strategy. The average price of TLD continued to fall in Q1 and Q2 of FY 2023 amid a healthy, competitive market. GHSC-PSM also allocated a year's worth of TLD demand in October 2022, helping bring down the cost by giving vendors insight into upcoming demand. The average price in Q1 and Q2 is the lowest yet for TLD, at less than 11 cents per tablet and \$40.15 per patient year. Notably, these results exclude D-Term orders, which now make up most of GHSC-PSM's TLD order volume. D-Terms are excluded because unit prices include logistics costs and are therefore not strictly comparable to product-only baseline prices. That said, TLD prices have fallen far enough that even D-Term orders are priced below the 2018 baseline, meaning that TLD savings are likely even greater than those captured here.

Laboratory cost savings have also topped \$93 million since the launch of the global viral load and EID agreements in January 2020. Average prices per test continue to be below baselines, and the project generated nearly \$10 million in savings against 2019 baseline prices in this period.

Exhibit 5. Life-of-Project Savings on HIV Commodities



**Deliveries**

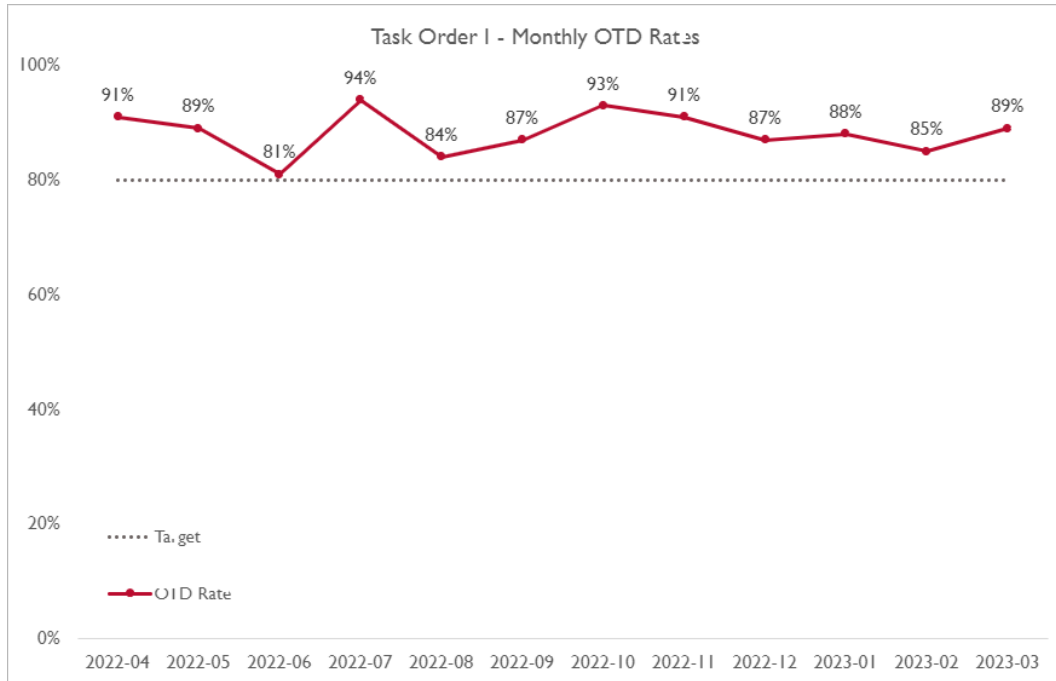
In Q2, GHSC-PSM delivered \$78.9 million in HIV commodities to countries and over \$3.2 billion in HIV commodities over the life of the project.

**On-time delivery (OTD) and on-time, in-full (OTIF) delivery**

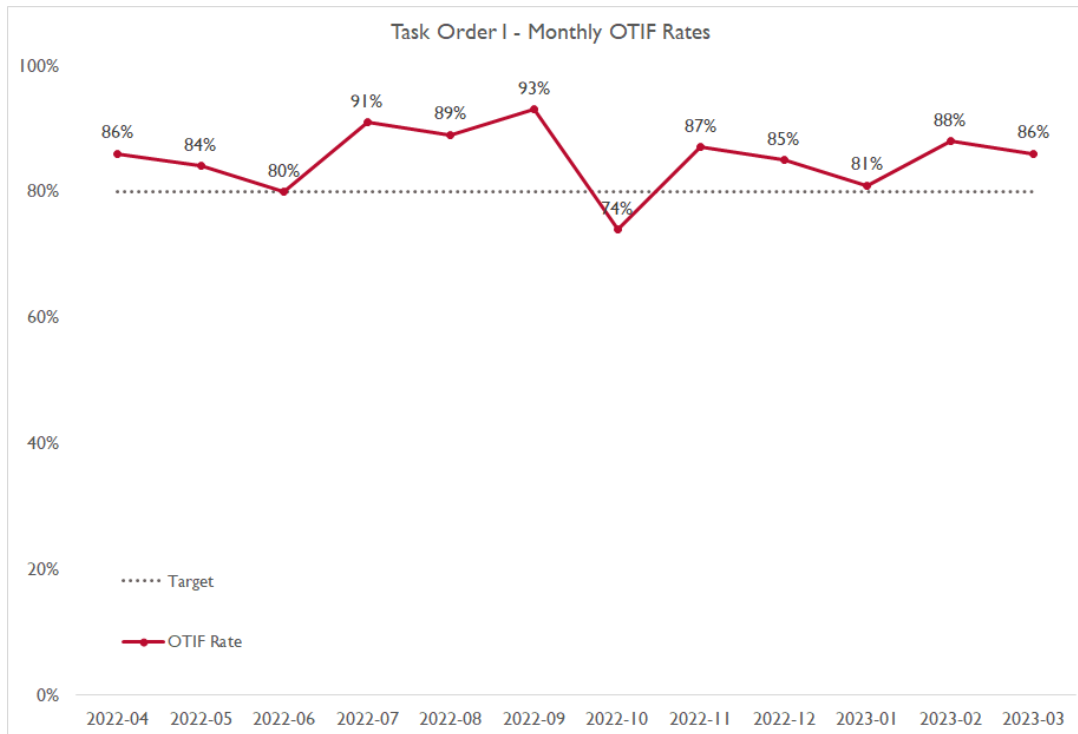
Timeliness of GHSC-PSM deliveries remained consistently strong for standard OTD over the reporting period, as shown in Exhibit 6. In Q2, OTD was 87 percent for HIV. GHSC-PSM’s OTIF rate measures the percentage of deliveries delivered on time and in full during a given period. Delivery of late orders in a subsequent month to the agreed-upon delivery date drives down the OTIF rate, as can delivery of split shipments, which helps explain the difference between OTD and OTIF rates. For OTIF, project performance continued to exceed the target of 80 percent, achieving 85 percent in Q2. See Annex A for further details.



Exhibit 6. HIV Commodities OTD



## Exhibit 7. HIV Commodities, OTIF



### Supporting PEPFAR's HIV Prevention Agenda

#### ***Pre-exposure prophylaxis (PrEP)***

Daily oral PrEP using the antiretroviral medicines tenofovir/emtricitabine (TE) or tenofovir/lamivudine (TL) dramatically reduces the risk of HIV infection in people who use it as directed. In Q2, GHSC-PSM delivered 1,638,545 bottles of PrEP products to 13 countries.<sup>11</sup>

GHSC-PSM monitors supply capacity and lead times for PrEP products in the catalog and the delivery of PrEP commodities to 24 countries quarterly to determine the impact of the PrEP program. The project also actively tracks regulatory approval lead times for new PrEP commodities under development, such as the long-acting injectable PrEP product cabotegravir (CAB-LA). Monitoring and tracking enable the project to adapt to the dynamics of each country's PrEP scale-up program by advancing or delaying shipments when necessary.

<sup>11</sup> DRC, Côte d'Ivoire, Kenya, Lesotho, Malawi, Mali, Namibia, Nigeria, Panama, Tanzania, Uganda, Zambia, and Zimbabwe.

In Q2, GHSC-PSM finalized the subcontract with the supplier of CAB-LA. The project can now begin procuring this injectable PrEP commodity as directed in the PEPFAR FY 2024 (Country Operational Plan (COP) 23) Technical Consideration for HIV Prevention Programming.

GHSC-PSM continued to provide commodity procurement and logistics support to the USAID Maximizing Options to Advance Informed Choice for HIV Prevention (MOSAIC) program. After pre-positioning 32,656 dapivirine vaginal rings at the Dubai regional distribution center (RDC) for the MOSAIC project in Q1, GHSC-PSM completed the first delivery of 3,600 rings from the RDC to Uganda in Q2. The project also initiated the delivery of 10,800 rings to Kenya (3,600), Lesotho (3,600), and Zimbabwe (3,600), which are expected to arrive in Q3.

### **Condoms**

Correct and consistent use of condoms and lubricants significantly reduces the risk of HIV transmission. USAID's support for the condoms program targets regions with high demand and supply gaps. In Q2, GHSC-PSM delivered more than 100 million male condoms (33,000 cases) and more than 720,000 female condoms to 15 countries.<sup>12</sup> This included a delivery of 1,923 cases of male condoms for Ukraine and an emergency order of plain, no-logo condoms to Kazakhstan.

Each year, more than 20 countries use PEPFAR's Condom Fund to procure condoms and lubricants. Due to congressional delays in approvals for the FY 2023 Condom Fund (approved when Congress reconvened in January 2023), countries could not place condom orders in Q1. However, in Q2, GHSC-PSM processed 35 purchase orders working aggressively to clear a backlog of orders reliant on this funding. As part of the project's risk mitigation strategy, in Q1 to minimize the impact of the delay on product availability and lead time, GHSC-PSM placed a bulk inventory order to secure stock while awaiting congressional approval. This ensured the project had stock available to cover orders placed by countries in Q1 and Q2.

### **Voluntary medical male circumcision (VMMC) kits**

Male circumcision is cost-effective and reduces female-to-male sexual transmission of HIV by 60 percent.<sup>13</sup> The World Health Organization and UNAIDS support VMMC scale-up in 14 priority countries in sub-Saharan Africa with a high burden of HIV and low male circumcision prevalence. In Q2, GHSC-PSM delivered 337,369 VMMC kits to Malawi, Mozambique, Tanzania, Uganda, and Zimbabwe and 3,000 Shang Ring devices to Zimbabwe. GHSC-PSM has delivered VMMC kits to 11 VMMC priority countries since the start of the project.<sup>14</sup>

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<sup>12</sup> Benin, Burkina Faso, Cameroon, DRC, Côte d'Ivoire, Eswatini, Ghana, Haiti, Kazakhstan, Mali, Senegal, Uganda, Ukraine, Zambia, and Zimbabwe.

<sup>13</sup> [USAID 2022 Voluntary Medical Male Circumcision Fact Sheet](#)

<sup>14</sup> Botswana, Eswatini, Ethiopia, Malawi, Mozambique, Namibia, Rwanda, South Africa, Tanzania, Uganda, and Zimbabwe.

GHSC-PSM is strategically engaging with a Chinese-based Shang Ring device manufacturer and a local distributor to determine whether the project can achieve procurement efficiencies in FY 2023. The project is seeking to reduce lead times as demand for the Shang Ring device rises in existing and new markets.

### **Essential medicines**

Among people living with advanced HIV, cryptococcal meningitis is one of the most dangerous opportunistic infections and is a major contributor to illness, disability, and mortality. Recent guidelines from the World Health Organization (WHO) recommend amphotericin B (liposomal) in combination with flucytosine for induction treatment of cryptococcal disease. Most low- and middle-income countries have adopted these WHO guidelines. However, despite being critical to saving lives, access to these medications remains scarce in many countries due to limited product availability and a lack of funding.

In Q2, GHSC-PSM continued contract negotiations with the manufacturer of amphotericin B liposomal, a critical advanced HIV disease commodity. The goal of these negotiations is to enable the project to procure the commodity at market access pricing, ensuring product availability at a reduced price for PEPFAR countries.

In Q2, GHSC-PSM began evaluating its new sourcing strategy for essential medicines established in Q1. This evaluation focused on assessing the proportion of awards for local manufacturers and wholesalers and opportunities/challenges with recently onboarded local wholesalers. This information will support discussions on the enabling environment and regulatory and quality assurance landscape as part of the USAID Regionalization Workshop to be held in Q3.

### **Tuberculosis preventive treatment (TPT)**

As the leading cause of morbidity among PLHIV, tuberculosis (TB) causes over a third of all AIDS-related deaths. The WHO recommends that PLHIV who are unlikely to have active TB should receive TPT as part of a comprehensive package of HIV care, including pregnant women and those who have previously been treated for TB, regardless of the degree of immunosuppression, even if latent TB infection testing is unavailable. Completion of TPT for all PLHIV (including eligible household contacts of PLHIV with TB disease) is a PEPFAR Minimum Program Requirement.

Since 2018, GHSC-PSM has delivered more than 7.4 million TPT courses to 19 countries on behalf of USAID, contributing to the shared goal of a TB-free world and exceeding the UN target of providing TPT to six million people living with HIV by 2022.

**Three months of weekly high-dose isoniazid and rifapentine (3HP).** Three months of weekly high-dose 3HP is the preferred PEPFAR TPT regimen for adults and adolescents. In Q2, GHSC-PSM delivered seven orders of rifapentine/isoniazid 300mg/300mg fixed-dose combination (FDC) tablets.<sup>15</sup>

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<sup>15</sup> Orders include 26,200 36-count packs to Côte d'Ivoire, 2,000 36-count packs to DRC, 60,000 36-count packs to Uganda, 58,036 36-count packs to Zambia, and one order of 2,000 24-count packs of rifapentine 150 mg to Haiti.

GHSC-PSM continues to work with the new supplier of rifapentine/isoniazid to meet rising demand. In Q2, the first two orders were en route to Côte d'Ivoire and Uganda.

**Isoniazid preventive therapy (IPT).** Most GHSC-PSM countries transitioned to 3HP from IPT in FY 2022. However, the project continues to fulfill orders of isoniazid 100mg pediatric tablets for countries that continue implementing IPT. GHSC-PSM delivered four orders of isoniazid tablets to Haiti, Nigeria, and Uganda in Q2.<sup>16</sup>

**Additional WHO-endorsed regimens.** WHO endorsed three other shorter regimens apart from 3HP. These are one month of daily rifapentine plus isoniazid, or 1HP; three months of daily isoniazid and rifampicin (3HR); and four months of daily rifampicin (4R). The dispersible 3HR tablet is a palatable option for children in contact with someone with active TB. In Q2, GHSC-PSM delivered 2,000 packs of 3HR 75/50mg dispersible tablets to Democratic Republic of Congo (DRC), currently the only country that orders 3HR.

### **Supporting the First 95: Testing**

To support rapid test kit (RTK) availability and reach the first 95 (HIV diagnosis), GHSC-PSM provides forecasting and supply planning as well as in-country logistics support to the USAID Global Health Supply Chain Program-Rapid Test Kit (GHSC-RTK) project (implemented by Remote Medical International), which undertakes the commodity procurement and international freight. GHSC-PSM promotes management of HIV-RTK orders and deliveries through regional- and central-level stock data collection using the HIV/AIDS Data Visibility Dashboard. The project shares data monthly with GHSC-RTK to guide HIV-RTK procurement planning and data triangulation and reviews HIV testing targets against HIV-RTK stock in countries with PEPFAR-supported HIV testing programs. The project reported five stockout risks in Q2 and resolved them through emergency orders, expedited shipments, and stock transfers.

### **Supporting the Second 95: Treatment**

#### **Increased private sector involvement in ARV delivery**

GHSC-PSM is increasing private-sector engagement in the ARV supply chain by expanding its D-Term program, supplier delivery of ARVs under Delivered at Place (DAP) and Delivered Duty Paid (DDP) Incoterms. Thus far, the project has qualified ten high-volume ARV countries as D-Term priority countries: DRC, Haiti, Kenya, Nigeria, Mozambique, eSwatini, Tanzania, Uganda, Zambia, and Zimbabwe.

In Q2, 36 of the 55 purchase order lines (65 percent) released to suppliers were under the D-Term program (DAP or DDP). These orders are destined for eight of the D-Term priority countries: DRC, Haiti, Kenya, Mozambique, Nigeria, Uganda, Zambia, and Zimbabwe. By the end of Q2, GHSC-PSM had issued 100 of 172 purchase order lines (58 percent) under D-Term. GHSC-PSM set a target to deliver 100 percent of eligible D-term ARV orders under DDP Incoterms to Mozambique and Zimbabwe in FY 2023. The project is on target to achieve this objective, delivering four DDP shipments to these countries in Q2

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<sup>16</sup> Orders of isoniazid tablets included 1,000 100-count 100mg packs and 4,277 672-count 300mg packs to Haiti; 27,085 100-count packs to Nigeria; and 17,088 100-count 100mg packs to Uganda.

and six in Q1.

### **Supplying TLD**

Over the life of the project, GHSC-PSM has delivered **80 million bottles of TLD**<sup>17</sup> to **33 countries**.

This is enough to provide over **16 million patient years of TLD treatment**.

As of Q2, GHSC-PSM has delivered over **49 million 90-count bottles of TLD** to 30 countries.

### ***TLD and multi-month dispensing***

To achieve HIV treatment goals, GHSC-PSM supports PEPFAR countries' transition to TLD, the preferred first-line ARV. MMD of TLD is also a high priority in the global fight against HIV. TLD is provided in bottles of 30, 90, and 180 tablets. Over the life of the project, GHSC-PSM has delivered more than 80 million bottles of TLD to 33 countries, including more than 49 million 90-count bottles, 28 million 30-count bottles, and 2.8 million 180-count bottles.

In Q2, GHSC-PSM delivered more than 958,000 bottles of TLD to 14 countries.<sup>18</sup> Most deliveries were 90-count bottles of TLD except for Burkina Faso, Togo, and Zambia orders, which were delivered in 180-count bottles. Benin and Haiti received 90-count and 180-count bottles of TLD.

Previously, GHSC-PSM orders for TLD were fulfilled through an open competition, spot bidding process or from GHSC-PSM RDCs. For FY 2023, the project switched to an annual allocation strategy for TLD, concentrating on five pre-qualified suppliers to help them improve planning to ensure appropriate stock levels of active pharmaceutical ingredients (APIs). This strategy has simplified the ordering process for GHSC-PSM and reduced order cycle time metrics.

Allied with this annual allocation strategy, the project earmarked an equal portion of FY 2023 TLD demand to the GHSC-PSM vendor-managed solutions (VMS) program. GHSC-PSM selected three TLD suppliers through a competitive process to pre-position TLD in quality-assured warehouses in South Africa by the end of Q3. In Q2, the three ARV suppliers attended a joint supplier conference to launch the VMS program. The conference was led by GHSC-PSM, with the support of the GHSC-Quality Assurance (QA) team. The conference's objectives were to review VMS contractual requirements, outline the VMS allocation process, stress contractual quality assurance requirements, and agree on the supplier

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<sup>17</sup> This total figure for TLD delivery includes 49 million 90-count bottles, 28 million 30-count bottles, and 2.9 million 180-count bottles.

<sup>18</sup> Angola, Benin, Burkina Faso, Burundi, Cameroon, Eswatini, Guatemala, Haiti, Honduras, Kenya, Mozambique, Togo, Uganda, and Zambia.

performance management framework that will apply under the VMS program. The first VMS order of 347,000 90-count bottles of TLD for Mozambique will be processed in Q3.

### **Supplying dolutegravir (DTG) 10mg**

Over the life of the project, GHSC-PSM has delivered 2.9 million bottles of DTG 10mg to 24 countries.

In Q2, the project delivered 591,140 bottles of DTG 10mg valued at \$1.7 million to 12 countries.

### ***Pediatric ARVs***

GHSC-PSM supports PEPFAR countries to transition children living with HIV to DTG 10mg—the preferred integrase strand transfer inhibitor, or INSTI, pediatric ARV. GHSC-PSM analyzes orders and supply plan data monthly to increase USAID and stakeholder visibility into the pace and progress of country transitions. In Q2, the project delivered 290,578 90-count bottles of DTG 10mg to 11 countries and 300,562 30-count bottles to two countries.<sup>19</sup> These deliveries will assist countries in initiating or expanding DTG 10mg transitions in line with their approved transition plans.

In Q2, GHSC-PSM began working with USAID in DRC, Nigeria, Uganda, and Zimbabwe to analyze their readiness to transition to a triple FDC of ABC/3TC/DTG 60/30/5mg. The project created a forecasting tool to help estimate demand for each product to ensure sufficient stock before the expected transition in Q4 and to prevent wastage.

### **Supporting the Third 95: Viral Load Testing**

In FY 2022, GHSC-PSM implemented a new laboratory strategy to further improve the availability and visibility of laboratory services and commodities. The strategy focuses on strengthening and integrating data systems and stakeholder collaboration through technical support and project coordination. As part of its effort to foster country government ownership of resilient and robust diagnostic laboratory networks, GHSC-PSM uses a network approach to strengthen and scale up laboratory services, as described in [Beyond Diagnostic Network Optimization: A Network Approach to Strengthening and Scaling Up Laboratory Services](#). The multi-pronged approach focuses on diagnostic network optimization (DNO), performance management, improvement of sample transport referral networks, accurate forecasting and supply planning, and cost-effective procurement and service agreements that include key performance indicator monitoring.

### ***Implementing viral load awards***

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<sup>19</sup> Angola, Cameroon, DRC, Eswatini, Haiti, Kenya, Mozambique, Nigeria, Panama, Zambia, and Zimbabwe received 90-count bottles. Côte d'Ivoire and Mozambique received 30-count bottles.

Preliminary data analysis shows that in Q2, GHSC-PSM delivered 1.91 million VL/EID tests, saving approximately \$4.9 million compared to 2019 pre-global request for proposal (RFP) prices under the terms of the global service-level agreements. Total expenditure on these orders in Q2 was approximately \$21.9 million. Cumulative savings for GHSC-PSM and other PEPFAR buyers since 2020 compared with pre-RFP prices are more than \$102 million.<sup>20</sup> This represents significant cost savings averaging \$2–\$3 per patient test across the PEPFAR portfolio compared to pre-RFP levels.

In Q2, the project developed and launched a geographic information system (GIS) feature for the Test Results Reporting module of the Global Viral Load Dashboard. The feature allows users to access a GIS-enabled map to select a laboratory in a specific country and review site data, including the number of tests and error rates. The GIS map shows data for six countries: Eswatini, Kenya, Mozambique, Nigeria, Uganda, and Zambia, with plans to expand to include all Wave-1 and -2 countries.

The pilot vendor-managed inventory (VMI) activity for VL commodities, launched by the project in Q4 FY 2022 in one Mozambican laboratory, will conclude in Q3. VMI is an inventory model that streamlines inventory management and order fulfillment by improving collaboration between the supplier, the buyer, and distributors. GHSC-PSM will assess costs and lessons learned from implementing the pilot before rolling out the VMI solution throughout Mozambique.

In Q2, the project collaborated with USAID/Washington on a VMI Orientation Guide that provides an in-depth understanding of the VMI transition process. This document will be shared with USAID Missions, implementing partners, and Ministries of Health (MOHs) interested in this VMI solution in Q3.

### ***Extending the global RFP for viral load and EID***

GHSC-PSM continued in Q2 with the Wave-2 RFP process, establishing fair pricing for VL and EID testing commodities, creating formal service-level agreements, and enabling expanded instrument connectivity for the remaining 42 PEPFAR-supported countries<sup>21</sup> not included in Wave-1.<sup>22</sup> The project will launch all-inclusive service pricing for these countries in Q3. Project-negotiated terms and pricing will be available to other procurers in countries using public funds, such as MOHs and the Global Fund.

In Q2, GHSC-PSM presented on the impact of transforming VL testing through strategic procurement to PEPFAR and other global public procurers to a large audience from the Office of the U.S. Global AIDS

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<sup>20</sup> Includes cost savings on VL/EID reagents globally plus savings on the service and maintenance of laboratory equipment in the six Wave-1 countries. It includes procurements by GHSC-PSM as well as other PEPFAR buyers who can benefit from the global agreements. The VL/EID savings included in the calculation of HIV commodity cost savings overall (see Exhibit 5) includes only savings on GHSC-PSM's VL and EID orders and is therefore slightly lower (\$93 million).

<sup>21</sup> Wave-2 countries are AFRICA: Angola, Benin, Botswana, Burundi, Burkina Faso, Cameroon, Cote d'Ivoire, DRC, Eswatini, Ethiopia, Ghana, Lesotho, Liberia, Malawi, Mali, Namibia, Rwanda, Senegal, Sierra Leone, South Sudan, Togo, Zimbabwe; ASIA & EUROPE: Cambodia, India, Indonesia, Kazakhstan, Nepal, Papua New Guinea, Philippines, Thailand, Ukraine, Vietnam; LATIN AMERICA & CARIBBEAN: Bahamas, Brazil, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Panama.

<sup>22</sup> The original six Wave-1 countries were Kenya, Mozambique, Nigeria, Tanzania, Uganda, and Zambia.



Coordinator and Global Health Diplomacy, USAID, and CDC. GHSC-PSM and USAID held a similar informational webinar for the Global Fund.

### ***Procuring viral load and laboratory supplies***

In Q2, GHSC-PSM delivered VL/EID reagents and consumables to 17 countries.<sup>23</sup> The challenge for smaller countries is that while they must place orders early, consumption volume is volatile and many commodities, especially reagents, have a short shelf life. The project works with vendors to split orders into multiple shipments, which helps laboratories avoid stockouts and ensures laboratories consume stock before expiry. In Q2, GHSC-PSM worked intensively with Togo and the vendor to reschedule shipments.

In Q2, GHSC-PSM continued to supply the new standardized dried blood spot (DBS) kits to Côte d'Ivoire, DRC, and Eswatini. In Q1, the project encountered supply issues with one of the (optional) components of the kit, the capillary tube. In Q2, USAID and GHSC-QA approved an alternative capillary tube to mitigate the supply issue for pending orders while reviewing the specifications to avoid sole-source situations. Specifications will be finalized for approval in Q3.

For lab supplies, GHSC-PSM signed updated blanket ordering agreements with three pre-selected wholesalers following an RFP process among all eligible wholesalers. The project also updated the strategy for 2023 to include 'supplier performance' in the evaluation criteria for individual awards.

### ***Forecasting and supply planning (FASP)***

Accurate FASP is key to a successful supply chain. As of Q2, GHSC-PSM had trained 31 countries on using the Quantification Analytics Tool (QAT) to submit quarterly supply plans to the project. For general information on QAT and the project's work in FASP, see section C2: Systems Strengthening Technical Assistance.

### ***Data-driven lab network optimization using OptiDx***

In line with the strategy to improve laboratory services, GHSC-PSM supports quality service delivery through data-driven laboratory network optimization and GIS visualization of data, as well as FASP.

GHSC-PSM leads DNO with multiple stakeholders—including USAID, CDC, MOHs, other implementing partners, and donors. Once all input data are collected and cleaned, the project uses two tools—OptiDx and supplemental interactive maps developed using the Python Library Folium. Software applications like OptiDx, developed by Coupa™ in collaboration with USAID and FIND,<sup>24</sup> to generate models and potential scenarios that improve visibility into network performance and create opportunities to optimize laboratory equipment placement and multi-disease integrated testing, which can increase coverage and reduce costs.

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<sup>23</sup> VL/EID reagents and consumables were delivered to Angola, Benin, Burkina Faso, DRC, Côte d'Ivoire, Eswatini, Ethiopia, Guatemala, Haiti, Kenya, Mozambique, Nigeria, Senegal, Togo, Tanzania, Zambia, and Zimbabwe.

<sup>24</sup> See <https://www.finddx.org/about/>

The interactive maps visualize networks, including locations of health facilities, laboratories, and hubs, referral linkages, distances between facilities, testing volumes, machine capacity and utilization, and testing demand by administrative area. These maps have two main uses: first, at the initial stages of the DNO, they can present the initial data collected to validate its accuracy before loading it into OptiDx. Second, maps can highlight elements of the testing scenarios and the impact of changes on the diagnostic network in the final stages of analysis. Stakeholders can then review the scenarios and develop an operational plan that considers how the proposed changes to the lab network affect the budget, operations, human resources, and logistics.

In Q2, GHSC-PSM improved diagnostic networks through detailed analysis using OptiDx in Burundi, Ghana, and Togo. See section C2: Systems Strengthening Technical Assistance.

GHSC-PSM is finalizing its review of the instrument procurement questionnaire, which is used to confirm that the instruments are appropriate, that the labs are prepared for the instruments, and agreements are in place to maintain the instruments. The newly developed capacity and utilization analysis tool will further help to standardize and aid in determining the appropriate conventional polymerase chain reaction (PCR) devices used for VL and EID testing aligned to demand. A standard operating procedure (SOP) outlining requirements for instrument procurement is in development. The project anticipates a Q3 rollout.

## **HIV/AIDS Supply Chain Data Visibility and Commodity Security**

GHSC-PSM improves data visibility and analysis of HIV commodity inventories at all levels of the supply chain. The project reviews national inventory data each month for more than 142 HIV medicines and commodities at the central, regional, and facility levels in 21 PEPFAR countries to identify stock imbalances across the globe. Data generated assist in monitoring commodity stock risks and progress made toward specific initiatives, such as the success of the TLD and MMD transition, the transition to optimal PrEP and TPT regimens, and the scale-up of VL/EID programs. These reports help mitigate stock imbalances and avoid rationing and waste by raising awareness, identifying opportunities to shift GHSC-PSM shipments, and supporting redistribution within a country.

GHSC-PSM hosts monthly Proactive Stock Risk Management (ProStock) meetings. Building on the project's HIV/AIDS data analysis and reporting noted above, this meeting is a forum for GHSC-PSM and USAID to discuss actual and imminent gaps in HIV commodity access and implement action plans to address them. The project also presents potential HIV commodity stock risks in this forum, allowing for early action and mitigation on numerous longer-term stockout and expiry risks across all categories of HIV products, including adult and pediatric ARVs, PrEP, HIV-RTKs, and VL/EID tests.

In Q2, GHSC-PSM reported monthly on 43 HIV commodity stockout risks across 14 countries. The most common causes of stockout risks were: late deliveries (of host government-funded orders), late deliveries (of Global Fund-funded orders) and late order placement (of USAID-funded orders), due to delays in the release of funding. The products most commonly reported as at risk of stockout were VL/EID (16 risks), adult ARVs (11 risks), and pediatric ARVs (11 risks).

The project mitigated most stockout risks through donor and supplier coordination and bilateral data sharing. GHSC-PSM also actively mitigated stockout risks by facilitating inter-country transfers and

processing emergency orders. GHSC-PSM reported 12 commodity stockout risks resolved during the same period, with the most common resolution noted as deliveries by Global Fund and host governments.

## Country Support

The HIV/AIDS task order is funding supply chain systems strengthening in 28 countries in FY 2023.

In **Botswana**, GHSC-PSM cultivated a pool of skilled local personnel to lead future health commodity quantification exercises. An effective contract management unit is crucial to ensuring prudent resource use and to maintaining a continuous supply of health commodities. Since its formation in 2016, the Contracts Management Unit (CMU) at central medical store (CMS) was understaffed and staff there lacked the skills to deal with all contract matters relating to procuring health commodities and related services. GHSC-PSM seconded a contracts management advisor to CMS to impart knowledge and build CMU staff skills in contract management on activities such as:

- Creating a contracts database and developing accompanying SOPs and service-level agreements for framework contracts and a supplier performance monitoring tool.
- Training the contract management team in identifying obligations in framework contracts and their practical application and finalizing a process map of the various CMS functional units to identify data exchange points.

In Q2, the project trained one GHSC-PSM staff and 16 key CMS staff directly involved in procuring medicines, supplies, laboratory reagents, and related consumables on how to process orders in QAT. This training created a pool of skilled local personnel to lead future health commodity quantification exercises. The project also collaborated with the CMS and the MOH to conduct monitoring and supportive supervision visits at 35 health facilities in Q2, including 22 clinics, nine hospitals, and four subnational warehouses in seven health districts. These monitoring and supportive supervision visits inform future ARV transition plans, serve as a knowledge-sharing platform, and help identify and resolve data quality issues. The assessment found that all health facilities had completed transitioning eligible patients to optimized adult and pediatric dolutegravir-based ARV regimens and had implemented MMD of ARVs following standard criteria. Approximately 50 percent of facilities achieved an overall data quality confidence rating of 85–100 percent. Of the targeted district health management team (DHMT) supervisors, 75 percent (six of eight) participated in the project's supply chain management mentorship program during the assessment visits.

In **Lesotho**, GHSC-PSM is working with the MOH's Supply Chain Management Department (SCMD) to conduct onsite trainings for staff in rural facilities. Many facilities are in remote areas with challenging or no road infrastructure, leading to poor accessibility by private or public transport, giving rise to high staff turnover and the loss of institutional knowledge. Onsite peer-to-peer training and mentoring by SCMD staff, with project support, has led to significant improvements in health facility inventory management and the use of LMIS; improved staff morale; and minimized risk of stockouts and overstocking. Local staff from several facilities, including [a nursing assistant from Leribe](#), [a midwife from Berea](#), and [a pharmacy technician from Maseru](#), have spoken about their experience with this training and the impact it has on their work

In **Mali**, GHSC-PSM provided technical support to the Regional Health Directorate (DRS) in organizing programmatic and logistical data analysis. The project met with stakeholders in the Bamako District to improve the quality of logistical and programmatic data for malaria, HIV, and maternal and child health programs. GHSC-PSM worked with the DRS to analyze logistics data from the different health districts and identify challenges and opportunities to improve the quality of data provided by District Health Information Software 2 (DHIS2) and Outil de Suivi des Produits de Sante (OSPSANTE), two web-based data tools for managing essential health commodity logistics and patient information. GHSC-PSM will continue to support the DRS in implementing recommendations from the meeting, including further integrating data into the national database and providing DHIS2 and OSPSANTE training to DRS and health facility staff.

In **Nigeria**, GHSC-PSM is improving laboratory efficiency and safety. As in many countries, the project supports laboratories by establishing service-level agreements with equipment manufacturers/vendors and providing reagents and other consumables to optimize lab operations. The project is also working to prevent liquid waste from government laboratories ending up in public drainage systems. GHSC-PSM provided giant tanks for four PCR labs to temporarily contain waste before a third-party environmental management solutions company transports it for safe disposal through high-temperature incineration. This USAID initiative is a positive step toward addressing this issue and ensuring the safe disposal of waste, which will benefit the public and the environment.

In **Zimbabwe**, GHSC-PSM participated in three HIV prevention working groups in Q2. The VMMC Service Delivery, Training and Logistics Technical Working Group (TWG), the VMMC Steering Committee Meeting, and the PrEP TWG are held quarterly. The TWG is attended by the MOH (Program and Directorate of Pharmacy Service) and implementing partners, while the Steering Committee Meeting is attended by the same members with the addition of VMMC program funders. The Steering Committee Meeting focused on strategic discussions and the need for the return of an Adverse Events Committee. The recent VMMC TWG included a VMMC program update, a logistics update from the Program and Directorate of Pharmacy Services, and partner updates on achievements, challenges, and planned activities. The PrEP TWG shared national PrEP program achievements for calendar year 2022, discussed PrEP training for health care workers, and updated attendees on the status of PrEP commodities. The Program and Directorate of Pharmacy Services represented the MOH. Other organizations that attended included local HIV prevention, care, and treatment nongovernmental organizations and clinical partners. Participants noted that activity performance for the period under review surpassed set targets, and the 2023–2026 targets were reviewed in light of this milestone.

Also, in **Zimbabwe**, GHSC-PSM hosted the Directorate of Laboratory Services (DLS) Central Level Meeting in Q2. The meeting brought together DLS provincial laboratory leadership and representatives from several development partners working in the laboratory space. Discussion areas included strengthening of supply chain management at the facility level, upcoming activities in the HIV program, and strategies for optimizing integrated specimen transportation. In Q2, the project collaborated with the DLS on a laboratory assessment, assisting with the development of the scope of work, identification of data collection tools, recruitment of the consultant, and administration and transport for the assessment teams. Five teams assessed all laboratories across the 10 provinces, and findings will be disseminated in Q3 to inform the strategy to strengthen the supply chain for laboratory services.

## B2. Malaria



Delivered more than **501 million** artemisinin-based combination therapies (ACTs) to treat **malaria infections over the life of the project**, including **18.3 million** in Q2.



**23 countries<sup>25</sup>** are receiving health supply chain systems strengthening support with malaria funding in FY 2023.

A total of **22 countries procured** malaria medicines and commodities in Q2, 31 over the life of the project.



Delivered enough long-lasting insecticide-treated nets (LLINs) to provide **protection from malaria for more than 15.9 million people in Q2 and 546.8 million people over the life of the project.**

GHSC-PSM's activities are focused on supporting achievement of the five goals outlined in PMI's 2021–2026 strategy: reaching the unreached, strengthening community health systems, keeping malaria services resilient, promoting innovation, leading malaria elimination, and supporting PMI stockout reduction initiatives in malaria task order (TO2) countries.

### COST SAVINGS ON MALARIA COMMODITIES

Commodity cost savings on core malaria products reached \$244 million over the life of the project, including \$33 million in savings in the first half of this fiscal year. This represents 23 percent of the total procurement value for these core commodities over the life of the project, and 20 percent of total procurement value for all malaria products over the life of the project.

Savings on ACTs totaled \$9.6 million in Q1 and Q2. Despite price increases for several ACT products this term, costs remain below original baseline prices<sup>26</sup>, and savings continue to accrue.

Cost savings for LLINs continued to grow, amassing \$6.6 million in the first half of FY 2023. Savings are now driven almost entirely by piperonyl butoxide (PBO) nets, as most countries are phasing out single pyrethroids. While current average prices for PBO nets remain below baseline prices, funding delays

<sup>25</sup> GHSC-PSM provides health supply chain system strengthening support with funding for malaria for the following countries: AFRICA: Angola, Burundi, Burkina Faso, Cameroon, Ethiopia, Ghana, Guinea, Kenya (TO5), Liberia, Malawi, Mali, Mozambique, Niger, Nigeria, Rwanda, Sierra Leone, Uganda, Zambia, Zimbabwe; ASIA: Burma (Myanmar), Cambodia, Laos, Thailand. Additional short-term assistance was provided in Madagascar.

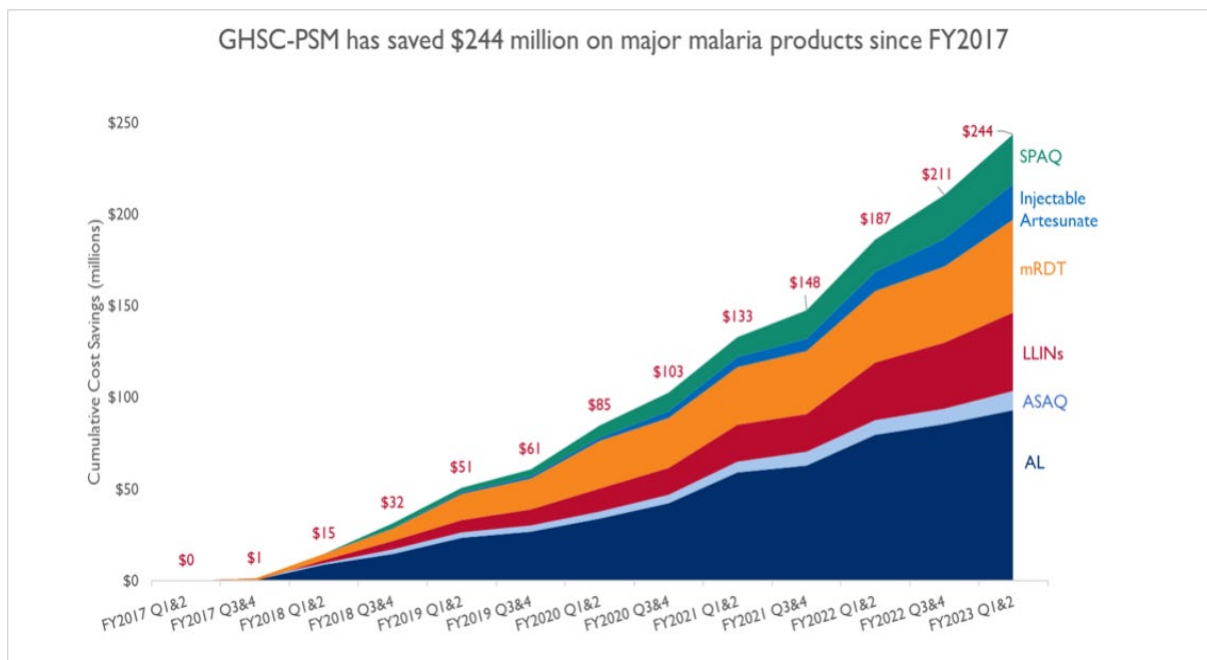
<sup>26</sup> Commodity cost savings are calculated by comparing average baseline prices of when commodity costs were first tracked (for most commodities, 2017 or 2018) to current average commodity prices, adjusted for inflation.

during this period led the project to procure from higher-priced vendors with greater capacity to meet shorter fulfillment lead times. This resulted in an increased average price per net compared to recent periods. Most LLIN funding delays were due to competing product priorities. When countries with limited funding have multiple upcoming requested delivery dates for various malaria commodity types, the project and PMI will prioritize fulfilling pharmaceutical and RDT products and allocate funding for LLINs in the next country obligation.

GHSC-PSM achieved \$9.7 million in cost savings for malaria rapid diagnostic tests (mRDTs) in the first half of FY 2023. The mRDT market remains competitive and priced below the baseline. Savings accrued rapidly this period due to a surge of orders, nearing 90 million tests for the project’s core mRDT product.

GHSC-PSM also generated about \$3.6 million each in savings on artesunate injectable 60 mg vials and sulphadoxine-pyrimethamine + amodiaquine (SPAQ), because these commodities remain below baseline prices. Pricing for artesunate injectable has been stable in recent periods. SPAQ saw price improvements due to increased competition in the market.

Exhibit 9. Life-of-Project Savings on Malaria Commodities



## Commodity Sourcing, Procurement, and Delivery

GHSC-PSM assesses market conditions and the sources of critical commodities—key starting materials (KSMs) and active pharmaceutical ingredients (APIs). The project uses these assessments to develop strategies that ensure product availability and accessibility.

### Commodity risk profiles

Commodity risk profiles visualize volumes shipped from suppliers, by geographic region. The team reviews each commodity category to identify challenges or risks in a given period and shares updates on the status of each active order. Risks and challenges shared with PMI and responded to in Q2 included the following:

- Chinese Lunar New Year shutdowns resulted in several weeks of manufacturing closures, shipping delays, and backups at ports during the holiday affecting three orders of **artesunate injectable** for Angola, Mali, and Uganda. This led to a three-week delay in goods being available for pick-up due to supplier closure. However, the delays did not result in any country-level stockouts.
- Senegal submitted an urgent request for **artesunate injectable**, which the project responded to by expediting and logistics processes for all five pending Senegal procurements. GHSC-PSM also released one order of syringes; while four orders remained in QA processing.
- The project identified an overstock of 18,865 (60mg) vials of **artesunate injectable** in Rwanda, and identified Ghana as a country in need of this stock, which is currently in process of being transferred from Rwanda to Ghana with an estimated delivery in Q4.
- The project expedited DRC's **rectal artesunate suppository (RAS)** order to prevent a country-level stockout.
- GHSC-PSM preponed orders and expedited logistics and QA processes for **sulphadoxine + pyrimethamine (SP)** to avoid a potential stockout in Zambia. One supplier constructed a new manufacturing facility and an automated high-rise warehouse to expand its production and storage capacity by 12,000 pallets.
- GHSC-PSM transferred overstocked **artemether-lumefantrine (AL)** from Zimbabwe to Senegal and Zambia to mitigate country-level stockouts.

### ***Strategic Sourcing and Supplier Relationship Management***

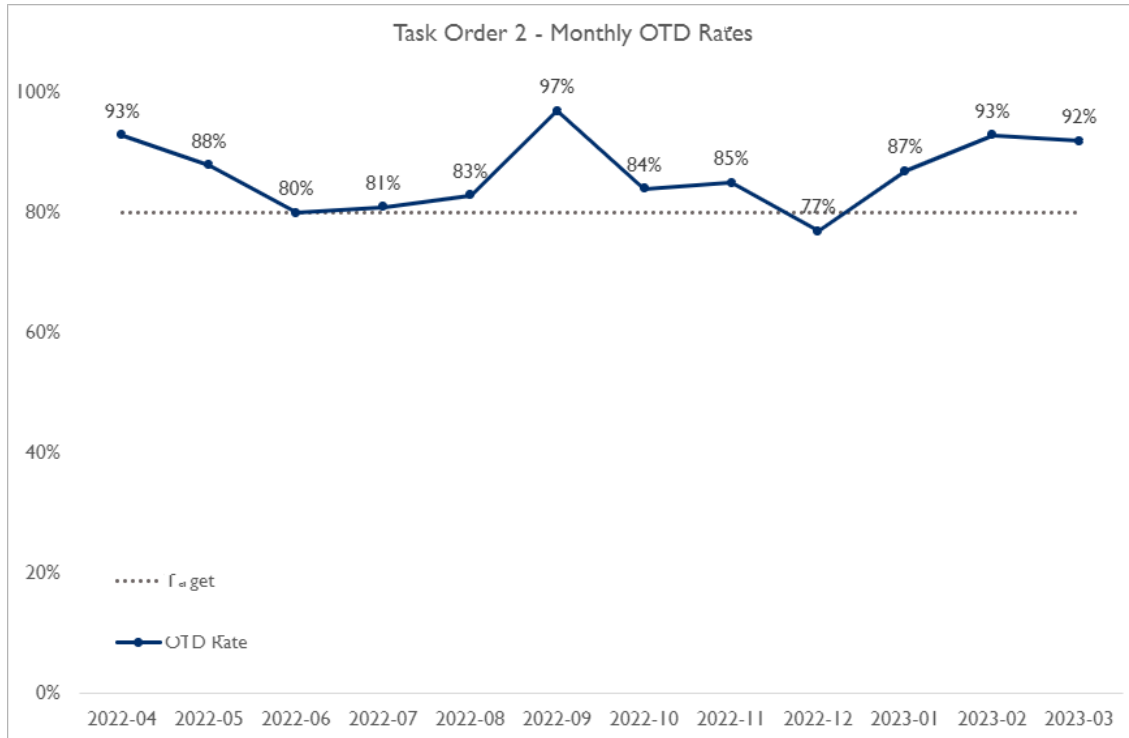
The project engages in bi-annual business review meetings with key suppliers to discuss supplier performance, current orders, and strategic topics related to each commodity category such as key starting material, API, or component constraints within the supply chain. In Q2, GHSC-PSM hosted in-person and virtual meetings with suppliers of mRDTs and LLINs. The project explored the opportunities and challenges in establishing new and/or expanding existing manufacturing and/or warehousing capacity on the continent of Africa to inform its FY 2024 LLIN sourcing strategy. Suppliers provided insights on the feasibility of switching insecticides and net types on manufacturing lines, such as changing from a PBO net to a dual active ingredient net in a single production facility to better use the facility and to be agile to changing insecticide resistance in countries.

**Procurement and deliveries**

In Q2, GHSC-PSM procured malaria commodities for 22 countries<sup>27</sup> with a total value of \$54 million.

**OTD and OTIF.** The timeliness of GHSC-PSM deliveries remained consistent and robust for standard OTD and OTIF. In Q2, the OTD rate for malaria commodities was 91 percent (see Exhibit 10). The OTIF rate in Q2 was 90 percent.

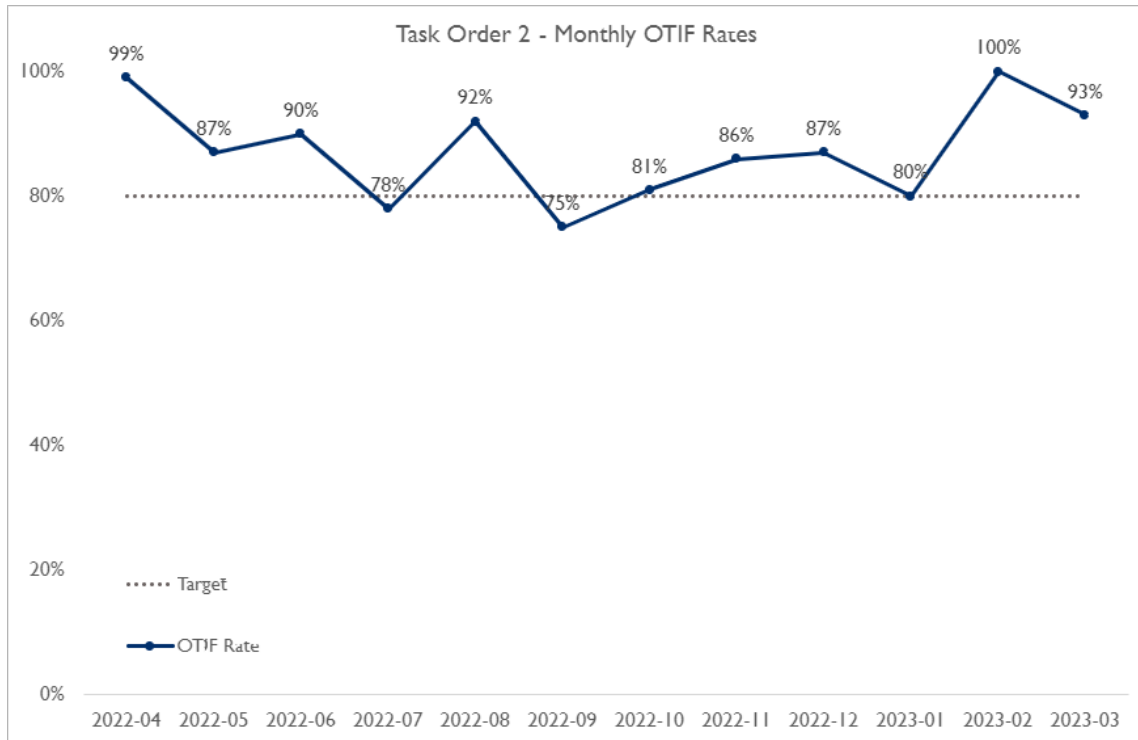
Exhibit 10. Malaria Commodities, OTD



<sup>27</sup> GHSC-PSM procured malaria commodities for the following countries: AFRICA: Angola, Burundi, Burkina Faso, Cameroon, Ghana, Guinea, Kenya, Liberia, Madagascar, Malawi, Mali, Mozambique, Niger, Nigeria, Senegal, Sierra Leone, Tanzania, Uganda, Zimbabwe, ASIA: Laos, Thailand, Burma/Myanmar.



Exhibit 11. Malaria Commodities OTIF



**Global sourcing collaboration**

GHSC-PSM participates in the Malaria Pharma Task Force,<sup>28</sup> mRDT Task Force,<sup>29</sup> Vector Control Access Task Force,<sup>30</sup> and LLIN donor collaboration call.<sup>31</sup> These groups provide a valuable forum for exchanging information on market risks and promoting improved collaboration across the global malaria community. They are supplemented by one-off working sessions and communications to discuss acute risks, issues, and opportunities.

<sup>28</sup> Pharma Task Force members include Clinton Health Access Initiative (CHAI), Bill & Melinda Gates Foundation (BMGF), GHSC-PSM, the Global Fund, Impact Malaria, the Malaria Consortium, Medicines for Malaria Venture (MMV), Médecins Sans Frontières (MSF), Pan-American Health Organization, PATH, PMI, UNICEF, and World Health Organization (WHO).

<sup>29</sup> mRDT Task Force members include CHAI, Foundation for Innovative New Diagnostics, BMGF, the Global Fund, the Malaria Consortium, MSF, PATH, PMI, GHSC-PSM, UNICEF, United Nations Development Program, Unitaid, and WHO.

<sup>30</sup> Vector Control Access Task Force members include the Against Malaria Foundation (AMF), CHAI, BMGF, GHSC-PSM, the Global Fund, Innovative Vector Control Consortium, International Federation Red Cross, MMV, MSF, PMI, Population Services International, Results In Health, UNICEF, Unitaid, and WHO.

<sup>31</sup> LLIN Donor Collaboration calls include members from AMF, GHSC-PSM, the Global Fund, and UNICEF.

GHSC-PSM plays a continuous role in the Malaria Pharma Task Force and KSM/API working group, which increases visibility and identifies and mitigates risks related to the upstream supply chains of finished malaria pharmaceutical products.

In Q2, the KSM/API working group reviewed data on the average weighted pricing of vegetal artemisinin over the last five years, which is at its lowest price, making the use of semi-synthetic artemisinin (SSA) in finished pharmaceutical products less attractive in the near term. These data are being used to evaluate and inform future incentivization of the use of SSA in finished pharmaceutical products.

*Pf* histidine-rich protein (*hrp2/3*) gene deletions are on the rise, prompting increasing country demand for parasite lactate dehydrogenase (pLDH) mRDTs. In Q2, the mRDT Task Force received an update from the WHO PQ on a mapping initiative that it is leading with Clinton Health Access Initiative (CHAI) and other researchers to identify regions that are at risk of HRP2/3 gene deletion and areas where HRP2/3 gene deletion may emerge. WHO PQ is targeting Q3 to complete the mapping exercise demonstrating risk areas and to update the mRDT Task Force.

### **Stockpile Strategy and Vendor Stored Inventory**

GHSC-PSM uses the Belgium RDC to fill essential and/or urgent malaria commodity orders for products such as SPAQ and AL. The project rapidly moves commodities by leveraging a rotating emergency loan fund to secure large volumes of supplier production capacity in markets where the supply is constrained. GHSC-PSM places orders based on data-driven demand signals to secure production capacity earlier in the ordering process—often in advance of receiving orders.

The project uses the stockpile in the RDC to access critical commodities when countries need them, to reduce fulfillment lead times, and to hedge uncertainty and disruption in the markets. These strategies are partially informed through demand data—derived from quarterly country supply plans and the monthly procurement planning and monitoring report for malaria (PPMRm)—which the project translates into the country stock risk dashboards that illustrate the timing and scope of upcoming stock risks. The project designs these strategies to mitigate future stockout risks, ensure timely delivery in constrained markets, and avail favorable market conditions (favorable pricing, etc.).

GHSC-PSM began implementing a Vendor Stored Inventory (VSI) strategy at the end of Q1. The RDC stockpile and VSI are critical strategies the project employs to take action in meeting emergency orders, which are defined as orders with less than four-month lead time from the requisition order entry date and requested delivery date, and to fulfill urgent orders, defined as orders with more than a four-month lead-time but less than the standard lead time to be met through routine procurement. These strategies work in tandem in that an emergency order, the first priority is to fulfill the order fully or partially from the RDC stockpile. In the event the RDC stockpile does not suffice to meet the need, GHSC-PSM has the option of fulfilling the emergency order through VSI. The project uses VSI as a first option in meeting urgent orders, however, in the event of dwindling shelf life at the RDC, the stockpile may be used.

The project negotiated VSI and completed contract negotiations with ACT suppliers of AL products; this is the first negotiation of VSI for the malaria task order. In Q2, GHSC-PSM initiated the procurement of AL

20/120mg hard tablets with the two suppliers that GHSC-PSM has VSI contracts with, to fulfill urgent orders for Côte d'Ivoire and Nigeria.

## **Quality Assurance**

### ***Collaboration***

In Q2, the project participated in a steering group initiated by Innovation to Impact (I2I) and CHAI. This group will be meeting routinely to provide input into the post-market module (Module 7) to update the draft [WHO Guideline for Prequalification of Insecticide Treated Nets \(ITNs\)](#) until the new guidelines are finalized. The steering group and WHO-Prequalification (PQ) team discussed data requirements and data collection processes, as well as integration of the group's feedback into the updated guidelines.

The project continues to play a leadership role among global stakeholders in the LLINs QA space as Chair of the LLINs Quality Assurance Group (LQAG). In Q2, the LQAG and an industry group (made up of manufacturers and suppliers) discussed how LQAG can contribute post-market information using its expertise in quality assurance. The LQAG and the chairperson of the industry group also discussed the requirement for manufacturers to have completed non-inferiority studies for PBO nets to be eligible for procurement and obtained feedback from global procurers on non-inferiority studies performed thus far. The procurers on the LQAG communicated that the non-inferiority study fulfilled their requirements for the transition from the WHO Pesticide Evaluation Scheme to WHO-PQ. The global procurers indicated that they are open to addressing the data requirements when the new WHO Guideline for Prequalification of ITNs is finalized and implemented.

In Q2 GHSC-PSM, PMI, and the Global Fund Quality Assurance team met to review current WHO Listed Authority (WLA) products to gain an understanding of each procurement agencies' intention and process for transitioning stringent regulatory authority (SRA) and other regulatory authority products to WLA. The group also discussed eligibility requirements for global procurers of pharmaceutical products and medical devices. After the meeting, global procurers provided feedback on developing the WLA list, but indicated that they had no immediate plans to transition to WLA for product eligibility.

### ***Implementing strategies and innovations***

In Q2, GHSC-PSM worked to update the certificate of conformance (CoC) report with the appropriate shelf life and lifespan requirement for LLINs, given that the product is not like pharmaceuticals and mRDTs that have clearly defined expiration dates. The project submitted targeted questions to suppliers in GHSC-PSM's portfolio to understand how they were defining the shelf life and lifespan of their LLINs. GHSC-PSM then summarized supplier responses and identified variations in suppliers' definitions of these attributes. The project then proposed using the Manual of the Food and Agricultural Organization and WHO specifications for chemical pesticides as the standard for the shelf-life of GHSC-PSM-procured nets. ([JMPS Manual 1st edition 3rd revision ENG March 2016 who.int](#)), PMI accepted the proposal and the project updated the CoC template for LLINs accordingly.

### ***Fostering quality in pharmaceuticals***

In Q2, GHSC-PSM investigated a preliminary out-of-specification (OOS) for AL 20/120mg from one of its suppliers. Three out of four batches in one order and four out of six in another order were OOS for assay content. The assay result showed that the product was within the shelf life specification but was OOS for the product release specifications, which are more stringent than the shelf-life specification. GHSC-PSM performed a hypothesis test and found that limiting the peak markings during the High-Performance Liquid Chromatography (HPLC) run skewed the result. The project incorporated this methodology into the testing protocol for future batches and flagged it for future method transfers. As the OOS did not compromise product safety and efficacy, GHSC-PSM recommended release of the batches to PMI and obtained concurrence.

In Q2, GHSC-PSM reviewed the supplier's certificate of analysis for procured batches of AL 20/120 and observed changes in one supplier's testing methodology. The project coordinated with a third-party laboratory to perform a method transfer using the updated method to avoid testing delays for upcoming orders.

### ***Fostering quality in mRDTs***

In Q2, GHSC-PSM observed an increase in issues concerning mRDTs and initiated a root cause review to determine the appropriate corrective action and preventive action (CAPA) to address them. The project summarized mRDT investigations conducted over the past two years to understand the stimuli behind the increase in incidents. Further, GHSC-PSM subcategorized complaints and issues and aggregated them based on their similarities. The root cause review revealed that end users primarily preferred inverted cups and round lancets to pipettes and blade lancets. As CAPA, the project requested that suppliers update their product kit components to include inverted cups and round lancets. The suppliers made the updates and submitted the change request to the WHO-PQ for approval. The review also showed that end users did not adhere to a particular brand's instructions for use (IFUs) due to familiarity with a different brand. As CAPA, the supplier created video instructions to improve IFU compliance and GHSC-PSM reduced the variation in brand types for recipient countries where feasible. Further, the supplier developed a universal job aid to help end-users adhere to IFUs.

### ***Fostering quality in LLINs***

In Q2, one LLIN supplier notified GHSC-PSM of its new manufacturing site. The project performed a desk review of the new site and found that it met the standard requirements—local registration, ISO 9001 certification, and WHO-approved manufacturing site certification. GHSC-PSM approved the new site and added it to the eligibility list.

In Q2, the project delivered two PBO net orders to Rwanda. GHSC-PSM collaborated with the Rwanda MOH and the supplier to conduct a post-shipment inspection as per the standing quality agreement in which the supplier, the Rwanda Biomedical Center (RBC), and Rwanda Medical Supply Ltd established the number of samples required for inspection in alignment with defect categorization and aggregation. The nets met quality requirements, and Rwanda accepted them.

## **Promotion of Supply Chain Market Health**

In Q2, the project completed method transfer and method verification for three products (see Exhibit 12).

Exhibit 12: Products that Completed Method Transfer and Method Verification

<b>Product name</b>	<b>Activity Type</b>
AL 20/120 mg dispersible tablets	Method Transfer
AL 20/120 hard tablets	Method Transfer
Quinine tablets	Method Verification

### **Product Review for Eligibility**

Quality reviews facilitate the addition of products to the Restricted Commodity Waiver list governed by USAID Automated Directives System 312, making the product eligible for procurement (see Exhibit 13).

Exhibit 13: New Products Eligible for Procurement in Q2

<b>Product category</b>	<b>Product subcategory</b>	<b>Product detail</b>
Pharmaceutical	SP	SP 500/25
Pharmaceutical	ACT	DHA-PPQ (60/480) hard tablet
Pharmaceutical	ACT	DHA-PPQ (30-240) dispersible tablet

mRDTs	mRDTs	Pf HRP-II (10 and 25 tests/kit)
LLINs	LLINs	Single pyrethroid and PBO (new manufacturing site)
Topical repellent	Topical repellent	20% picaridin spitz 100ml

As part of this effort, PMI requested GHSC-PSM to procure topical repellents to prevent malaria for the first time. In Q2, GHSC-PSM generated the technical requirements for procuring topical repellents, reviewed the topical repellent RFP respondent feedback, and completed the full eligibility review of the winning product.

**Key performance indicators**

In Q2:

- GHSC-PSM completed a total of 85 percent of QA/quality control (QC) processes within the required lead times, above the target of 80 percent.
- OOS findings are at 0.3 percent of batches tested, below the target of 1 percent.
- 100 percent OOS reports were finalized in Q1 and Q2 within 30 days of completing the investigation.
- Cost savings generated totaled \$106,177.92 as a result of using randomized testing instead of testing all batches.

**Adoption of Standard-based Identification, Barcoding, and Data Sharing**

GHSC-PSM is working on identification, barcoding, and data-sharing requirements for procured malaria products, thus fostering data visibility and exchange. By the end of Q2, compliance scores achieved by area of standards implementation for 205 in-scope malaria items (those that were actively procured in the past, and available for procurement in the future) included:

- Identification (Global Trade Item Number/Global Location Number collection): 99 percent
- Capturing (Standards-compliant barcoding on labels): 94 percent
- Sharing (Global Data Synchronization Network data synchronization): 93 percent

Additional information and milestones for global standards implementation in Q2 are included in Section C.

### **Priority Setting and Redirection of Orders**

GHSC-PSM works with USAID to address country needs and market constraints, prioritize orders based on need, and conduct commodity order transfers to improve stock status.

In Q2 the project:

- Delivered 5,759 packs of AL 20/120 mg 6x4s from the RDC stockpile to Liberia to prevent a stockout.

In Q2, 29 countries submitted data to the Procurement Planning and Monitoring Report for malaria (PPMRm). The PPMRm collects and reports information on stock status and host governments' and other donors' shipments. Visibility into this stock status and shipment information enables PMI, the project, and countries to make decisions on prioritizing, expediting, or delaying procurements or shipments, as well as facilitates the review of forecasts and supply plans to optimize procurements. Based on PPMRm data, GHSC-PSM:

- Expedited AL 20mg/120mg 6x4 blisters to prevent a stockout in Mali.
- Advocated with the National Malaria Elimination Program in Ghana to expedite an upcoming shipment of AL 20mg/120mg 6x4 blisters from the Global Fund to prevent a stockout.
- Expedited RAS 100mg to prevent stockout in Zambia.
- Expedited AL 20mg/120mg 6x1 blisters to prevent a stockout in Nigeria.

### **Malaria Community Health Worker (CHW) Supply Chain Advocacy Paper and Landscape Analysis**

In Q1, GHSC-PSM submitted an initial draft of the malaria CHW advocacy paper to PMI for review. The advocacy paper encourages the inclusion and strengthening of the community level in the supply chain and highlights some best practices for long-term investment, targeting community health facilities and community health workers. In Q2, the project conducted a pre-publication editorial review of the advocacy paper and plans to submit the final version to PMI in Q3 FY 2023.

In Q2, the project incorporated PMI feedback into the Malaria Community Supply Chain Landscape Analysis Survey 2022 and presented a final draft to PMI. The survey collected data from 55 key informants across 27 PMI-supported countries. PMI and GHSC-PSM agreed that country-specific survey outputs should be considered when developing approaches for implementing malaria community supply chain activities in each PMI-supported country.

### **Development of a Modeling Tool and Guidance for Inventory Management for Low-Malaria-Endemic Settings**

Some countries with low malaria endemicity are concerned that low consumption of malaria products could result in product expiries and additional expenses incurred from product redistributions between facilities. To address this challenge, GHSC-PSM is developing a modeling tool and guidance for inventory management to support malaria operations and optimize supply chain management in these settings. Between Q4 FY 2022 and Q1 FY 2023, GHSC-PSM collected malaria supply chain system information to design the tool from Cambodia, Ethiopia, and Thailand, which are in malaria elimination and pre-elimination phases. This information included background on their contexts and supply chain management challenges for low consumption or slow-moving commodities. In Q2, the project used this information to develop a tool to test different scenarios using case information as a surrogate for consumption data, which is relevant in tracking malaria cases—a key metric in malaria elimination surveillance activities. The tool allows users to plug in data to test stockpiling and distribution strategies and calculates the cost of these scenarios, and their relative risk of leading to expiries or stockouts. The tool can be used in any country with any currency. GHSC-PSM began testing the tool with sample data from Cambodia in Q2. The next step will be to refine the tool and develop guidance for countries to test the tool in Q3 and Q4.

### **Workforce Development Qualitative Assessment**

In FY 2021, USAID funded the collection of country data to understand the scope of USAID’s financial investments in workforce development (WFD) between FY 2017 and FY 2020. USAID used these data to identify activities that achieved the most success and those that posed the greatest challenges and to make recommendations on which activities to prioritize, expand, or adapt. Activities and budgets were categorized by training type (in-service, pre-service, supportive supervision, mentoring, coaching, and secondment, etc.).

In Q2, GHSC-PSM began using these data to conduct a qualitative assessment of WFD activities in PMI-funded countries, starting with Malawi. The project worked on case definition, protocol design, a qualitative interview guide, and an online survey questionnaire, and submitted them to the Malawi country team for review. The initiative will expand to additional countries in the latter half of FY 2023.

### **Malaria Commodities Accountability Initiative**

In Q1, GHSC-PSM drafted a malaria product accountability tool guidebook to help country stakeholders identify discrepancies between the total number of malaria cases reported in DHIS2 and the number of malaria products consumed according to the logistics management information system (LMIS) during reporting periods. The tool also helps stakeholders conduct root-cause analysis and determine interventions to improve accountability for malaria commodities.

In Q2, the project incorporated PMI feedback into the draft guidebook. In Q3, GHSC-PSM will submit the final draft to PMI for approval and establish a timeline to pilot the guidebook and associated tools in select countries.

### **LLIN Delivery and Distribution Support**

In Q2, GHSC-PSM delivered 7.98 million LLINs to countries for distribution as a malaria prevention measure (Exhibit 14). Through this initiative, communities received nets before the rainy season through campaigns and year round through routine distribution. In some countries, the project provided



transportation support through third-party logistics (3PL) service providers to deliver LLINs from the central level to district or health facility levels for continuous distribution or mass distribution. In Q2, nine countries<sup>32</sup> prepared for or launched LLIN mass distribution campaigns.

Exhibit I4. Quantity of LLINs Delivered to Countries in Q2 FY 2023

Country	Number of LLINs Delivered
Burma	150,000
Burundi	128,755
Democratic Republic of Congo	403,400
Ethiopia	2,990,605
Ghana	140,000
Liberia	150,000
Nigeria	397,332
Rwanda	701,700
Tanzania	525,700
Thailand	80,300
Uganda	2,316,842
<b>Total</b>	<b>7,984,634</b>

In Q2, GHSC-PSM supported LLIN distribution activities:

- In **Ethiopia**, GHSC-PSM supported the use of cross-docking as a just-in-time and cost-saving method for distributing LLINs. In Q2, the project deployed technical experts to the Adama warehouse to coordinate smooth cross-docking transactions between the customs clearance team, the vendor, distributors, and the Ethiopian Pharmaceutical Supply Service (EPSS). The warehouse cross-docked 2,743,550 LLINs to EPSS regional hubs and these hubs further cross-docked 2,742,450 LLINs to 105 woredas (1,100 LLINs stayed at the regional hubs to be consolidated with other deliveries). The remaining 247,055 LLINs meant for Assosa remained at the central EPSS Adama warehouse as the road to Assosa was not safe during the quarter. They will be delivered to Assosa in Q3. With GHSC-PSM assistance in coordination, the regional EPSS branches expedited the cross-docking distribution directly from the branches to woredas under

<sup>32</sup> Ethiopia, Liberia, Laos, Thailand, Uganda, Zimbabwe, Nigeria, Ghana, and Malawi

their catchment areas as soon as the EPSS branches and the central warehouse notified them about incoming shipments to a specific branch.

- In **Liberia**, routine deliveries and school-based deliveries continued in Q2. GHSC-PSM, in collaboration with MOH sub-regional teams, delivered 23,514 LLINs through routine distribution, and 69,653 LLINs through the school-based distribution program.
- In **Uganda**, the project collaborated with the MOH National Malaria Control Division to conduct routine net distribution to service delivery points (SDPs) in both the public and private-not-for-profit sectors in PMI-mapped districts. GHSC-PSM developed a distribution and monitoring plan to expedite the delivery of the nets to SDPs and avoid duplication of effort with The AIDS Support Organization, a Global Fund principal recipient. The Joint Medical Store (JMS), in coordination with NMCD and the District Health Offices (DHOs), implemented the distribution and monitoring plan. This collaboration facilitated the distribution of 560,960 LLINs in Q2.

## Country Support

In FY 2023, GHSC-PSM has supported the strengthening of supply chain systems for malaria medicines and commodities in 23 countries.<sup>33</sup> Some highlights from Q2 include:

In **Niger**, GHSC-PSM collaborated with Catholic Relief Services (CRS) to identify and address malaria commodity funding needs for 2023 and Q1 FY 2024 that were then approved by the National Malaria Control Program (NMCP). Based on this information, the NMCP secured an additional \$4.5M from the Global Fund and PMI to fill the funding gaps. Using PMI funds, GHSC-PSM began malaria commodity procurement needed to meet demand during the high transmission season (July to December).

In **Uganda**, GHSC-PSM worked with Radley Corporation to begin Phase 2 of barcoding support to JMS. In Phase 1, JMS used the barcoding system to receive commodities. In Phase 2, the project extended barcoding to other warehouse functions, including put-away, selection, and dispatch. GHSC-PSM also procured and installed additional equipment to implement barcoding in three JMS regional warehouses.

In collaboration with the MOH and the Nursing and Midwifery Council of **Zambia**, GHSC-PSM trained trainers in supply chain management of ARVs, essential medicines, and malaria commodities. The project trained 24 lecturers and tutors from nursing and midwifery colleges and one GHSC-PSM staff member. GHSC-PSM also conducted two in-service trainings for 49 health workers, of which 45 (91 percent) obtained competence certificates.

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<sup>33</sup> GHSC-PSM provided technical assistance to countries with malaria funding: AFRICA: Angola, Burkina Faso, Burundi, Cameroon, Ethiopia, Kenya (TO5), Ghana, Guinea, Liberia, Malawi, Mali, Mozambique, Niger, Nigeria, Rwanda, Sierra Leone, Uganda, Zambia, and Zimbabwe; ASIA: Burma, Cambodia, Laos, and Thailand

### B3. Family Planning and Reproductive Health



To date, GHSC-PSM has delivered enough contraceptives to provide **94 million couple-years of protection**, including **4 million in Q2**.



**Procured FP/RH commodities<sup>34</sup> for 18 countries<sup>35</sup>** in Q2, and provided **health supply chain systems-strengthening support to 20 countries<sup>36</sup> in FY 2023** with FP/RH funding.



Continued to successfully fulfill USAID-supported countries' orders in a timely manner, **achieving 86 percent OTD** in Q2.



In Q2, GHSC-PSM placed the project's **first-ever order of the medroxyprogesterone acetate injectable contraceptive (MPA-IM) 20-package configuration** for delivery to Zambia.

The FP/RH task order (TO3) serves as the primary vehicle through which USAID procures and provides FP/RH commodities for its voluntary FP programs; offers technical assistance to improve supply systems and contraceptive security in partner countries; and provides technical leadership to strengthen the global supply, increase financing, and introduce new FP/RH commodities.

#### COST SAVINGS ON CONTRACEPTIVES

Commodity cost savings generated on core FP products reached over \$17 million over the life of the project, including \$3.9 million in savings in the first half of 2023. This represents 23 percent of the total procurement value for these core commodities and 14 percent of total procurement value for all FP

<sup>34</sup> Per USAID guidance, all condom procurements are counted under the HIV/AIDS task order.

<sup>35</sup> GHSC-PSM procured FP/RH commodities for the following countries: Afghanistan, Bangladesh, Angola, Benin, Burkina Faso, DRC, Ghana, Haiti, Madagascar, Malawi, Mali, Mozambique, Rwanda, Senegal, Tanzania, Uganda, Yemen, and Zambia.

<sup>36</sup> GHSC-PSM provided technical assistance with FP/RH funding to the following countries in FY 2023: Angola, Burkina Faso, Burundi, Ethiopia, Ghana, Guatemala, Guinea, Haiti, Kenya (TO5), Liberia, Malawi, Mali, Mozambique, Nepal, Nigeria, Rwanda, South Sudan, Uganda, and Zambia.

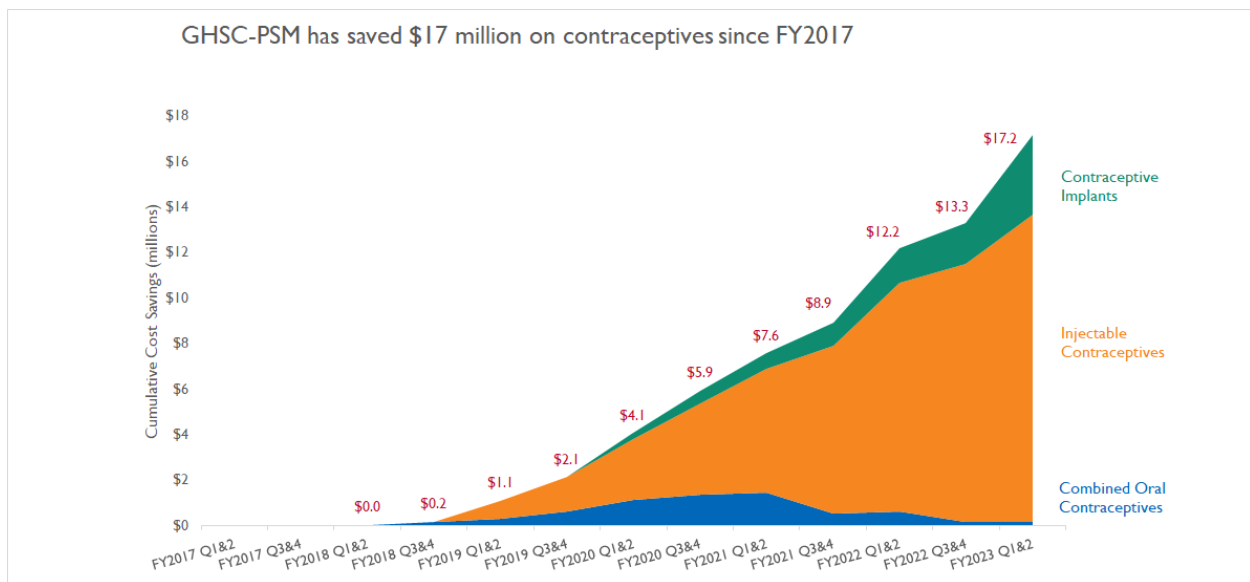
products in Q1 and Q2. The greatest drivers of cost savings were injectable contraceptives, having accumulated \$13.5 million in cost savings over the life of the project.

Procurement of MPA-IM generics continues to yield savings over baseline prices. Average prices decreased over Q1 and Q2, as 87 percent of order volume was allocated to generic suppliers. Strong order volume combined with generic pricing led to over \$2 million in savings in the first half of FY 2023 alone.

Two-rod implants saw a large order volume of nearly 1 million units in Q1 and Q2. While volumes were allocated more heavily toward the innovator product, the presence of a generic option helped keep average prices below the baseline and continue to generate cost savings.

Lastly, the project saw a decline in savings on combined oral contraceptives with non-iron placebo due to overall changes in the product’s marketplace. Price increases and declining volumes overall mean that oral contraceptives are no longer expected to be a significant source of commodity cost savings.

Exhibit 15. Life of Project Savings on Contraceptives



### Addressing FP/RH Priorities

In line with USAID’s FP/RH priorities, GHSC-PSM continued to strengthen its global supply operations and to collaborate with countries in building self-reliant supply chains.

#### **Securing reliable supply and maintaining high on-time performance**

In light of ongoing global supply shortages of one-rod implants, GHSC-PSM is coordinating with the Consensus Planning Group to ensure access to a continuous and reliable supply.

In Q2, GHSC-PSM faced extended lead times for combined oral contraceptives. To mitigate this challenge, the project regularly analyzed allocation of available stock, leveraged stock at the RDCs, and temporarily discontinued overbranding to avoid stockouts.

### Achieving OTD and OTIF

Timeliness of GHSC-PSM deliveries remained strong in Q2 for FP/RH commodities at 86 percent OTD. OTIF numbers remained strong and consistent, at 87 percent.

Exhibit 16. FP/RH Commodities, OTD

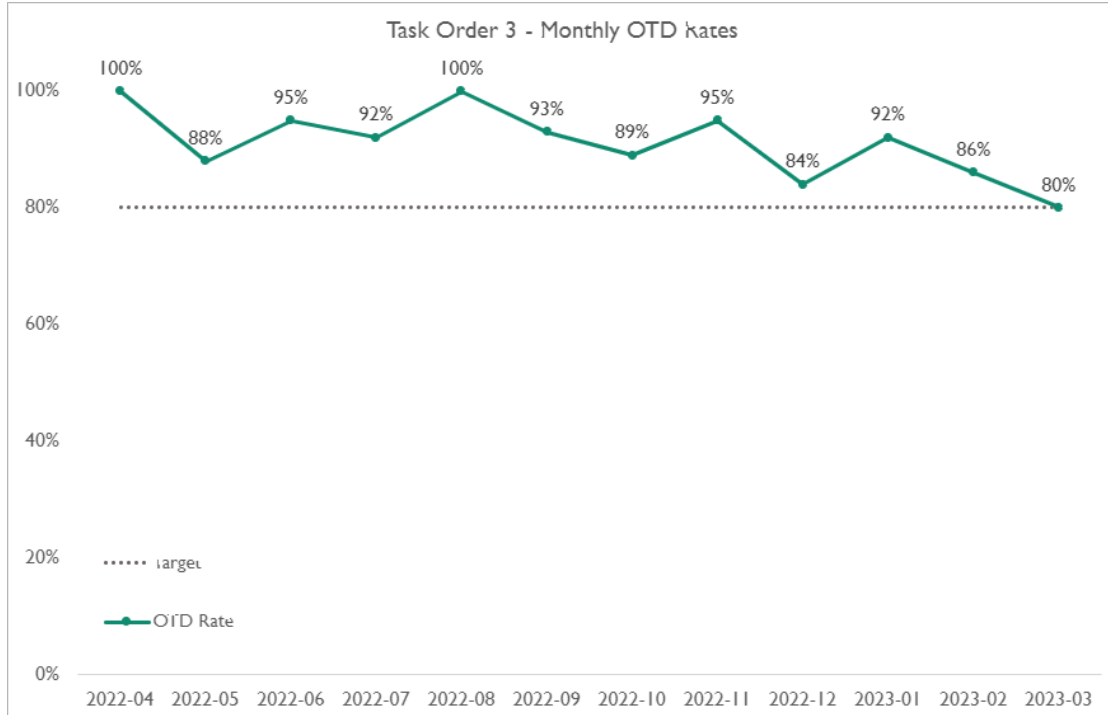
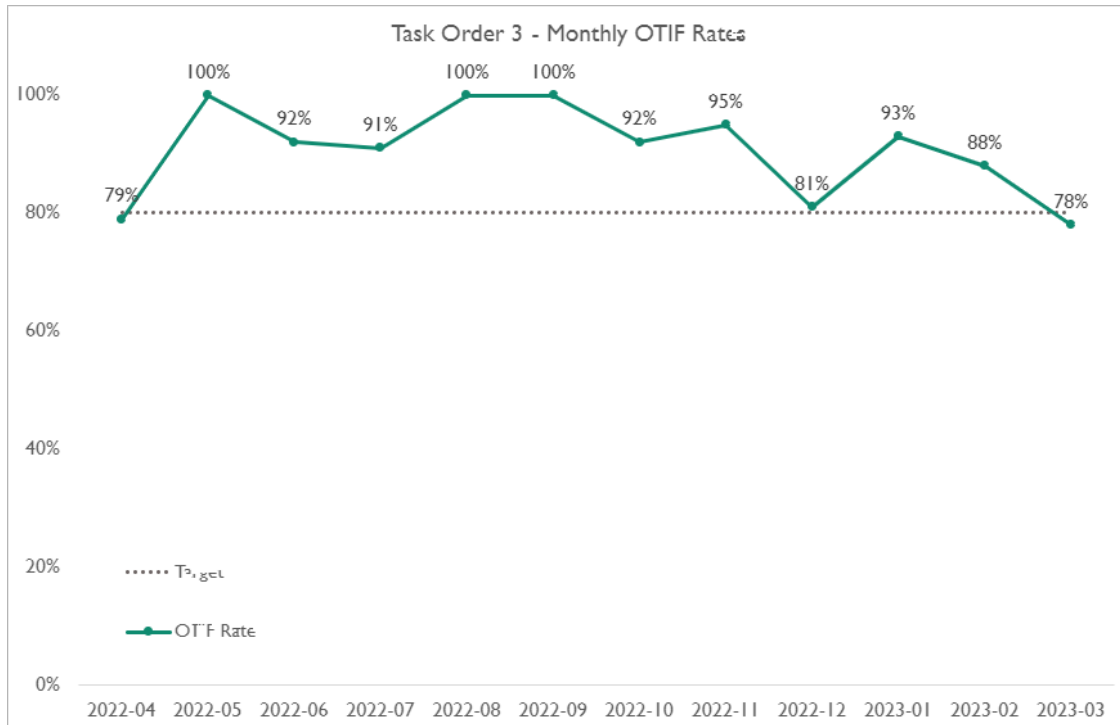


Exhibit 17. FP/RH Commodities, OTIF



**Progressive packaging**

In Q2, GHSC-PSM placed the project’s first-ever order of MPA-IM 20- package configuration for delivery to Zambia. This packaging solution includes 20 vials and 20 syringes bundled together in a small inner box, designed in response to in-country supply chain challenges. Stakeholders had reported difficulties receiving MPA-IM vials and ancillary syringes in equal quantities when packaged separately and had expressed a preference for bundled packaging of MPA-IM that included the same quantities of vials and syringes. Delivery to Zambia is expected in Q4. Following distribution in Zambia, GHSC-PSM will collect feedback from supply chain health facility workers who handle and use the new packaging and will develop recommendations for future procurements based on their experiences.

**Disseminating and refining the business case for local manufacturing in sub-Saharan Africa**

In Q2, IQVIA updated the business case for local manufacturing to account for revised assumptions including time to production and WHO prequalification, duration of a potential loan from a development bank, and percentage of the manufacturer market share in sub-Saharan Africa following the launch of medroxyprogesterone acetate subcutaneous injection, or MPA-SC, in South Africa. GHSC-PSM and IQVIA presented the updated business case to USAID at the end of Q2 and discussed potential opportunities for further investigation in FY 2024.

The project held a webinar in collaboration with IQVIA to present the FY 2022 business case for local manufacturing activity results to the Reproductive Health Supplies Coalition (RHSC) Market Development Approaches Working Group. More than 50 participants representing Bayer, CHAI, FP2030, Missionpharma, Unitaid, and USAID attended. IQVIA was also invited to participate in a regionalization workshop scheduled for Q3 2023.

### ***Supporting social marketing engagement activities***

GHSC-PSM engages with social marketing organizations (SMOs), which assist the project in working with MOHs to customize FP/RH commodity labeling according to their country requirements. In Q2, the project worked with SMOs to understand demand and develop supply plans, support product transitions, and liaise with local actors (SMOs, MOHs, Federal Drug Administrations, among others) and suppliers. The goal was to ensure compliance with regulatory requirements on overbranding, monitor product registration vis-a-vis product fulfillment, and track SMO brand transitions and SMO contract lifecycles to ensure the supply chain functions smoothly. GHSC-PSM also presented a progress report to USAID on the project's engagement with SMOs from the beginning of the project to date, segregating the data by branded product procurements versus unbranded per country.

### ***Updating a landscape tracker for government and parastatal outsourcing***

In Q2, GHSC-PSM validated data for the logistics landscape tracker. The tracker indicates which governments and parastatals are outsourcing supply chain services, either as the financier or contract holder. The tracker also details where the project is outsourcing warehousing and distribution services. To further validate the data, GHSC-PSM reached out to the International Association of Public Health Logisticians (IAPHL) network to solicit information on the current state of outsourcing supply chain services from the central warehouse to last-mile distribution points by governments or parastatals. GHSC-PSM will disseminate the findings in Q3 FY 2023.

### ***Sharing insights on supply chain mobile applications for community health workers***

In Q2, the project disseminated a landscape analysis of five mobile applications and supporting technical brief for supply chain management at the last mile. Organizations working with CHWs and their partners can use the analysis to identify appropriate mobile applications for capturing and sharing community health supply chain data. In Q2, the project's abstract on the landscape study was submitted and approved for presentation at the CHW Symposium in Liberia from March 21 to 24, 2023. The Liberia GHSC-PSM country director presented the abstract as a poster presentation. The symposium provided a platform for Ministry delegations, CHWs, and implementing partners to exchange ideas and discuss the work of CHWs. The project will continue to disseminate the findings internally and externally in Q3.

### ***Leveraging global market intelligence to inform supply planning***

GHSC-PSM conducted a webinar in Q2 titled "How can countries incorporate reproductive health market intelligence in the supply planning process?" to increase awareness of and access to available reproductive health market intelligence tools for in-country GHSC-PSM FP/RH focal points and USAID Mission staff.

### ***Presenting to USAID Missions on the Updated Procurement Impact Briefs***

The project participated in the USAID Commodity Security Logistics division’s “Call to the Field” webinar and presented the latest iteration of the procurement Impact Briefs, highlighting results from the Global Brief and discussing possible use cases. During the webinar, the West Africa Regional Mission relayed how they used the 2020 impact briefs to initiate policy dialogues with stakeholders, design activities, allocate internal budgets, and improve reporting and communication. The project will finalize and disseminate the updated briefs in Q3.

### ***Contributing to the RHSC Systems Strengthening Working Group (SSWG)***

GHSC-PSM presented at the Q2 RHSC SSWG meeting on the project’s work to reduce contraceptive packaging. The meeting was focused on the intersection between climate and supply chains. Staff from CHAI, United Nations Population Fund (UNFPA), and the Women’s Refugee Commission, among others, participated in the session. Participants expressed an interest in a follow-up discussion on climate-resilient supply chains and modeling the costs of increasing supply chain resiliency. The RHSC SSWG plans to facilitate further climate conversations in Q3.

### ***Tracking contraceptive security***

In Q2, GHSC-PSM completed disseminating the 2021 CSI survey findings with a presentation to UNFPA, launch of a secondary dashboard on the impact of the COVID-19 pandemic, and posting to communities of practice listservs, such as IAPHL and the Implementing Best Practices Network. GHSC-PSM also finalized and featured a technical brief on emergency contraception trends from the survey findings between 2010 and 2021 across 63 countries on the CSI website, in collaboration with the International Consortium for Emergency Contraception.

Throughout Q2, GHSC-PSM collaborated closely with USAID to review and update CSI survey content. The project incorporated feedback from five pilot GHSC-PSM country offices to finalize the survey updates, including clarifying certain FP/RH technical terms, updating language and definitions, and adapting the COVID-19 pandemic section to reflect the 2023 landscape.

GHSC-PSM also presented [various briefs](#) and content the project produced based on CSI survey data topics, including a dashboard on COVID-19’s impact on family planning and an updated harmonized dataset at USAID’s “Topical Tuesday.” In Q3, GHSC-PSM will finalize the CSI survey usage manual; update the recipient contact list; translate the survey into French, Spanish, and Portuguese; and roll it out to more than 40 countries.

### ***Participating in the hormonal intrauterine device (IUD) learning exchange***

The project presented key considerations for hormonal IUD procurement at the “Hormonal IUD 101: Method Basics & Early Lessons Learned, Quality-Assured Products, Procurement Considerations” webinar hosted by the Hormonal IUD Access Group. This webinar kicked off the Hormonal IUD Learning Exchange webinar series, sharing key product characteristics, recommendations for national method introduction, and guidance on addressing method misconceptions.



### **Enhancing visibility of FP supply data**

GHSC-PSM serves as a key contributor in supporting the strategic development and scale-up of the Global Family Planning Visibility and Analytics Network (VAN) [platform and processes](#). The VAN is the RH community's pioneering initiative to increase supply chain visibility and improve stakeholder collaboration. In Q2, the project focused on supporting GHSC-PSM Premium Member VAN countries, or those selected in FY 2022 as candidates to transition to Premium membership. Activities included:

- Managed the Automated Requisition Tracking Management Information System-VAN integration, conducting regular reviews and data quality process checks to ensure timely updates to the VAN while GHSC-PSM performed root-cause analysis of any issues that arose.
- Participated in the GHSC-PSM Data Quality Task Force, a joint MIS-Deliver/Return effort, to identify incorrect shipment quantities, analyze root causes, and implement corrective measures to reduce errors. This effort reduced the number of shipment quantity inaccuracies in the VAN from 17 to just four during the quarter.
- Worked with RHSC to initiate an advocacy plan for the VAN sustainability model, aimed at raising awareness of the costs associated with VAN Premium membership among Ethiopia and Malawi stakeholders and encouraging them to allocate funding to cover these costs in FY 2024.
- Coordinated with the GHSC-PSM Nigeria country office in beginning stakeholder engagement and planning sessions to support integration of the Nigeria Health Logistics Management Information System and the VAN.
- Supported Burundi, Liberia, and Rwanda in transitioning to Premium membership by working with RHSC to identify opportunities to schedule Premium membership demonstrations and Premium member in-country training sessions.
- Participated in the VAN Steering Committee (GHSC-PSM is a non-voting member) and provided input to the Manufacturing Subcommittee on GHSC-PSM key supply chain data field definitions and opportunities for standardization across the FP community.
- Participated in regular VAN working groups, including the following task forces: Data Management, Technical Management, Data Sharing, Systems Strengthening, and Super User and Analytics.

## B4. Maternal, Newborn, and Child Health



**15 countries<sup>37</sup>** have received MNCH supply chain strengthening support in FY 2023.



**One country procured MNCH medicines and commodities in Q2.** Since its beginning, the project has procured a total of **\$27.8 million in MNCH commodities** over the life of the project, including **\$64 thousand in Q2.**



In Q2, the project **published two reports** on the assessment of **commodities that address hypertensive disorders of pregnancy (HDP) in Ghana.**



With partners—United Nations Children's Fund (**UNICEF**), **USAID**, Promoting the Quality of Medicines Plus (**PQM+**), and Medicines, Technologies and Pharmaceutical Services (**MTaPS**)—**published the Call to Action Paper** to address pneumonia and possible serious bacterial infection (PSBI) in young children.

GHSC-PSM supports USAID's efforts to prevent child and maternal deaths by increasing access to quality-assured medicines and supplies under the MCH task order. The project provides global technical leadership on MNCH commodities and ensures that supply chain management considerations are included in global dialogue and initiatives.

This section of the GHSC-PSM report summarizes achievements under the MCH task order objectives in Q2 FY 2023, including those of the core work contributing to the global dialogue on priority MNCH issues, and the performance of the project's global supply chain and country offices. The MCH task order objectives are as follows:

- **Objective 1. Provide international MNCH supply chain leadership and guidance:** GHSC-PSM contributes to the global MNCH commodity and supply chain knowledge base, engages with technical coordination bodies, and promotes international MNCH and supply chain best practices.
- **Objective 2. Support data-informed health supply chain decision making for MNCH commodities:** The project implements and trains staff to use MNCH data collection and analysis

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<sup>37</sup> GHSC-PSM provided MNCH technical assistance to 14 countries in FY 2023: AFRICA: Burkina Faso, Ethiopia, Ghana, Guinea, Kenya, Liberia, Malawi, Mali, Mozambique, Nigeria, Rwanda, and Zambia; CARIBBEAN: Haiti ASIA: Nepal.

tools; advocates for data system investments; and works with countries to demonstrate the value of timely and accurate data for commodity management.

- **Objective 3. Improve adherence to globally recognized best practices in MNCH commodity management:** The project develops procurement, storage, and distribution resources and partners with national governments to implement MNCH commodity management best practices.
- **Objective 4. Enhance in-country MNCH supply chain coordination and collaboration:** GHSC-PSM guides national governments as they lead and institutionalize coordination among sub-national partners, programs, and donors involved in MNCH service delivery and commodity selection and management.
- **Objective 5. Conduct ad hoc strategic procurement and delivery to increase availability of quality-assured MNCH commodities** in project-supported countries.

## **International MNCH Supply Chain Leadership and Guidance**

### ***Facilitating global MNCH knowledge sharing***

GHSC-PSM provides global technical leadership on MNCH commodities and supply chain needs through global engagements and technical working groups, including the Maternal Health Supplies Caucus and the Commodities Subgroup of the Child Health Task Force. The project also facilitates technical conversation among MNCH experts based in GHSC-PSM country offices. These conversations provide an opportunity for countries to share their experiences—successes and challenges in implementing global recommendations around MNCH commodity management—and provide guidance to other countries interested in implementing similar interventions in their own context.

In Q2, GHSC-PSM facilitated discussions on activities, tools, and strategies for MNCH commodity financing. Unlike products such as antiretrovirals and antimalarials, MNCH commodities do not receive similar levels of funding for procurement from global health institutions such as USAID, UNICEF, and UNFPA and therefore face supply issues. Recognizing this persistent challenge, GHSC-PSM began gathering its collective evidence and experience in advocating for increased funding for MNCH commodities—which the project has helped governments achieve—and will finalize its global learning and resources in a compendium in Q3. The project will continue to host similar technical discussions to document lessons learned on other MNCH topics in FY 2023.

### ***Participating in NEST360 newborn policy dialogue***

In Q2, GHSC-PSM participated in a workshop in Accra, Ghana, to discuss newborn health policy alongside national and global stakeholders including WHO, UNICEF, the Ghana MOH, and Ghana Health Service (GHS). The objectives of the workshop were as follows:

- Summarize Ghana’s targets and health sector policy related to small and sick newborn care (SSNC) Level-2+, including continuous positive airway pressure (CPAP).

- Review the current status of SSNC scale-up in Ghana using health facility assessment results.
- Share SSNC tools and learnings from the Every Newborn Action Plan (ENAP) global guidance.
- Determine immediate priorities for SSNC in Ghana and identify strategies to close the implementation gap.
- Map stakeholders to streamline current and future investments in SSNC, including how to best support the national SSNC agenda.

Following the workshop, GHSC-PSM discussed strategies with GHS, MOH, CHAI, NEST360, members of the Pediatric Association and clinicians, and other stakeholders to revise the list of commodities for SSNC and consider introducing caffeine citrate in the list of essential medicines. Discussions on these topics will continue into Q3.

### ***Attending a USAID strategic framework event***

In addition to technical working groups, GHSC-PSM attends conferences relevant to the MNCH supply chain. In Q2, GHSC-PSM participated in the launch of USAID’s [Preventing Child and Maternal Deaths Framework](#) (launched March 2023). At this event, the project learned about USAID’s new priorities and connected with other organizations working in the same (and adjacent) space(s). Critically, GHSC-PSM noted the framework’s focus on equity and will use this guidance to target populations of marginalized or vulnerable women and children through current and future activities related to MNCH commodities and supply chain needs in USAID priority countries.

### ***Publishing “Call to Action: Improve Access and Use of Quality Medicines to Save Lives of Children and Newborns”***

Each year, more than 700,000 children under the age of five—90 percent of them in 40 low- and middle-income countries—die from pneumonia and other treatable respiratory infections. Also, nearly 7 million babies under two months experience possible PSBIs. Virtually all of these children could be effectively treated with oral amoxicillin in pediatric formulations or with injectable gentamicin, two widely available, inexpensive medicines that can save children’s lives. Despite progress since the [UN Commission for Life-](#)

[Saving Commodities for Women and Children](#) 10 years ago, access to and appropriate use of pediatric amoxicillin (dispersible tablets and suspension) and gentamicin injection remain a challenge.

In 2022, GHSC-PSM, MTaPS, PQM+, and other partners researched barriers and interventions for availing these commodities, specifically in the areas of quantification, finance, appropriate use, and quality. GHSC-PSM presented the information during three sessions hosted by the [Child Health Task Force \(CHTF\)](#) to a range of stakeholders and countries, to validate and prioritize proposed interventions.

In Q2 FY 2023, GHSC-PSM, MTaPS, and PQM+ published [Call to Action: Improve Access and Use of Quality Medicines to Save Lives of Children and Newborns](#) to summarize findings and recommend actions for overcoming the identified barriers. The solutions are tailored to specific actors—especially governments, multilateral organizations, and donors—encouraging specific steps they can take to avail these commodities.

**Call to Action:**  
Improve access and use of quality medicines  
to save lives of children and newborns

### ***Expanding the warehousing center of excellence***

The center of excellence (COE) initiative is designed to accelerate change management across warehouses and warehouse systems through continuous improvement of operations using “lean” methodology—a commercially accepted approach that maximizes output while minimizing resources used. The COE prepares the supply chain and warehouse management systems for activity-based costing and dynamic routing, aligned with private sector best practices. When warehouse management systems in countries become more efficient and cost-effective, country governments can use freed-up funds on other priority initiatives to improve the health of their citizens.



During Q2, GHSC-PSM began drafting the COE field guide, “How to Operate the Center of Excellence, Winning the Logistics Game.” The methodology in the guide focuses on overcoming constraints and eliminating excess travel and labor to reduce warehouse order cycle times and complete all warehouse activities simultaneously. GHSC-PSM tested the methodology by implementing a daily planner at the Zambian Medicines and Medical Supply Agency (ZAMMSA) in Lusaka. The project then collected volumetric outbound data in Zambia to include in the field guide as real-life examples and to illustrate lean warehouse product slotting methodologies. The guide will be completed in Q3.

### **Support for Data-informed Health Supply Chain Decision Making for MNCH commodities**

#### ***Conducting end-use verification surveys in project-supported countries***

MNCH data and analytics within national LMISs are not always adequate to identify and resolve supply chain issues. GHSC-PSM uses the end-use verification (EUV) survey to increase the availability of MNCH commodity data. The survey helps supply chain staff collect data on commodity availability, storage conditions, and factors that affect commodity availability at service delivery points. EUV data collection is also an opportunity for GHSC-PSM country teams to provide on-site capacity building for SDP staff and

MOHs, gather supplemental qualitative data on reasons for stockouts, and cross-check LMIS data accuracy on stock availability trends.

Exhibit 18 depicts countries that collected EUV data and submitted EUV reports to USAID/Washington and in-country stakeholders in Q2.

Exhibit 18. Q2 MNCH EUV Countries

Countries that collected EUV data in Q2	Ghana, Nigeria
Countries that submitted EUV reports in Q2	Burkina Faso, Guinea, Liberia, Nigeria

**Results from the recent EUV in Guinea.** In Q2, the Guinea EUV report demonstrated that the stockout rates of several key commodities had decreased at the SDP level compared to the previous EUV survey, but found that the reason for these decreases differed across commodities.

- For oxytocin, stockout rates were higher than in previous years, partially due to the expiration of large quantities of oxytocin at the regional level.
- For magnesium sulfate, GHSC-PSM support to district facilities with quarterly ordering led to a consistent decrease in stockouts over the past three EUVs (94 percent in April 2021 to 56 percent in December 2022).
- For iron and folic acid combination tablets, the comparatively low stockout rate can be attributed in part to substantial government buy-in; the MOH regularly distributes this commodity free of charge to facilities and warehouses.

High levels of consumption and challenges with keeping products appropriately stocked at the warehouse level continue to be the main drivers of stockouts across commodities, but continued investment from the MOH to restock warehouses with MNCH commodities, coupled with continued support from GHSC-PSM in monitoring stock levels and training stock managers, is expected to increase efficiency, improve warehouse and SDP commodity management, and reduce stockout rates in Guinea.

**Improving data analytics and information systems for MNCH commodity decision making**

Electronic logistics management information system (eLMIS) platforms aggregate and help stakeholders analyze an array of national supply chain information. In FY 2021, GHSC-PSM developed a catalog of robust analytics tools that project-supported countries use alongside eLMIS to inform MNCH commodity management decisions. The catalog describes each tool, the platform it uses, and the data it requires to function. It is meant to be particularly helpful to countries with nascent eLMISs, providing a blueprint of analytics tools that already exist to support key supply chain decisions.

**Refactoring analytics tools so they can be used more widely.** Since FY 2021, GHSC-PSM has been refactoring select tools from the data catalog, or making the tools' code more widely usable, and helping countries (six countries by the end of Q2) implement these refactored tools in their health and logistics systems. Q2 highlights include the following:

- In **Burkina Faso**, the project developed the Data Capture and Data Analytics tool and corresponding user guides in French and English. The project engaged the Burkinabe MOH and the central medical store, CAMEG, to improve stock monitoring and forecasting through the use of both tools. GHSC-PSM is pursuing MOH adoption of the tools to achieve sustainable visibility into stock at all health facilities throughout the country.
- In **Liberia**, following the refactoring and initial testing of the Data Extraction Tool and Consumption Anomaly Tool, GHSC-PSM integrated consumption and stock-on-hand data into both tools. The project developed user guides to increase adoption and will soon begin training in-country staff. The tools will increase visibility and ameliorate tracking of persistent stock challenges throughout the supply chain.
- In **Malawi**, the project presented the data catalog to the Mission and introduced options for designing data analytics tools capable of increasing visibility throughout the supply chain for MNCH commodities. The GHSC-PSM country office is coordinating with USAID/Malawi to determine an implementation timeline.

## **Enhanced In-country MNCH Supply Chain Coordination and Collaboration**

### ***Supporting the management of antihypertensives in Ghana***

In FY 2022, GHSC-PSM worked closely with the Ghana Health Service to assess the availability of commodities that address HDPs in Ghana's public sector. HDPs include pre-eclampsia, eclampsia, gestational hypertension, and chronic hypertension. Surveyors collected data from 85 health facilities at all three levels of the health system in five regions. In Q1 and Q2, the project and its partner, Health Access Network, analyzed the data and published two reports on the assessment:

- The [first report](#) covers a representative sample for the entire country of Ghana.
- The [second report](#) focuses specifically on the five USAID-priority regions in Ghana.

Assessment findings indicate a need to increase services and capacity building for managing HDP. GHSC-PSM recommended that policymakers in Ghana review current practices to improve the availability and management of antihypertensives and ensure that they are properly incorporated into national policies. GHSC-PSM is exploring opportunities to conduct HDP assessments in additional countries using a similar methodology.

### ***Planning post-partum hemorrhage (PPH) workshops in Guinea and Nigeria***

GHSC-PSM's MCH task order and advanced analytics teams are planning two workshops to increase participants' (local project staff, MOH staff, public and private supply chain actors, and additional stakeholders) PPH management capacity in Guinea and Nigeria, in coordination with Monash University in Q3 FY 2023. Workshop objectives are to:

- Share information including good management practices to impact the availability of MNCH products.
- Explore solutions to improve oxytocin storage conditions, including leveraging cold chain capacities of the Expanded Program on Immunization (EPI).
- Provide guidance, policy documents, job aids, research, and other resources to help participants optimize the supply of MNCH products.
- Share resources and discuss PPH training materials for health workers.
- Discuss other countries' experiences with PPH supply chain initiatives.
- Develop a roadmap for strengthening the MNCH supply chain, including use of the EPI cold chain in the storage of oxytocin.

## **Improved Adherence to Globally Recognized Best Practices in MNCH Commodity Management**

### ***Providing systems strengthening technical assistance***

GHSC-PSM is providing MNCH systems strengthening support to increase access to quality-assured MNCH commodities to 15 countries<sup>38</sup> in FY 2023. Specific country achievements are described below.

***Assessing medical devices and consumables for small and sick newborns in Ghana.*** GHSC-PSM designed a comprehensive assessment of newborn medical devices and commodities, and providers' capacities to use these supplies in Ghana. The assessment includes a situational analysis of 1) the prevalence of improvised bubble CPAP, 2) 100 percent oxygen use, and 3) pulse oximetry monitoring in district health centers. The analysis is designed to:

- Determine data gaps regarding the availability of resuscitation devices for the care of small and sick newborns (SSNBs).
- Investigate health worker capacity to manage and maintain devices critical to ensuring adequate care for SSNBs.
- Evaluate maintenance protocols for medical devices used for newborn care.
- Assess the respiratory ecosystem for SSNBs at health facilities.

In Q2, GHSC-PSM coordinated with stakeholders including GHS, JHPIEGO's Reaching Impact, Saturation, and Epidemic Control, or RISE, project in Ghana, and the USAID/Ghana Mission to develop a harmonized assessment tool for use in targeted geographic regions (Upper West, Upper East, Northern, Eastern, and

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<sup>38</sup> GHSC-PSM provided MNCH technical assistance to 14 countries in FY 2023: AFRICA: Burkina Faso, Ethiopia, Ghana, Guinea, Kenya, Liberia, Malawi, Mali, Mozambique, Nepal, Nigeria, Rwanda, and Zambia; CARIBBEAN: Haiti



Savannah regions). By the end of Q2, data collection using the tool was underway; preliminary results will be released in Q3.

### **Ad Hoc Strategic Procurement to Increase Availability of Quality-assured MNCH Commodities**

In Q2, GHSC-PSM supported one country<sup>39</sup> in procuring essential medicines and consumables. This included select essential medicines that were in critically short supply on behalf of USAID/DRC.

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<sup>39</sup> GHSC-PSM procured MNCH commodities for one country in Q2 FY 2023: DRC.

## SECTION C

# PROGRESS BY OBJECTIVE

## CI. Global Commodity Procurement and Logistics



**Procured \$162.5 million** in health commodities in Q2. Total values for the life of the project are over **\$5 billion**.



**Delivered 1,139 line-item orders** in Q2, with a value of **\$136.8 million**.



**Delivered 88 percent of line items on time**, based on the defined on-time window (within the period 14 days before or seven days after the agreed delivery date). **Delivered 86 percent on-time and in-full**.

### CI a. GLOBAL SUPPLY CHAIN: FOCUSED ON SAFE, RELIABLE, CONTINUOUS SUPPLY

GHSC-PSM's procurement strategy focuses on three primary objectives:

1. Maintain on-time deliveries, despite the impact of COVID-19 and the war in Ukraine.
2. Balance price, delivery, and quality to achieve the best value.
3. Reduce response/cycle times, lead times, and transaction costs.

In Q2, the project achieved another strong performance, with OTD above the contractual target of 80 percent for the 19th consecutive quarter. The project achieved this by focusing on performance and managing overall commodity and supply chain costs through the following initiatives:

### MORE HEALTH COMMODITIES THROUGH MARKET DYNAMICS, STRATEGIC SOURCING, AND SUPPLIER MANAGEMENT

GHSC-PSM works across project teams and external stakeholders to understand markets for the medicines and health commodities it procures. The project develops sourcing strategies, builds strategic relationships with suppliers that shape markets, enhances project performance, and achieves greater value

for USAID within each product category. GHSC-PSM conducts market analyses, leads strategy development, employs sourcing best practices, contributes to process improvements, and negotiates and proactively manages contracts with suppliers and 3PLs. The project executes sourcing activities for products under each health area in line with the strategic sourcing calendar and undertakes additional sourcing for products to support USAID's COVID-19 response. See sections B1, B2, B3, B4, and Annex A for details.

Notable highlights this quarter include:

- Finalized the subcontract with the supplier of CAB-LA. The project can now begin procuring this injectable PrEP commodity as directed in the PEPFAR FY 2024 (COP23) Technical Consideration for HIV Prevention Programming.
- Launched a GIS feature for the Test Results Reporting module of the Global Viral Load Dashboard.
- Reviewed the LLIN manufacturing parameters in preparation for the FY 2024 LLIN tender and possible manufacturing in Africa.
- Placed the first-ever order of MPA-IM with improved packaging.

### ***Supplier relationship management***

In Q2, GHSC-PSM held business reviews with five strategic ARV suppliers with participation from GHSC-QA and USAID. These meetings provided an opportunity to discuss supplier performance, updates to key pipeline products, ARV market share review, and progress on priority initiatives such as the D-term scale-up and launch of VMS. With input from USAID, the project also discussed the latest developments in PEPFAR's regional manufacturing efforts, including updates on ongoing and potential plans for Africa-based ARV production.

### ***Operational excellence:***

In Q2, GHSC-PSM developed and rolled out several operational cost reduction initiatives:

- Rolled out the essential medicines allocation tool. To date, the project has used the tool to evaluate 276 bids from suppliers, auto-allocate 18 orders with over 125+ lines, automatically generate requests for information for each supplier, and evaluate responses from suppliers per business logic. The tool also recommends the best supplier based on its analysis of order requests and supplier bids and generates award and allocation memos, and unsuccessful offer letters.
- Developed the Sourcing Assistance Messenger, or SAM, tool to increase efficiency. The tool works as a virtual assistant to help procurement teams perform simple tasks, such as following up on approvals or resolving funding issues, in a timely manner to avoid delays or exceeding service-level agreements. The project began piloting the tool across all task orders with U.S.-based teams in Q2.

- Continued developing the invoice-to-pay tool to significantly reduce operational costs and lead time in processing invoices. The project will pilot the tool in Q3.
- Continued developing the e-packing list, which will increase efficiency by driving greater data accuracy and reducing manual data entry, back-and-forth emails, and phone calls. Rollout is scheduled for Q3.

### **Regional Distribution Center Operations**

In Q2, GHSC-PSM leveraged the three RDCs to deliver more than \$8.3 million worth of commodities to 22 destination countries. The project also used RDCs to deliver 11.5 percent of all TLD by value. As in Q1, all three RDCs achieved 100 percent on inbound and outbound performance. GHSC-PSM finalized contract modifications to extend the RDC performance period until November 2024.

### **DECENTRALIZED PROCUREMENT (DCP)**

In Q2, GHSC-PSM achieved 87 percent OTD for orders managed through the DCP channel. To mitigate the impact of COVID-related logistics constraints on the global supply of VL/EID reagents and consumables, the project held bi-weekly order management meetings with manufacturers and distributed VL/EID demand across all available testing platforms.

In line with the project's strategy to maintain decentralized procurement capability in Africa, in Q2, GHSC-PSM's DCP team in Kenya continued to procure laboratory commodities for Kenya and Tanzania. This strategy allows more orders to be managed in a similar time zone as the destination countries and avoid delays due to time differences.

### **GLOBAL STANDARDS**

GHSC-PSM operationalizes its procurement requirements for pharmaceutical, medical device, sterile kit, laboratory reagent, and LLIN suppliers to adopt standardized product identification and labeling and exchange product master data leveraging Global Standards 1 (GS1). These supplier requirements include:

- *Identification:* Assigning Global Trade Item Numbers (GTINs) that identify trade items and Global Location Numbers that identify business entities and locations.
- *Capture:* Labeling specified packaging levels with barcodes encoded with GTIN, batch/lot, expiration date, serial shipping container code, and (for pharmaceuticals and LLINs) serial number.
- *Share:* Exchanging standards-based, descriptive product master data through the Global Data Synchronization Network (GDSN).

In Q2, the project continued to engage with suppliers and the global health community to advance adoption of these standards across the GHSC-PSM portfolio, thus laying the groundwork to use these data in global and national supply chain processes and systems. Advancing compliance requires regular

engagement with suppliers for existing and new items. In Q2, through this ongoing engagement, the project:

- Collected, validated, and added GTINs for 73 items to the GHSC-PSM catalog.
- Collected master data for 30 items through the GDSN and maintained data on existing items. The project also sent and received more than 1,900 messages in the GDSN.

As of Q2, the GHSC-PSM catalog had a total of 1,170 in-scope items (subject to requirements: actively procured in the past, and available for procurement in the future).

### **Quality Assurance**

GHSC-PSM streamlines and optimizes QA and QC business processes and procedures to rapidly address product incidents and failures as they occur, ensuring quality products reach the consumer. Highlights in Q2 include:

- Facilitated collaboration of QA activities between GHSC-PSM, GHSC-QA, and stakeholders (suppliers, clients) to manage quality incidents by expediting activities, such as product quarantines to ensure patient safety and facilitate product replacement to avoid stockouts.
- Received 27 new incidents across HIV/AIDS, FP/RH, and MNCH health areas and completed 39 cumulative incidents, leaving about 28 open incidents as of the end of Q2.
- Engaged with country offices to enforce on-time reporting of quality incidents and adherence to SOPs. This process ensures that only quality products are distributed on time to the end user.
- Finalized internal revisions to the product quality incident work instructions, which optimizes quality incident reporting, management, and resolution to ensure prompt QA determinations for product disposition (release for use or reject and replace, etc.).
- As approved by USAID, updated the product quality incident procedure to incorporate management of damaged commodities valued at less than \$1,000. This allows the project to manage these incidents internally and efficiently without a quality investigation (i.e., unless there is a stockout, the damaged commodities will be processed to rejection based on clear evidence of the reported damage without a QA recommendation and USAID concurrence/involvement).
- Conducted multiple trainings on the product quality incident work instruction and the recall/market withdrawal SOP for all project staff to emphasize prompt incident reporting and minimize the risk of compromised products being distributed (i.e., to quarantine products until QA assessment is complete).

### **QA for malaria commodities**

For QA for malaria commodities, see section B2: Malaria.

## IMPACTS OF GLOBAL CHALLENGES ON FREIGHT AND LOGISTICS

### **Global challenges**

In Q2, the Russian invasion of Ukraine continued to cause fuel shortages and other supply chain disruptions, including reduced availability and increased pricing of refrigerated trucks across Europe. The earthquake in Turkey disrupted air traffic via Istanbul, while Chinese and Taiwan tensions continued to affect air freight capacity.

A market-wide drop in global cargo demand continued to impact shipping lines in Q2. The consequent blank sailings and disruptions in shipping schedules led to ocean carriers suspending services. The ocean industry also experienced fuel shortages, increased fuel surcharges, and capacity constraints due to International Maritime Organization regulations on emissions. Low water levels due to drought also affected ocean schedules for cargo originating in Europe.

### **Airfreight**

Labor shortages persisted in Q2 due to airline strikes, with airports restricting the number of flights in and out of many major hubs.

Rising fuel prices and labor issues affected carrier rates and capacity, making airlines respond by focusing their routes on popular destinations and using various (often smaller) aircraft types to adjust to demand. Although overall airline scheduling is rebounding, the limited capacity for already underserved locations remains a concern, as fewer freighter aircraft serve these routes.

These struggles in the airline industry are making shipping by air expensive and less reliable.

### **Ocean freight**

In Q2, severe winds and cyclones affected ocean freight into Southern Africa. Shipping lines continued to manipulate capacity, cancel sailings, and bypass ports to raise prices, leading to bookings with longer routes, occasional booking changes, and transshipment delays.

### **Destination challenges**

In Q2, severe flooding caused by Cyclone Freddy impacted deliveries to countries within the Southern African Development Community (SADC).<sup>40</sup>

Security and instability remain a concern, particularly in Africa and Haiti. In DRC and Rwanda, tensions continued in Q2, and ISIL-affiliated extremist activities continued to cause security concerns in West Africa.

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<sup>40</sup> SADC countries with deliveries impacted by Cyclone Freddy: Madagascar, Malawi, Mozambique, South Africa, and Zambia.

## EMERGENCY PROCUREMENT HIGHLIGHTS

### **Angola**

In Q2, GHSC-PSM completed the delivery of an emergency order of ARVs to Angola. Using the USAID emergency commodities fund, the project delivered 5,250 90-count bottles of DTG 10mg, 13,664 60-count bottles of ABC/3TC 120/60mg, and an additional 82,512 90-count bottles of TLD.

### **Gabon**

GHSC-PSM also received an emergency request from the Department of Defense HIV/AIDS Prevention Program (DHAPP) to procure 11 unique ARV products for Gabon. These included three pediatric ARVs; nine adult ARVs, including 120,000 90-count bottles of TLD; and TE for PrEP. The project immediately secured the stock with suppliers and provided the USAID/Gabon Mission and DHAPP with a detailed delivery plan. Delivery will begin in early Q3.

See section B1: HIV/AIDS for more information.

## C I.B. PROJECT PERFORMANCE

This section summarizes findings on key indicators of GHSC-PSM global supply chain performance. More detail on these and other indicators is provided in Annex B.

### DELIVERY TIMELINESS

GHSC-PSM measures OTD in two ways:

- OTD, the number of on-time deliveries as a percentage of expected deliveries in the period.
- OTIF, the number of on-time deliveries as a percentage of all actual deliveries in the period.

OTD is a more accurate reflection of recent performance, while OTIF is a lagging indicator as late orders due in prior periods get delivered.

In Q2, GHSC-PSM OTD was 88 percent and OTIF 86 percent, the 19th successive quarter that OTD has been above 80 percent (see Exhibits 19 and 20).

Exhibit 19. April 2022 through March 2023 Monthly Indefinite Delivery, Indefinite Quantity (IDIQ) OTD

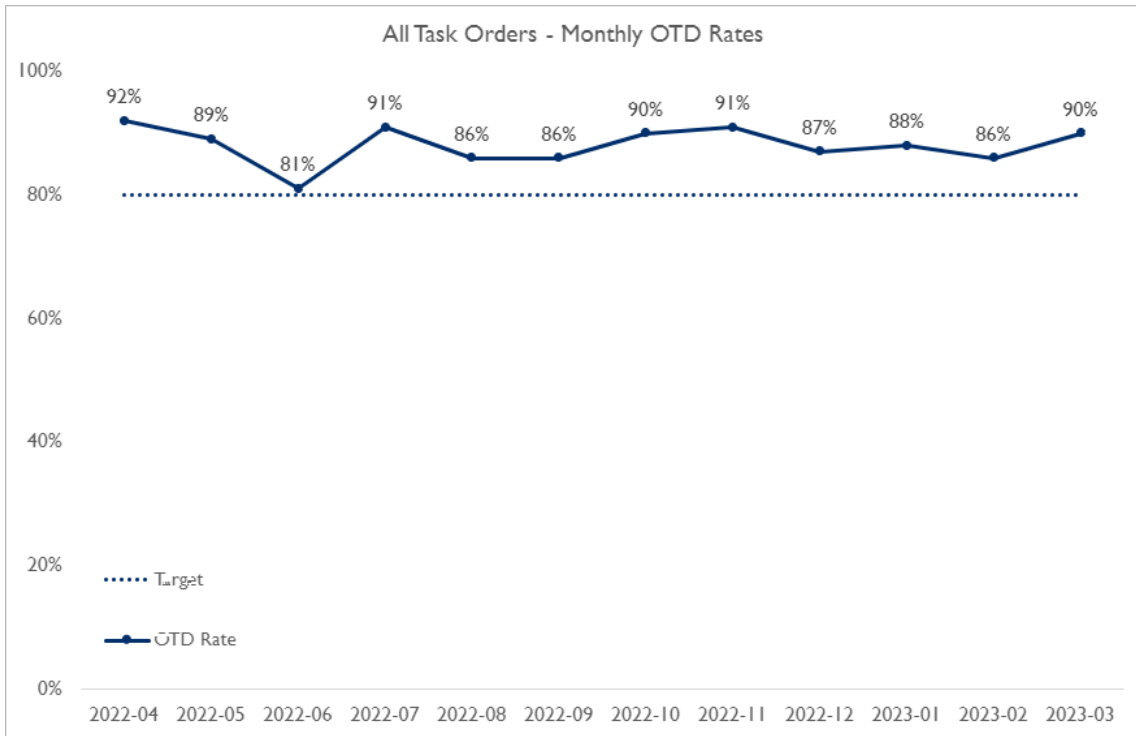
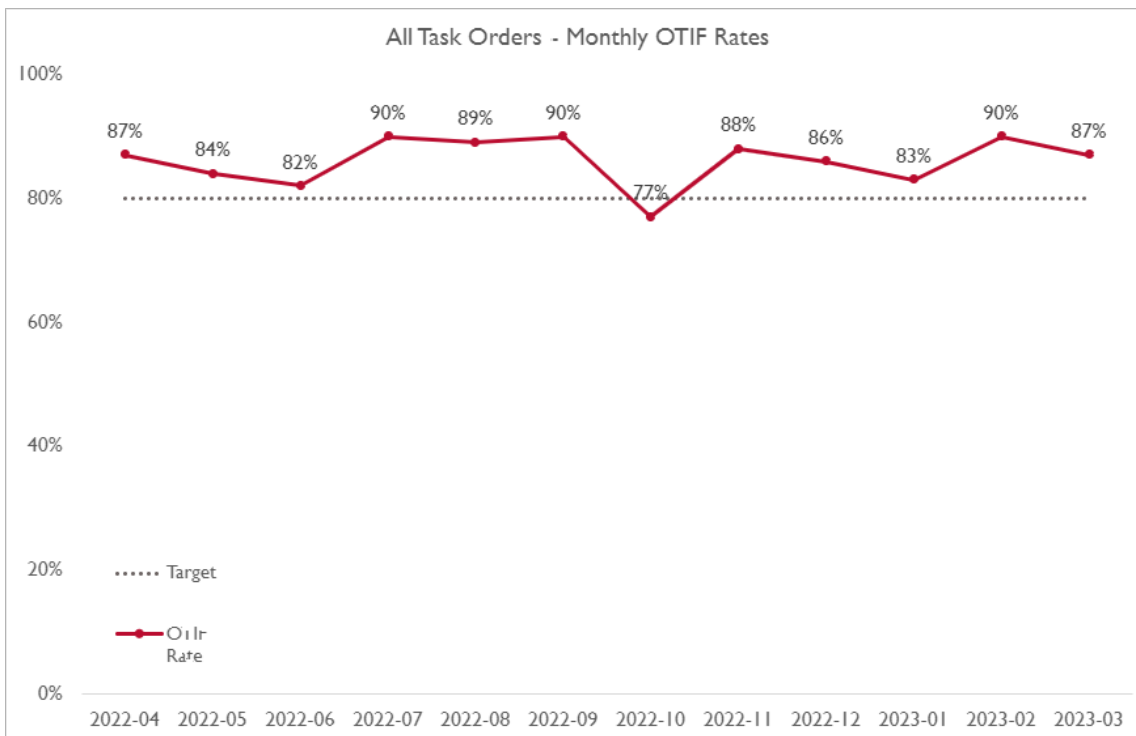


Exhibit 20. April 2022 through March 2023 Monthly IDIQ OTIF

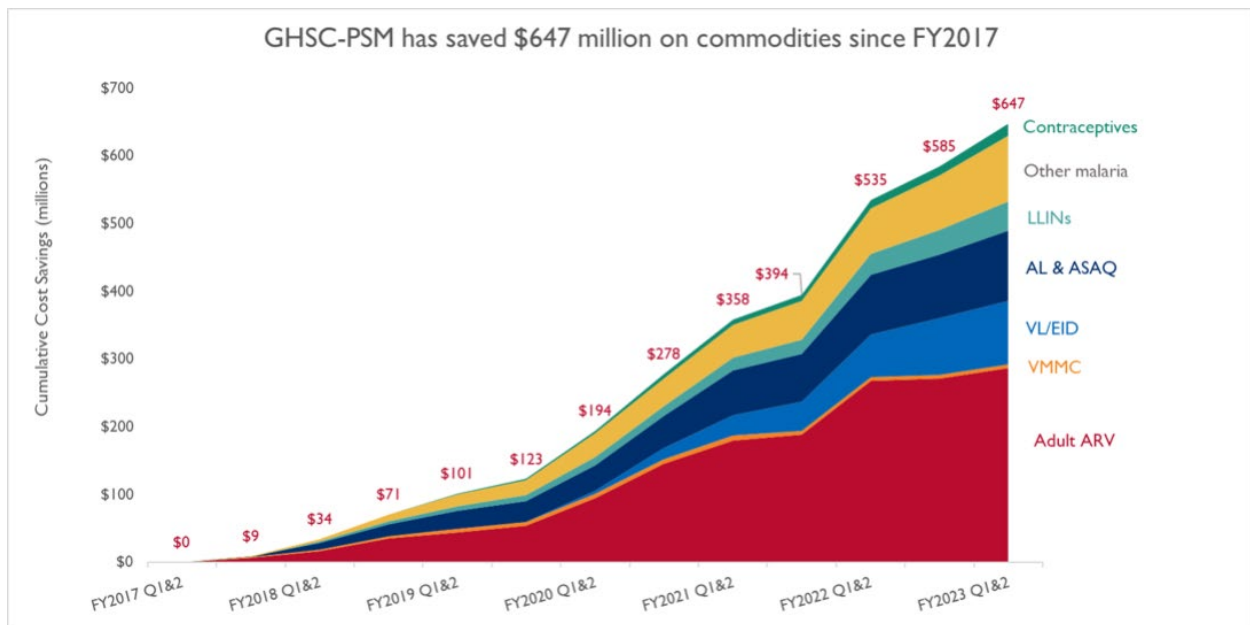




## COST SAVINGS ON MEDICINES AND HEALTH COMMODITIES

GHSC-PSM conducts regular and detailed analysis to understand the markets for the medicines and health commodities it procures and to bring this knowledge to negotiations with suppliers. Through careful negotiation of long-term contracts with suppliers for major product groups, including viral load testing this year, the project saved \$647 million on commodities over the life of the project, as shown in Exhibit 21.

Exhibit 21. Life-of-Project Savings on Medicines and Health Commodities



To produce long-term value and sustainability, GHSC-PSM achieved these cost savings while working to ensure suppliers maintain their interest in the market and expanding the number of suppliers in many commodity categories, so the USG can benefit from a competitive supplier base. Additional savings have also accrued, as prices for these commodities have risen more slowly than the general rate of inflation.

## COST SAVINGS ON LOGISTICS

*Open competition in freight lanes.* GHSC-PSM saves money on shipments by managing through a fourth-party logistics model that competes lanes between 3PL shipping companies to improve service and reduce costs. This leads to cost savings on shipping rates versus an alternative approach with limited or no competition for shipping lanes (a simple 3PL approach) through scale and competition. Over the life of the project, GHSC-PSM has saved \$46.8 million on shipments.

Exhibit 22. Cost Savings Through Open Competition in Freight Lanes

Task Order	Benefits of Competing Freight Lanes
Task Order 1	\$36,854,394
Task Order 2	\$9,190,972
Task Order 3	\$740,224
Task Order 4	\$36,579
<b>Grand Total</b>	<b>\$46,822,168</b>

As of Q3 2019, logistics savings were calculated as the difference between the rates awarded to the selected 3PL and the average of the two most expensive 3PLs. This method provides a comparison for all shipping lanes and simulates the rates that would likely be obtained under a non-competitive, 3PL model. The project uses shipping data and annual 3PL rates for the specific timeframe of the shipment being measured to calculate these cost savings. At times, annual 3PL rates were not available due to market conditions; adjustments<sup>41</sup> were made to past rates to track more accurately these savings with the available information.

Starting October 2022, the project conducted a freight rate card refresh. The October 2022 rates were used to calculate the cost savings for Q1 to Q2 FY 2023.

*Optimizing the RDC network.* GHSC-PSM saves money on logistics by optimizing the project's network of RDCs. Savings are generated through:

- Warehousing savings from lower costs at the project's three RDCs (Dubai, Belgium, and South Africa)
- Transportation savings from shipping costs on actual commodities that moved through the three RDCs, compared to what shipping would have been for those commodities under the previous, five-warehouse model (Ghana, Kenya, Netherlands, Singapore, and South Africa). These savings are in addition to cost savings generated from negotiating lower shipping rates.

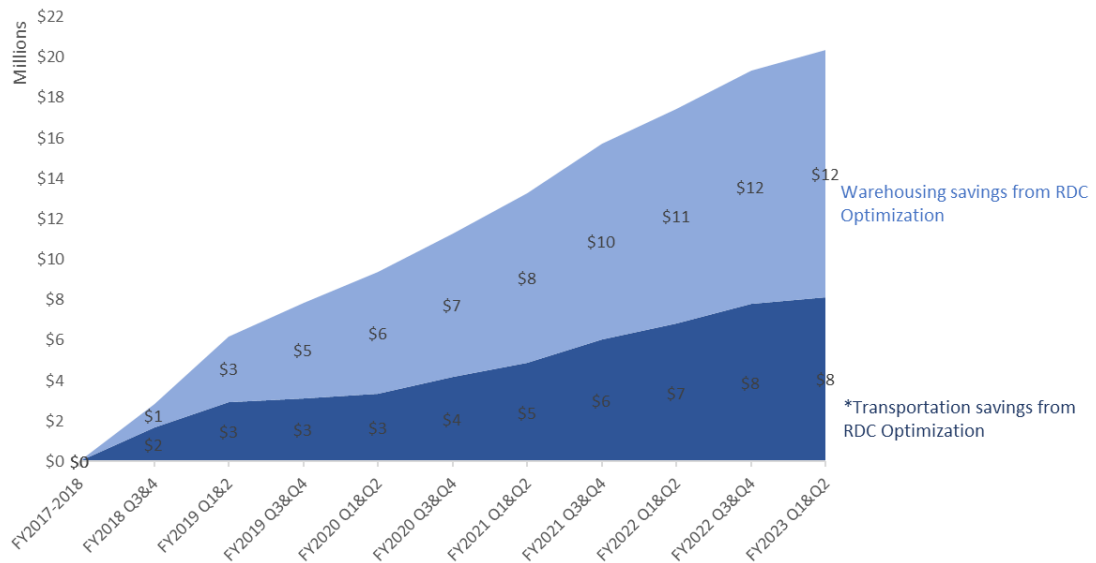
GHSC-PSM saved \$20.4 million in transportation and warehousing costs since optimizing the RDC network. Exhibit 23 shows cost savings from RDC optimization; the light blue indicates warehouse savings and the dark blue, transportation savings.

Exhibit 23. RDC Optimization Cost Savings

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<sup>41</sup> In early Q3 2020, GHSC-PSM recognized that air freight market rates were rising rapidly because of the COVID-19 pandemic. During this time, the project placed a hold on the annual 3PL rate refresh for air shipments and extended ocean rates until the end of November 2020. As a result, the project, in consultation with USAID, decided to manage air shipment pricing under a spot-bid model and review ocean shipments case by case with the expectation that the impact on pricing would be nominal. In December 2020 the project refreshed ocean freight rates and used them to calculate ocean cost savings from December 2020 to the end of Q2 2021. In the Q2 FY 2022 GHSC-PSM IDIQ report, the project, in consultation with USAID, adjusted the FY 2019 rate cards to account for the shift in the market, determined by taking the average of all spot bids acquired per shipment to arrive at a market increase rate per shipment. This rate was then applied to the FY 2019 rates per shipment to adjust the quotes to market values at the time of booking the shipment. Using these adjusted rates, the project calculated final cost savings figures as the difference between the rates awarded to the selected 3PL and the average of the two most expensive 3PLs, similar to previous years.

**GHSC-PSM has saved \$20.4 million in transportation and warehousing costs since optimizing the RDC network**



\*Transportation Savings from RDC Optimization only reflects the SEA shipments from April 2020 to March 2021 due to the COVID-19 Pandemic.

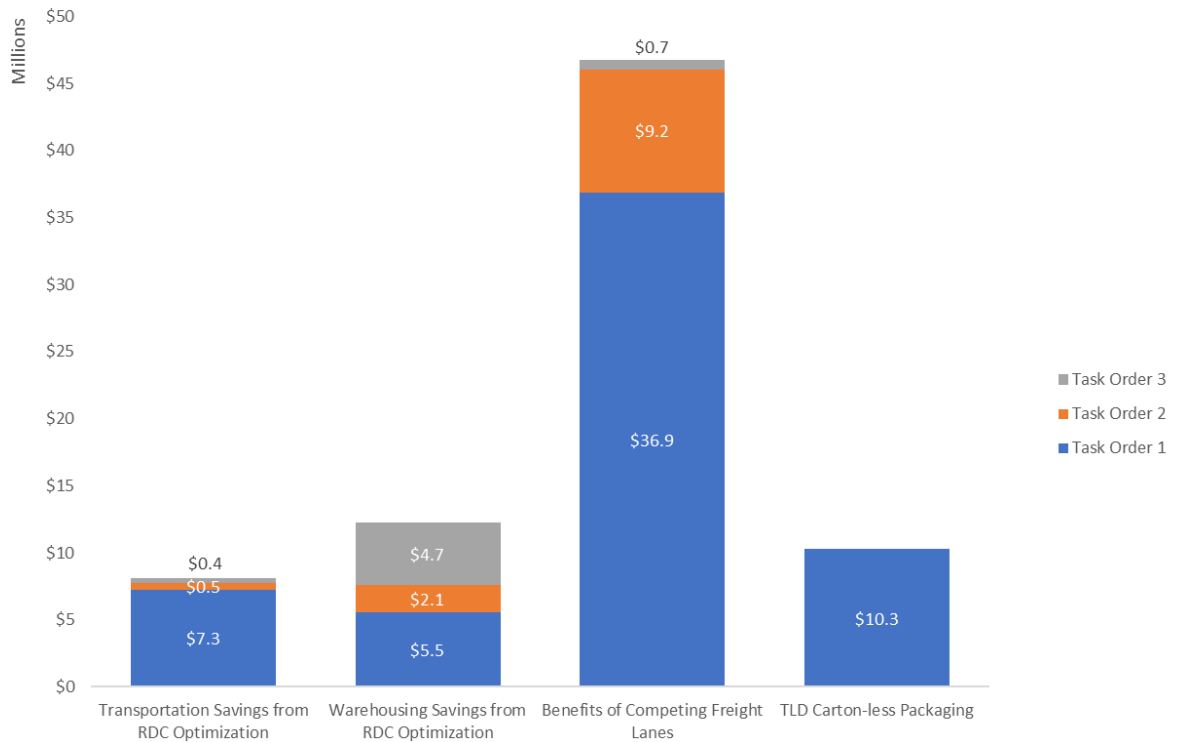
*Strategic packing to reduce shipping costs.* GHSC-PSM saves money on logistics by reducing the weight and shipping containers needed to transport TLD products. In FY 2019 the project began procuring TLD in carton-less packaging and introduced larger pill counts in TLD bottles. Carton-less is a term global health procurement agents use to refer to ordering and handling pharmaceutical products by the bottle and without the external boxes around each individual bottle. Before FY 2019, GHSC-PSM standardized the TLD pack size to 30-tablet bottles.

Since FY 2019, GHSC-PSM shifted to procuring 90- and 180-tablet bottles. These changes allow suppliers to fit more total tablets in shipping containers, thus reducing the total number of shipping containers needed and saving \$3.6 million in logistics cost by sea. This also reduces total shipment weight, saving \$6.6 million to date in logistics costs by air.

Total cost savings on logistics to date were \$77.4 million, which includes \$20.4 million in transportation and warehousing costs from optimizing the RDC network, \$10.3 million from strategic packaging of TLD, and \$46.8 million from competing freight lanes. (See Exhibit 24.)

Exhibit 24. Logistics Cost Savings Breakdown

## GHSC-PSM has saved \$77.4 million in overall logistics cost since FY2017



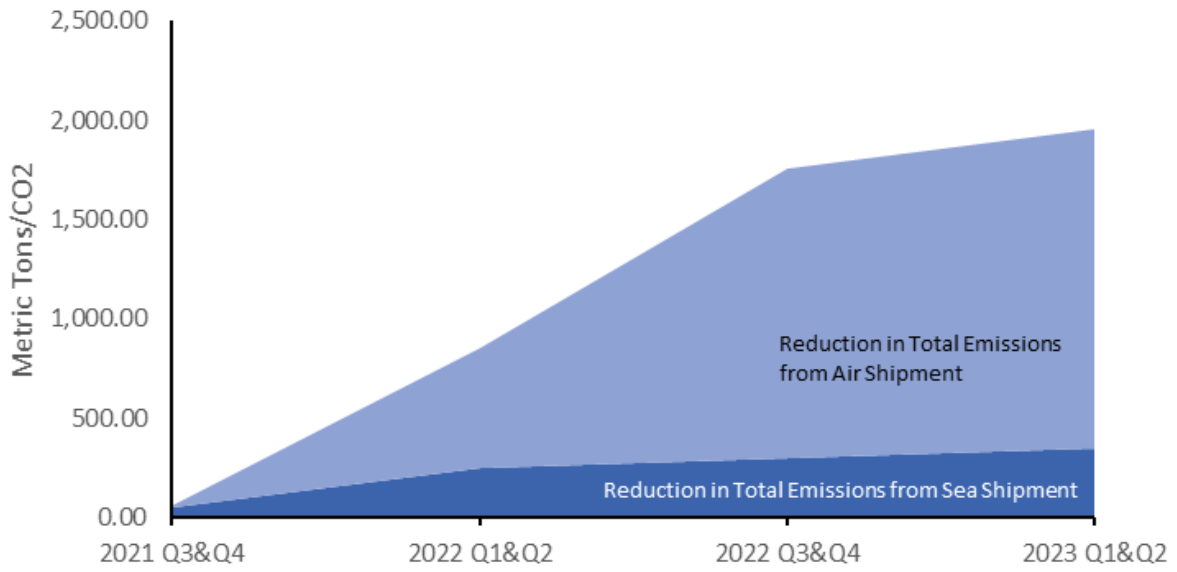
\*includes \$1.9 million of cost savings for TO1 generated with the methodology used prior to Q3 FY2019. Also, Transportation Savings from RDC Optimization and Benefits of Competing Freight Lanes only reflect SEA shipments from April 2020 to March 2021 due to the COVID-19 Pandemic. Task Order 4 does not generate significant cost savings. Therefore Task Order 4 is not represented in this graph.

### REDUCTION IN CARBON EMISSIONS

Beginning in August 2021, GHSC-PSM focused on reducing carbon emissions on TLD order shipments as part of the green initiative effort. Carbon emission reduction in sea shipments is calculated by comparing the estimated actual containers shipped when using carton-less TLD packaging versus how many containers would have been needed using 30-tablet bottles packaged in cartons. Since August 2021, total emissions produced would have been 7,728.23 metric tons/carbon dioxide (CO<sub>2</sub>) had the project continued shipping TLD in packs of 30-tablet bottles packaged in cartons. Since the project changed from carton to carton-less packaging and increased pack size to 90 or 180 tablets per bottle, the actual emission was 5,774.94 metric tons/CO<sub>2</sub>. Therefore, total emission reductions due to this change was 1,953.30 metric tons/CO<sub>2</sub> ([the equivalent of 435 gasoline powered passenger vehicles driven for one year](#)). This was an emission reduction of 21 percent between August 2021 and March 2023.

Exhibit 25. Cumulative Total Emission Reductions

**GHSC-PSM has reduced 1,953.3 MT CO2 in total emissions since optimizing TLD packaging**



## C2. SYSTEMS STRENGTHENING TECHNICAL ASSISTANCE



**Assisted 45 countries** with health supply chain systems strengthening over the life of the project.



Provided **technical feedback on 167 supply plans this quarter** to strengthen national supply planning capabilities.



**Published four information technology solutions** developed by GHSC-PSM on Github, making them available for public reference and use.

GHSC-PSM's strategic goal is for every country to have a locally led health supply chain that is integrated, optimized, accountable, agile, and lean and can sustainably supply quality products to all citizens. To support this goal, headquarters and field-based technical specialists work with country teams to define systems strengthening strategies that are appropriate to the local context and can be realistically achieved. The project places emphasis on automated data capture and real-time end-to-end data visibility (most notably through advanced analytics, global standards and traceability, forecasting and supply planning, and management information systems), private-sector engagement, pharmaceutical-grade infrastructure, and efficient distribution across countries (through laboratory networks, warehousing, and distribution systems strengthening). Through workforce development, leadership, and governance activities, the project works with country stakeholders to ensure their supply chains are managed by supply chain professionals dedicated to quality improvement. Where possible, it collaborates on strategies to outsource functions to accountable private sector providers.

### ADVANCED ANALYTICS

Advanced analytics expands countries' use of data for supply chain decision-making, from day-to-day operations to high-level strategy. GHSC-PSM designs analytic tools that leverage management information system investments to make real-time data available and meet countries' needs. These tools are repeatable, reusable, and adaptable in a range of contexts, enabling countries to reuse them in a way that encourages and improves self-reliance. In Q2, the project worked in Ghana, Haiti, Liberia, Nigeria, Zambia, and Zimbabwe to either incorporate data analytic tools within the country's context or refine existing data flow processes.

- In **Liberia**, GHSC-PSM worked with the country office to make analyzing data from eLMIS reports more efficient. The primary challenge was the error-prone process flow and timelines for completing an analysis, which involved manually accessing the eLMIS interface and downloading

and attaching several hundred reports before analyzing the data. This process had to be repeated every time a new request or report was needed. To address this challenge, the project introduced a standalone executable tool, built in Python, that automates the process of extracting necessary reports from the eLMIS and combining them into one table where the data can then be easily analyzed. This tool substantially reduces the LOE needed to extract eLMIS data from hours to minutes and minimizes the risk of errors. The tool is also open source and can be adjusted for use in other countries.

- In **Nigeria**, GHSC-PSM created a shipment planning dashboard to enable visibility into incoming shipments and allow logistics actors to make quick decisions about where the shipments should go based on projected storage space availability at the Abuja and Lagos warehouses. Before introducing the tool, responsible officers were unable to proactively plan out storage before commodities arrived in country. This created negative impacts that cascaded through the supply chain and affected incoming shipments. The shipment planning dashboard works by continuously processing shipment tracker data and warehouse information to provide an integrated view of incoming shipments and analysis against projected storage space availability. Essentially, the tool enables rapid scenario testing to understand the impact of an unexpected shipment and allows supply chain actors to map out distribution and storage plans.

Exhibit 26: Abuja Shipment Planning Dashboard



- In **Zambia**, GHSC-PSM built an order processing tool for the customer service center (CSC) team at ZAMMSA to significantly reduce the time required, and human errors involved, in processing orders from the eLMIS. This tool was needed due to the time- and labor-intensive process of manually reviewing individual orders to determine stock availability in the warehouse and adjustments needed to fulfill the order—such as product substitution. The order processing tool improves efficiency by allowing the user to load and review multiple orders at the same time, remove line items not available at the warehouse, recommend product substitution where possible, and identify products where a reduction in order amount might be needed due to low stock. The tool allows the user to generate an output, validate for accuracy, and upload directly into the warehouse management system without errors. The order processing tool demonstrates



to ZAMMSA how it can use the data within its systems to reduce repetitive work, improve performance, and increase client satisfaction.

### Exhibit 27. CSC Order Processing Tool

**Orders For Review**

Summary: 6 Orders, 413 Order Lines, 6 Facilities

**Potential Actions (Double-click to Filter)**

- 0 No Stock or Substitutions, Delete
- 93 Make Substitution
- 209 Adequate Stock, No Changes Needed
- 111 Possible Quantity Reduction

**Stock Status Summary**

Coursepack	Order Numbr	eMIS Fac Code	SKU	Quantity	Unknown	Date	SKU Description	Strength	Facility name	EXPERT Fac Code	Available Stock	MSL	Percent of Stock Used	Shortage Alert	Substitute 1	Substitute 1 Units in Stock at Central (MSL)	Substitute 2	Substitute 2 Units in Stock at Central (MSL)
MSL	EMR0299FR	204202	EMR026	15		03/22	2302021 Amikacin - Hydrochloride	500mg	Kwacha Urban Health Center	20440050	0	None Available	Make Substitution	EMR024	463	EMR032	0	
MSL	EMR0299FR	204202	EMR028	20		03/22	2302021 Amoxicillin (Highly) Capsules	500mg	Kwacha Urban Health Center	20440050	94	57%	Adequate Stock, No Changes Needed	EMR020	0		0	
MSL	EMR0299FR	204202	EMR003	50		03/22	2302021 Baclofen/Carbamazepine Tablets	50mg	Kwacha Urban Health Center	20440050	9	56%	Possible Quantity Reduction	EMR027	0		0	
MSL	EMR0299FR	204202	EMR009	2		03/22	2302021 Benfenacin Hydrochloride (Trisergide) Tablet	50mg	Kwacha Urban Health Center	20440050	237	2%	Adequate Stock, No Changes Needed	EMR057	0		0	
MSL	EMR0299FR	204202	EMR002	1		03/22	2302021 Benzyl Penicillin Sodium	600mg	Kwacha Urban Health Center	20440050	5	20%	Adequate Stock, No Changes Needed	EMR002	0		0	
MSL	EMR0299FR	204202	EMR070	5		03/22	2302021 Carbamazepine Tablet	200mg	Kwacha Urban Health Center	20440050	4076	2%	Adequate Stock, No Changes Needed	EMR072	1245		0	
MSL	EMR0299FR	204202	EMR074	2		03/22	2302021 Cetirizine Sodium	5mg	Kwacha Urban Health Center	20440050	56	4%	Adequate Stock, No Changes Needed	EMR068	0		0	
MSL	EMR0299FR	204202	EMR073	8		03/22	2302021 Cetirizine Sodium	10mg	Kwacha Urban Health Center	20440050	0	None Available	Make Substitution	EMR042	13045		0	
MSL	EMR0299FR	204202	EMR052	100		03/22	2302021 Ciprofloxacin Injection	400mg	Kwacha Urban Health Center	20440050	4	600%	Possible Quantity Reduction	EMR042	0		0	
MSL	EMR0299FR	204202	EMR096	8		03/22	2302021 Chlorpheniramine Maleate Tablet	4mg	Kwacha Urban Health Center	20440050	2030	2%	Adequate Stock, No Changes Needed	EMR096	0		0	
MSL	EMR0299FR	204202	EMR055	20		03/22	2302021 Ciprofloxacin Tablets	500mg	Kwacha Urban Health Center	20440050	0	None Available	Possible Quantity Reduction	EMR078	9	EMR066	0	
MSL	EMR0299FR	204202	EMR099	20		03/22	2302021 Ciprofloxacin Tablet	750mg	Kwacha Urban Health Center	20440050	0	None Available	Make Substitution	EMR078	0		0	
MSL	EMR0299FR	204202	EMR095	30		03/22	2302021 Cloxacillin Suspension	250mg	Kwacha Urban Health Center	20440050	10	20%	Adequate Stock, No Changes Needed	EMR095	0		0	
MSL	EMR0299FR	204202	EMR054	70		03/22	2302021 Co-trimoxazole 400mg/80mg Suspension Suspension 240mg/50mg	150mg	Kwacha Urban Health Center	20440050	85	447%	Possible Quantity Reduction	EMR054	0		0	
MSL	EMR0299FR	204202	EMR010	18		03/22	2302021 Co-Trimoxazole Tablet	150mg	Kwacha Urban Health Center	20440050	1237	2%	Adequate Stock, No Changes Needed	EMR010	0		0	
MSL	EMR0299FR	204202	EMR098	5		03/22	2302021 Dextrosa Half Strength	500mg	Kwacha Urban Health Center	20440050	0	None Available	Make Substitution	EMR098	20		0	
MSL	EMR0299FR	204202	EMR029	100		03/22	2302021 Dextrosa 10% Sodium Chloride 0.9%	500mg	Kwacha Urban Health Center	20440050	2	5000%	Possible Quantity Reduction	EMR029	0		0	
MSL	EMR0299FR	204202	EMR084	10		03/22	2302021 Dexamethasone Tablet	5mg	Kwacha Urban Health Center	20440050	525	5%	Adequate Stock, No Changes Needed	EMR079	0		0	
MSL	EMR0299FR	204202	EMR081	5		03/22	2302021 Enalapril Tablet	5mg	Kwacha Urban Health Center	20440050	0	None Available	Make Substitution	EMR079	0		0	
MSL	EMR0299FR	204202	EMR020	40		03/22	2302021 Fluconazole Tablet	150mg	Kwacha Urban Health Center	20440050	0	600%	Possible Quantity Reduction	EMR020	0		0	
MSL	EMR0299FR	204202	EMR021	20		03/22	2302021 Folic Acid Tablet	5mg	Kwacha Urban Health Center	20440050	2590	2%	Adequate Stock, No Changes Needed	EMR021	0		0	
MSL	EMR0299FR	204202	EMR023	10		03/22	2302021 Frusemide Tablet	40mg	Kwacha Urban Health Center	20440050	0	None Available	Make Substitution	EMR027	21		0	
MSL	EMR0299FR	204202	EMR022	1		03/22	2302021 Gentamycin Sulphate	80mg	Kwacha Urban Health Center	20440050	3639	0%	Adequate Stock, No Changes Needed	EMR022	0		0	
MSL	EMR0299FR	204202	EMR026	30		03/22	2302021 Magnesium Sulphate	200mg	Kwacha Urban Health Center	20440050	0	None Available	Make Substitution	EMR049	39		0	
MSL	EMR0299FR	204202	EMR006	2		03/22	2302021 Metoprolol	50mg	Kwacha Urban Health Center	20440050	5	60%	Adequate Stock, No Changes Needed	EMR006	0		0	
MSL	EMR0299FR	204202	EMR018	20		03/22	2302021 Miconazole Gel Tablet	200mg	Kwacha Urban Health Center	20440050	49	57%	Adequate Stock, No Changes Needed	EMR018	0		0	
MSL	EMR0299FR	204202	EMR008	48		03/22	2302021 Nifedipine Prolonged Release Tablet	30mg	Kwacha Urban Health Center	20440050	18241	0%	Adequate Stock, No Changes Needed	EMR008	0		0	
MSL	EMR0299FR	204202	EMR030	20		03/22	2302021 Nifedipine Prolonged Release Tablet	30mg	Kwacha Urban Health Center	20440050	0	None Available	Make Substitution	EMR030	18241		0	
MSL	EMR0299FR	204202	EMR033	200		03/22	2302021 Oral Penicillin V Potassium	250mg	Kwacha Urban Health Center	20440050	0	None Available	Make Substitution	EMR033	0		0	
MSL	EMR0299FR	204202	HT1000	96		03/22	2302021 HT1 YAMBOVO (CCLA LPE) (Each each)	100mg	Kwacha Urban Health Center	20440050	529	8%	Adequate Stock, No Changes Needed	HT1000	0		0	
MSL	EMR0299FR	204202	EMR042	75		03/22	2302021 Paracetamol	500mg	Kwacha Urban Health Center	20440050	9037	0%	Adequate Stock, No Changes Needed	EMR042	0		0	
MSL	EMR0299FR	204202	EMR044	48		03/22	2302021 Paracetamol Tablet	500mg	Kwacha Urban Health Center	20440050	2268	2%	Adequate Stock, No Changes Needed	EMR044	0		0	
MSL	EMR0299FR	204202	EMR032	5		03/22	2302021 Prednisolone Tablet	5mg	Kwacha Urban Health Center	20440050	0	None Available	Make Substitution	EMR032	0		0	
MSL	EMR0299FR	204202	EMR030	1		03/22	2302021 Promethazine-Hcl	10mg	Kwacha Urban Health Center	20440050	2	20%	Adequate Stock, No Changes Needed	EMR030	0		0	
MSL	EMR0299FR	204202	EMR077	10		03/22	2302021 Silver Sulphadiazine 20g	20g	Kwacha Urban Health Center	20440050	7	70%	Possible Quantity Reduction	EMR077	0		0	
MSL	EMR0299FR	204202	EMR062	8		03/22	2302021 Sodium Chloride (Normal Saline)	0.9%	Kwacha Urban Health Center	20440050	585	3%	Adequate Stock, No Changes Needed	EMR062	0		0	
MSL	EMR0299FR	204202	EMR025	20		03/22	2302021 Sodium Valproate Tablet	500mg	Kwacha Urban Health Center	20440050	24	5%	Adequate Stock, No Changes Needed	EMR025	0		0	
MSL	EMR0299FR	204202	EMR062	8		03/22	2302021 Zinc Sulphate Tablet 20mg	20mg	Kwacha Urban Health Center	20440050	0	None Available	Make Substitution	EMR062	0		0	
MSL	EMR0299FR	204202	EMR064	10		03/22	2302021 Transamic Acid Injection 500mg(5ml) Injectable	500mg	Kwacha Urban Health Center	20440050	4	250%	Possible Quantity Reduction	EMR064	0		0	

**Available Substitutes**

Note: Right Click on Order Line to Delete or Substitute It

## GLOBAL STANDARDS AND TRACEABILITY

GHSC-PSM aims to implement GSI standards to give trading partners—including manufacturers and suppliers, logistics providers, regulatory agencies, medical stores, and health facilities—the means to operate using the same high-quality master data.

In Q2, GHSC-PSM supported nine countries<sup>42</sup> in adopting GSI standards for product identification, location identification, and data exchange. More information on standards implementation within the project can be found in Section C.1: Global Supply Chain and in the Management Information Systems section below.

Adopting global standards can enable countries to reduce costs, enhance efficiency, and improve the availability of health commodities in their public health supply chains. This work also advances adoption of GSI labeling and data standards in country regulatory guidelines and implementation roadmaps.

Country highlights for Q2 include:

- In **Ghana**, following the MOH's endorsement of the Ghana Pharmaceutical Traceability Strategy (PTS), GHSC-PSM facilitated a design workshop where stakeholders provided input into the common vision for traceability and jointly developed the Ghana Traceability Design. This design

<sup>42</sup> Burundi, Ghana, Malawi, Namibia, Nigeria, Rwanda, Uganda, Zambia, and Zimbabwe

proposes a centralized national system to support verification and traceability at the batch and serial number level anchored in GSI global standards. GHSC-PSM also reviewed and provided feedback to the Ghana Food and Drug Authority (FDA) Guideline on Implementation of Identification, Data Capture, and Data Sharing for Traceability of Pharmaceutical Products and drafted a traceability trial project to inform the regulatory framework required capabilities—including people processes, and technologies—needed to implement and enforce the stated guidelines. This design and policy framework is being deliberated in parallel with current published guidance from the Ghana FDA about use of the proprietary ProPerSeals system to assess a path forward that meets the FDA’s near-term goals for traceability while adhering to the commitment set forth by the MOH to adopt open global standards for pharmaceutical traceability as published in the PTS.

- In **Nigeria**, GHSC-PSM is implementing a pilot for capturing LLIN campaign data at 66 distribution points in Cross River State (Calabar Local Municipal Government Area) to verify net authenticity using manufacturer-provided serialized data applied on individual nets. In Q2, the project developed test plans, test cases, and the traceability matrix required for system integration testing and user acceptance testing phases of the implementation lifecycle.
- In **Uganda**, GHSC-PSM is implementing an automatic identification and data capture (AIDC) solution to support barcode scanning for warehouse operations management of all pharmaceutical products at JMS—including using GTIN as a secondary product identifier and supporting barcode label printing upon receipt for non-GTIN products. Phase 1 of the project went live in Q1 and has been operating smoothly. In Q2, the project reviewed and validated the end-to-end design for Phase 2 transactions (shipping transactions, pick and pack, stock taking) using an Industrial and Financial Systems application. Phase 2 is expected to start after JMS makes a decision on its ERP system replacement or upgrades to the latest version of the current ERP system, from IFS 9.0 to IFS 10.0 or the IFS Cloud version. This decision should be concluded during this quarter and the Phase 2 schedule will be dependent upon the direction chosen by JMS.
- In **Zambia**, GHSC-PSM worked with the MOH to support progress toward national traceability objectives by implementing a National Product Catalog (NPC). This activity involves a three-phase approach—Phases 1 and 2 include manual integration between the Product Catalog Management Tool (PCMT) and the GDSN in Phase 1, and between PCMT and the WMS in Phase 2, while Phase 3 involves continuous monitoring and maintenance of the technology. The project began Phases 1 and 2 in Q1, working with GSI South Africa and Expert (the WMS vendor). In Q2, the project initiated Phase 3 by supporting data cleaning and harmonization and developing SOPs for product master data management, and GDSN and WMS integrations. GHSC-PSM also conducted trainings and user acceptance testing for data stewards from ZAMMSA and the MOH.
- In **Zimbabwe**, GHSC-PSM worked with the Ministry of Health and Child Care (MOHCC) and the National Pharmaceutical Company (NatPharm) to assess the feasibility and country readiness to deploy an AIDC technology solution. The project reviewed the existing state of the product master data housed in NatPharm’s information system and the MOHCC’s eLMIS, evaluated these systems’ capabilities to store and manage GTIN and product-related packaging hierarchies, and

visited the national and two regional warehouses to assess their operational readiness to adopt AIDC. Following the assessment, the project:

- Worked with NatPharm to begin data collection of GTINs in the warehouses to enrich the data needed for developing a national product master data workbook.
- Provided SOPs on barcode data collection.
- Worked with NatPharm's ®Microsoft NAVISION<sup>43</sup> solution provider and MOHCC's eLMIS experts to validate the capabilities of these information systems for housing GTINs and packaging hierarchies.
- Identified the warehousing operations suitable for barcode data capture technology solutions.
- Conducted a workshop with all stakeholders, including MOHCC, NatPharm, and the Medicines Control Authority of Zimbabwe, to capture inputs into an AIDC deployment roadmap.

## FORECASTING AND SUPPLY PLANNING

GHSC-PSM provided FASP technical assistance to 36 countries<sup>44</sup> to integrate FASP capabilities, develop country-led solutions, and improve program managers' ability to maintain enough inventory to meet disease prevention and treatment targets, and address client demand. This included quantification assistance, training, and supply plan monitoring.

### ***Promoting wide adoption of QAT***

Key to ensuring the sustainability of QAT is wide user adoption of the tool. For any product/service to survive, there needs to be a significant demand for it. Having a large pool of users for QAT signals to other global players that the tool improves current processes. This may influence their buy-in and potentially make the tool less dependent on USAID funding. To this end, GHSC-PSM engages health supply chain partners and stakeholders to build a broader global user base for QAT. For example, in Q2, GHSC-PSM made a presentation about QAT to CHAI's supply chain community of practice, which included a wide audience from the headquarters and country offices. GHSC-PSM also continued working with UNICEF—

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<sup>43</sup> Microsoft Navision is an enterprise resource planning system that provides businesses with an end-to-end solution for connecting and managing all processes (such as sales, purchasing, and accounting, plus general reporting).

<sup>44</sup> Angola, Benin, Botswana, Burkina Faso, Burma/Myanmar, Burundi, Cambodia, Cameroon, Côte d'Ivoire, Democratic Republic of Congo, eSwatini, Ethiopia, Ghana, Guinea, Haiti, Kenya, Laos, Lesotho, Liberia, Madagascar Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, South Sudan, Tanzania, Thailand, Togo, Uganda, Zambia, and Zimbabwe.

using funding from USAID’s Bureau of Humanitarian Assistance (BHA)—to pilot the use of QAT for supply planning of nutrition products.

In Q2, GHSC-PSM provided remote and in-person technical assistance to strengthen capacity for QAT<sup>45</sup> use:

- In **Burundi**, worked with the country office to train 10 staff members from the Burundi MOH, UNDP, and USAID. GHSC-PSM subsequently provided remote mentoring to the Burundi country office staff to conduct a three-year forecast and two-year supply plan for ARVs, RTKs, TPT, opportunistic infections, laboratory commodities, and malaria products using QAT.
- In **DRC**, trained 16 GHSC-TA Francophone country office staff from Benin, Burkina Faso, DRC, Niger, and Togo.
- In **Ethiopia**, trained 17 staff from the MOH, Ethiopian Pharmaceutical Supply Agency, Global Fund, CHAI, and GHSC-PSM in Ethiopia.
- In **Malawi**, trained 36 participants from various organizations and health programs, including government officials, the CDC, VillageReach, CHAI, World Food Programme, UNDP, and UNICEF.
- In **Rwanda**, trained 27 participants from the MOH, Rwanda Medical Supply Ltd), Transforming Rwanda Medical Supply project, Rwanda Biomedical Center (RBC)/National Reference Laboratory, RBC/HIV, RBC/TB, RBC/Malaria, UNFPA, CHAI, UNFPA, and GHSC-PSM staff in Rwanda.
- In **Sierra Leone**, facilitated a training on QAT’s supply planning for 15 participants, including staff from the MOH, UNICEF Sierra Leone, and the UNICEF Supplies Division. After the training, GHSC-PSM facilitated the trainees’ onboarding on QAT and provided remote support to finalize the country’s supply plans using the tool.
- In **Zambia**, trained 26 participants from the MOH (national headquarters, University Teaching Hospital, National Malaria Elimination Centre, and National Supply Chain Control Unit), ZAMMSA, the Association of Public Health Laboratories, and GHSC-PSM staff in Zambia. The project also assisted in developing a three-year national-level forecast for FP/RH commodities and essential medicines to support the Zambian MOH/ZAMMSA.

### ***Improvements to the tool***

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<sup>45</sup> QAT is a cloud-based software for in-country stakeholders to optimize commodity procurement and delivery schedules, monitor product stock status, and share data with external platforms and stakeholders. With an enhanced user interface, greater analytical capabilities, and automated data exchange, this tool enables program managers to easily build multiple forecasts for comparison and selection, optimize commodity procurement and delivery schedules, monitor product stock status, and share data with external platforms and key stakeholders.

To enhance user experience and ensure that QAT meets country requirements, GHSC-PSM continues to refine the tool’s features and functionality based on user feedback.

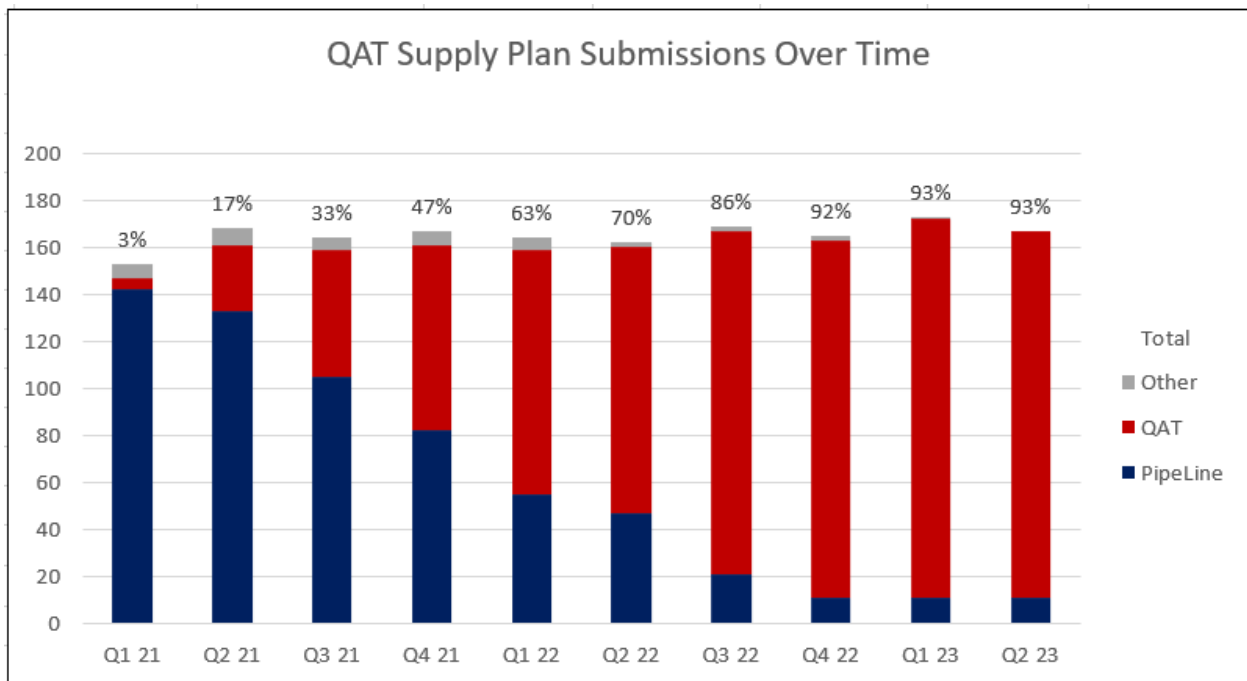
In Q2, the project:

- Held an internal workshop in Washington, D.C. (with one participant calling in from Benin) to discuss, prioritize, and decide on the change requests (CRs) on QAT’s features to implement in FY 2023. The project reviewed the 160+ CRs received and prioritized the requests for new/improved features based on how much they would enhance the tool’s user interface and better align it with in-country FASP processes.
- Kicked off discussions with USAID around the transition of QAT’s source code and main application to another implementing partner. The transition is critical to ensuring the long-term sustainability of QAT and its smooth transition to NextGen.

### **QAT use for supply planning**

GHSC-PSM continues to support countries’ use of QAT for supply planning. In Q2, the project reviewed 167 supply plans to verify that they complied with data quality, supply planning, and procurement scheduling standards. This included 153 USAID high-priority supply plans from 31 countries.

Exhibit 28. QAT Supply Plan Submissions Over Time



## MANAGEMENT INFORMATION SYSTEMS (MIS)

GHSC-PSM improves data accuracy and quality for MIS implementation, including GSI-compliant standardized product data to build master data sets—an important step toward end-to-end data visibility. The project works with countries to evaluate the data captured in information systems (e.g., eLMISs and warehouse management systems) for standardization and to establish methods and plans for managing master data sets across information systems to avoid redundancy, validate accuracy, and ensure quality data.

***Making GHSC-PSM’s information technology solutions available for public use.*** GHSC-PSM continued to publish open-source applications and tools developed under the project on GitHub. In Q2, the project published four applications on the GitHub website for public reference, including the Inventory-Demographic Analysis for Family Planning, Inventory Analysis, Anomaly Detection Tool, and mobile NPC application. These applications are accessible on the [GHSC-PSM GitHub](#) repository.

***Promoting the USAID Digital Strategy Initiative for public health.*** GHSC-PSM, with the MOHs of **Malawi** and **Rwanda**, developed country-specific MIS enhancement plans, which included an architecture for integrated information system that shares data across agencies and donors within each country. In Q2, the project worked with the Rwanda MOH to analyze progress in implementing the MIS plans and to develop and publish an RFP to enhance the existing eLMIS with warehouse management features for the central and regional warehouses.

## LABORATORY NETWORKS

GHSC-PSM promotes efficient and well-planned laboratory networks and supports quality service delivery through data-driven laboratory diagnostic network optimization, GIS visualization of data, and forecasting and supply planning for laboratory commodities. The project also manages the compilation and submission of the Instrument Procurement Questionnaire for USAID approval to ensure that all elements of procurement or leasing of equipment required for diagnostic testing, such as servicing, maintenance, capacity, utilization, and installation requirements, are addressed.

GHSC-PSM leads DNO with multiple stakeholders—including USAID, CDC, MOHs, implementing partners, and donors. Once all input data are collected and cleaned, the project uses two tools—OptiDx and supplemental interactive maps developed using the Python Library Folium. The maps visualize networks, including locations of health facilities, laboratories, and hubs, referral linkages, distances between facilities, testing volumes, machine capacity and utilization, and testing demand by administrative area. These maps have two main uses: first, at the initial stages of the DNO, they can present the data collected to validate data accuracy before loading it into OptiDx and identifying opportunities and optimization. Second, maps can highlight elements of the testing scenarios and the impact of changes on the diagnostic network in the final stages of analysis. Stakeholders can then review the scenarios and develop an operational plan that considers how the proposed changes to the lab network affect the budget, operations, human resources, and logistics.

DNO activities conducted in Q2 include:

- In **Burundi**, GHSC-PSM led stakeholders through the iterative DNO process to identify and resolve data gaps. The project then reviewed the baseline analysis in OptiDx and will finalize the scenarios in line with the DNO objectives in Q3.
- In **Ghana**, months of data collection, collation, verification, and analysis culminated in a final DNO workshop in February 2023. During the workshop, the project presented to stakeholders three selected scenarios—focused on GeneXpert and conventional PCR device placements and multi-disease integrated testing—and began developing a strategy and implementation plan based on recommendations from the DNO activity.

**Supporting quantification for laboratory commodities.** The QAT forecasting module includes functionality to forecast laboratory reagents and consumables. In Q2, GHSC-PSM included a session on using QAT to develop forecasts for HIV laboratory commodities in all its trainings. In Haiti, the project supported forecasting for laboratory commodities as part of the country’s annual national laboratory quantification workshop, with a focus on various RTKs, testing for CD4, VL and EID, and select chemistry and hematology testing. The project also supported Angola in gathering data and assumptions in preparing for the annual national laboratory quantification workshop in Q3.

## WAREHOUSING AND DISTRIBUTION

GHSC-PSM improves warehousing and distribution systems in more than 25 countries. The project aims to move countries’ warehousing from being a mid-/long-term storage facility strategy to a distribution center model with a focus on reducing order process cycle times. This requires infrastructure and process changes to ensure warehouses can keep up with the increased speed needed for frequent inventory turns and shorter order cycle times. Activities include improving data-driven decision-making across the supply chain, optimizing distribution networks, and increasing efficiencies in warehousing and distribution operations.

The project is rolling out a policy to establish an acceptable level of warehouse inventory variance and cycle count methodology for all GHSC-PSM stakeholders. The policy applies to all activities where the project directly oversees warehouse operations, has contractual agreements with a 3PL provider for warehousing services, or supports warehouse operations with other implementing partners or their MOH counterparts (e.g., through a central medical store or a parastatal).

### **3PL subcontracting**

GHSC-PSM uses key performance indicators (KPIs) in 3PL subcontracts to manage performance and minimize risk. Angola, Ethiopia, Ghana, Haiti, Liberia, Malawi, Sierra Leone, and Zambia already use these KPIs in their RFPs for upcoming contract modifications or renewals. The project reviews and updates these KPIs periodically and completed a review of the distribution KPIs in Q2. GHSC-PSM is also developing a KPI tool and dashboard for each country to establish a robust mechanism and record of 3PL performance and allow GHSC-PSM to compare KPI results across countries. In Q2, the project included KPIs in its logistics services contract with JMS in Uganda, and worked with Angola and DRC to continue piloting the KPI dashboard.

### ***Activity-based costing/activity-based management***

GHSC-PSM implements private sector approaches, such as activity-based costing/activity-based management (ABC/ABM). The project recognizes that warehousing and distribution are part of a larger strategy requiring integrated procurement, transportation, storage, picking and packing, delivery, and other activities to increase velocity, improve orchestration and performance, as well as lower the risk of expiry and warehouse operational costs.

In Q2, GHSC-PSM provided virtual technical assistance to Ghana, Kenya, Uganda, and Zambia—all of which are in various stages of ABC/ABM implementation:

- In **Kenya** and **Uganda**, GHSC-PSM conducts quarterly reviews of profit and loss (P&L) results with the Mission for Essential Drugs and Supplies (MEDS) and JMS, respectively. The P&L statements provide MEDS and JMS with detailed visibility into their own expenses to improve planning. The project has supported JMS and MEDS ABC/ABM implementation since FY 2018 and 2021, respectively. Both MEDS and JMS continue to use the P&L analysis to modify existing practices and discontinue non-value-added activities. This continues to result in decreased operating costs and improved performance.
- In **Ghana**, GHSC-PSM provided virtual technical assistance for ABC/ABM implementation at the Ashanti and Eastern regional medical stores (RMS). GHSC-PSM holds weekly meetings with the RMS finance team and their warehouse and supply managers to discuss their daily planner, monthly labor report, and customization and use of P&L statements. In Q2, the project worked with the RMS finance team and the RMS management teams to review their labor reports to ensure accurate capture of labor data in completing direct and indirect supply chain functions.
- In **Zambia**, GHSC-PSM provided in-person technical assistance to the ZAMMSA central medical stores to re-introduce the ABC/ABM concept, implement the daily planner, and review the cycle count methodology. The project worked with consultants and the ZAMMSA team to set up a Power BI dashboard that synchronizes hourly to display data in real time.

### ***Metrics for better management of warehousing and distribution and performance***

In FY 2022, GHSC-PSM proposed an alternative measure for assessing warehousing and distribution capability and performance at all supply chain levels to demonstrate technical assistance gains over time. Referred to as Warehouse, Inventory, and Strategic Distribution Optimization Metrics, or WISDOM, this method of assessment comprises five processes and metrics that the project implements and tracks to give warehouse management the real-time data visibility needed to diagnose and rectify potential issues while improving performance across all activities. The five focus areas for measurement are stockouts/stock available, inventory turns, perpetual inventory/geographic cycle counting for inventory accuracy, warehouse throughput, and cost per unit.

In Q2, GHSC-PSM incorporated geographic cycle counting as a standard metric for contracts with 3PLs and began collecting data from countries. The project continues to work with MEDS/Kenya, JMS/Uganda,



NDSO/Lesotho, and Rwanda Medical Supply Ltd/Rwanda to promote ABC/ABM in warehousing operations, as this is required for adoption of the warehouse throughput and cost per unit focus areas.

### **Barcode scanning for better inventory management**

GHSC-PSM provided warehouse barcode scanners to **Eswatini**'s CMS to increase warehouse efficiencies, including pick accuracy and order fulfillment. The accuracy and timeliness of inventory data are vital in determining when new orders need to be placed and when products need to be shipped, preventing the risk of facility stockouts that would lead to patient treatment interruptions. GHSC-PSM procured 21 barcode scanners in FY 2022 to support inventory management activities at the CMS and contracted a local firm to develop an app that linked the scanners to Microsoft™ Dynamics Navision® software (NAV), which is the warehouse management system (WMS) for Eswatini. The project is providing training to warehouse staff in the application and is working with the CMS and other funders to expand use of the barcode scanners for all program commodities at CMS and lab warehouses and for all supply chain processes, from commodity receiving to distribution.

## **WORKFORCE DEVELOPMENT**

GHSC-PSM strengthens public health supply chain workforces through the project's country offices. These activities build sustainable workforces through professionalization and systematic assessments and approaches to workforce development.

### **Building capacity for supply chain management**

GHSC-PSM annually offers USAID personnel the opportunity to partake in an Introduction to Supply Chain Management (SCM) course. The course employs self-learning through pre-recorded video lectures, discussion boards, pre-recorded interviews, and eight synchronous live sessions over two weeks. GHSC-PSM delivers the course using a hybrid model (virtual and in-person). In Q2, the project delivered the course to 27 USAID staff, 22 of whom completed the course in the given timeframe.

### **Country-specific workforce development activities:**

- In **Sierra Leone**, GHSC-PSM began developing a training curriculum on the nationally endorsed integrated health commodities logistics system SOP. The curriculum, which includes a trainer's guide and participant workbook, will be used to conduct a training-of-trainers workshop in Q3. The training content will focus on SDP data capture, reporting, and supportive supervision.
- In **Rwanda**, GHSC-PSM used the People that Deliver process mapping tool to gather and analyze data from all facility types across all levels of Rwanda's health supply chain system, including Rwanda Medical Supply Ltd, one of its branches, a tertiary hospital, provincial hospital, district hospital, health center, and health post. Following this exercise, the project developed a document titled, "Supply Chain Management Professionalization in Rwanda," which was reviewed by People that Deliver, the Rwanda country office, and USAID. This document will be used to develop targeted advocacy materials for the MOH and institutions offering the SCM course.

## STRATEGY AND DESIGN (FORMERLY LEADERSHIP AND GOVERNANCE)

As FY 2023 continues, more countries are reviewing or developing long-term strategic plans that focus on the future of the health supply chain in their countries.

Country-specific technical assistance activities in Q2 include:

- In **Angola**, facilitated development of the 2023–2028 national supply chain strategy and worked with the MOH to determine areas that would require additional support in the coming years.
- In **Botswana**, supported the completion of a draft five-year supply chain strategy.
- In **Malawi**, worked with the MOH to finalize and publish the national health sector strategic plan, or HSSP III. For the first time, the plan includes a health supply chain section added with GHSC-PSM's support in FY 2022.

## END-USE VERIFICATION SURVEY

GHSC-PSM assesses the availability of malaria, FP/RH, and MNCH commodities at health facilities using the EUV survey to collect data on attributes that contribute to commodity availability, including storage conditions, staff capacity, and stock management. The project presents findings to Missions and MOHs and helps facilitate conversations and activities to improve commodity availability. The survey gathers qualitative data, which provides insights into the reasons for stockouts. EUV data can also be used to triangulate LMIS results and identify stock availability trends. EUV data collection is an important opportunity for GHSC-PSM country teams to provide on-site capacity building for health facility staff without increasing the burden on staff.

In Q2, GHSC-PSM successfully implemented the EUV survey in Angola, Ghana, and Nigeria. Angola, Guinea, Liberia, Mali, Nigeria, and Sierra Leone project country offices, in collaboration with MOH and NMCP staff, submitted the COVID-19 continuity of care module developed in FY 2020 to track COVID-19 disruptions to service delivery. Given the official end of the pandemic this module will be removed from future EUV surveys.

## NATIONAL SUPPLY CHAIN ASSESSMENT

The [National Supply Chain Assessment](#) (NSCA) is a comprehensive capability and performance review at all levels of a health supply chain. Assessment results help supply chain stakeholders develop their strategic, operational, and investment plans and monitor activities to their desired outcomes.

In Q2, GHSC-PSM supported implementation of the NSCA in Burundi and Guatemala:

- In **Burundi**, GHSC-PSM completed a scoping trip to meet with in-country stakeholders and finalize implementation plans. All activities are on schedule, and data collection is scheduled for Q3.

- In **Guatemala**, the project conducted in-country data collection, completed all implementation-related activities, and submitted a draft report to USAID and the MOH for review and feedback. A dissemination workshop is planned for Q3.

GHSC-PSM continues to engage in discussions with countries to scope potential FY 2023 and FY 2024 NSCAs with ongoing plans for field assessments in Ethiopia and Lesotho.

## LEARNING AGENDA: SUPPLY CHAIN TECHNICAL INDEPENDENCE INDICATOR

In Q2, GHSC-PSM continued to work on the FY 2023 technical independence indicator learning activity. This year's activity seeks to understand the relationship between technical independence and technical quality, such as whether or not a host-country entity increases its performance on a particular supply chain activity through the process of reaching technical independence. The project shared the study design with USAID in Q2 and began discussions on the final structure and analytical approach. To further inform the study design, GHSC-PSM implemented a data availability and feasibility survey with country offices. The survey's outcome will inform the final design of the activity, which is set to begin in Q3.

## C2A. PROJECT PERFORMANCE

GHSC-PSM collects and analyzes data on several indicators of national supply chain system health to understand the environments in which the project operates and to help calibrate our work. These indicators help establish priorities for the project's health systems strengthening support and, over time, will enable the project to assess the outcomes of technical assistance. Dashboards with these country-specific indicators are available for GHSC-PSM country offices to explore with in-country stakeholders.

## CAPACITY BUILDING

The number of people trained is an indicator on which the project focuses its capacity-building resources and identifies areas for improvement related to supply chain outcomes. GHSC-PSM trained 3,992 individuals in Q2 (1,754 women and 2,238 men).

Most trainings were cross-cutting and addressed topics relevant to multiple health areas. By funding source, 49 percent were trained with HIV/AIDS funding; 19 percent with malaria funding; 7 percent with FP/RH funding; and 25 percent with MCH funding. Trainings focused on warehousing and inventory management, LMIS, governance and finance, transportation and distribution, and human resource capacity development.

## ENVIRONMENTAL COMPLIANCE

In accordance with USAID's Environmental Procedures (22 CFR 216), the project implements the GHSC-PSM Initial Environmental Examination and the Environmental Mitigation and Monitoring Plan.

Implementation includes multi-faceted services to all global staff, such as a review of technical documents pertaining to 22 CFR 216, technical guidance and advisory support, training and capacity building, and direct technical assistance.

In Q2, GHSC-PSM requested and received an extended deadline from USAID to submit the FY 2022 Environmental Mitigation and Monitoring Report. The project also began drafting a guide on waste disposal of expired commodities in preparation for closeout and transition.

### C3. Global Collaboration



Submitted **four abstracts** for the **International AIDS Society conference**, **three abstracts** for the **ASTMH 2023** conference, and **two abstracts** for the **International Maternal Newborn Health Conference (IMNHC)**.



Published **Call to Action: [Improve Access and Use of Quality Medicines to Save Lives of Children and Newborns](#)**, which highlights actions governments can take to address the infections that are leading causes of maternal and child mortality.

The scale, scope, and complexity of managing a global supply chain require collaboration with international and local partners to ensure the availability of medicines and health commodities. By integrating work across health sectors and sharing information, resources, activities, and capabilities, the project can achieve what it could never accomplish alone. GHSC-PSM's global collaboration efforts focus on coordinating with global donors and stakeholders to develop innovative means for responding to supply chain interruptions.

#### Strategic Engagement

As described throughout this report, GHSC-PSM engages with global players to promote the availability of medicines and commodities. The project does this by providing supply chain expertise and working with partners—locally and globally—to reach more communities, allocate scarce supplies, promote harmonization of standards and practices, and manage commodity stock information as a global good. Highlights of groups in which the project participates are recapped below.

- Host monthly **Proactive Stock Risk Management (ProStock)** meetings with USAID as a forum for building on the project's HIV/AIDS data collection and analysis, discussing gaps in HIV commodity access, and implementing action plans to address them. (See section B1.)
- Serve as a member of the **Global Donor Technical Working Group** and participate in bi-weekly meetings to coordinate actions and resolve problems with malaria commodity suppliers who cannot fulfill demands because of capacity constraints due to COVID-19. (See section B2.)
- Participate in the **Newborn Technical Working Group** alongside experts from USAID, UNICEF, and WHO. This group oversees the ENAP. (See section B4.)
- Participate in and share and create resources with the **Maternal Health Supplies Caucus (MHSC)** and the USAID and BMGF-funded CHTF. (See section B4.)

- Participate in the **Verification and Traceability Initiative**, a multi-stakeholder partnership composed of UNICEF, Gavi, BMGF, the Global Fund, USAID, national regulatory authorities in Nigeria and Rwanda, Vital Wave, and the World Bank. (See section C2.)
- Participate in the **I2I** steering group that is providing post-market information to update the [draft WHO Guideline for Prequalification of ITNs](#). (See section B2.)

## Knowledge Sharing

To ensure that MOHs, supply chain managers, donors, and other supply chain stakeholders can repurpose program activities and develop locally led solutions, GHSC-PSM documents and shares project activities, technical research, and success stories. Details can be found in sections throughout the report, but below are some highlights from Q2:

- Submitted four abstracts for the **International AIDS Society conference**, three abstracts for the **ASTMH 2023** conference, and two abstracts for the **IMNHC**.
- Collaborated with USAID/Washington on a **VMI Orientation Guide** that provides an in-depth understanding of the VMI transition process. This document will be shared with USAID Missions, implementing partners, and MOHs interested in this VMI solution in Q3. (See section B1.)
- **Presented on the impact of transforming VL testing** through strategic procurement to PEPFAR and other global public procurers to a large audience from the State's Office of the U.S. Global AIDS Coordinator and Health Diplomacy), USAID, and CDC. GHSC-PSM and USAID held a similar informational webinar for the Global Fund. (See section B1.)
- Presented findings from the landscape analysis of supply chain mobile solutions to support community health workers in last-mile delivery at the **CHW Symposium held in Liberia**. (See section B3.)
- Presented key considerations for hormonal IUD procurement at the “**Hormonal IUD 101: Method Basics & Early Lessons Learned, Quality-Assured Products, Procurement Considerations**” webinar. (See section B3.)
- Participated in the **GSI Global Forum** in Brussels, Belgium, where the project presented on strategic engagement approaches to advance national adoption of GSI Standards for pharmaceutical traceability and engagement opportunities with GSI Member Organizations in support of national traceability strategies. (See section C2.)
- Presented the FY 2022 business case for local manufacturing activity results in collaboration with IQVIA to the **RHSC Market Development Approaches Working Group** and on the project's work to reduce contraceptive packaging at the **RHSC SSWG meeting**. (See section B3.)

- Published the technical report, “[Using a Data Science Approach to Build Timely, Sustainable, Repeatable and User-centered Analysis to Drive Actions](#),” which explores strengthening monitoring and evaluation processes through a data science approach to analytics.
- Published the resource, “[Call to Action: Improve Access and Use of Quality Medicines to Save Lives](#),” in collaboration with MTaPS, PQM+, and other CHTF partners. (See section B4.)

### Country collaboration

- In **Guinea**, worked with key stakeholders to develop an operational plan for procuring and managing eight incinerators to be donated to Guinea by Global Fund as part of its COVID-19 response. The project will be responsible for implementing the plan. (See Annex A.)
- In **Malawi**, held a remote training on QAT’s supply planning module for UNICEF staff in support of the UNICEF/BHA pilot on using QAT for nutrition programs. (See section C2.)
- In **Mozambique**, conducted an in-person QAT training for more than 30 prospective users, including stakeholders from the Center for Medicines and Medical Articles, (CMAM), National Directorate of Medical Services (DNAM), MOH, Global Fund, and UNICEF. (See section C2.)
- In **Niger**, collaborated with CRS, the Global Fund principal recipient, to identify and address malaria commodity funding gaps for 2023 and Q1 FY 2024. (See section B2.)
- In **Rwanda**, used the People that Deliver process mapping tool to gather and analyze data from health facilities across Rwanda. Following this, the project developed a document titled, “Supply Chain Management Professionalization in Rwanda,” which was reviewed by People that Deliver, the Rwanda country office, and USAID. (See section C3.)

### Collaboration With Other USAID GHSC Projects

GHSC-PSM is a member of the GHSC program family and interacts regularly with the other GHSC projects.

In particular, GHSC-PSM collaborates with GHSC-QA to share information, identify mutual challenges and solutions, and ensure QA requirements are incorporated into GHSC-PSM systems. Furthermore, GHSC-PSM collaborates with GHSC-QA to streamline and optimize QA and QC business processes and procedures to rapidly address any incidents and product failures as they occur, ensuring quality products reach the end consumer. In Q2, GHSC-PSM:

- Identified areas for process and communication improvements among the project, suppliers, and GHSC-QA in reporting quality incidents related to transport of temperature-controlled products and reporting of incidents related to temperature excursions. (See section B1.)
- Worked with GHSC-QA to streamline and optimize lab commodity procurement from local eligible suppliers. (See section B1.)

- Worked with GHSC-QA and USAID to address supply issues for a DBS component. USAID and GHSC-QA approved an alternative capillary tube to mitigate the supply issue for pending orders. (See section B1.)
- Continued to work with the new supplier of rifapentine/isoniazid, in collaboration with GHSC-QA and USAID, to meet rising demand following initial quality challenges with this supplier in Q2. (See section B1.)
- Led a joint supplier conference with support from GHSC-QA for three selected ARV suppliers to launch the VMS program. (See section B1.)
- Pursued negotiations with three suppliers to begin procuring WHO-PQ COVID-19 therapeutics in support of the Test-to-Treat program. (See Annex A.)

GHSC-PSM also provides forecasting and supply planning as well as in-country logistics support to the GHSC-RTK project, which undertakes HIV/AIDS RTK procurement and international freight. GHSC-PSM shares data monthly with GHSC-RTK to guide HIV-RTK procurement planning and data triangulation and reviews HIV testing targets against HIV-RTK stock in countries with PEPFAR-supported HIV testing programs. (See section B1.)

In Q2, GHSC-PSM worked with GHSC-QA, MTaPS, and PQM+ to plan for a cross-cutting workshop to identify key elements, opportunities, and challenges that should be considered in a supply chain strategy that would support USG's strategic goals on regionalization.

### **Other Global Collaboration**

- GHSC-PSM continued providing the **USAID MOSAIC** program with commodity procurement and logistics support in Q2. (See section B1.)



## Annex A. COVID-19 Response



In Q2 the project delivered more than **6.9 million** COVID-19 commodities to **six countries**<sup>46</sup> approved for American Rescue Plan Act (ARPA) funding, including COVID-19 RTKs, N95 face masks, and assorted PPE.



In Q2, in light of declining demand for PPE and RTKs, GHSC-PSM **retired the PPE and RTK stockpiles.**

### Global Procurement and Logistics

#### COVID-19 Test-to-Treat Program

In FY 2022, GHSC-PSM received funding to support the COVID-19 Test-to-Treat Program for Bangladesh, Botswana, Côte d'Ivoire, El Salvador, Ghana, Lesotho, Malawi, Mozambique, Rwanda, and Senegal. Under this program, in Q2:

- The project worked with implementing partners in Bangladesh to deliver an order of COVID-19 RTKs.
- GHSC-QA qualified a supplier of generic nirmatrelvir + ritonavir for procurement by GHSC-PSM. The project began contract negotiations with this supplier, and an agreement is set to be executed in Q3.
- GHSC-PSM executed an inventory order for 20,208 treatment courses of generic molnupiravir for eight countries. GHSC-PSM will preposition the product at the RDC in Dubai in Q3. Upon confirmation of product registration and receipt of import duty waivers, the project will ship the treatment courses to the recipient countries.

#### COVID-19 and the Global Supply Chain

In Q2, GHSC-PSM worked on the following **global supply chain** activities to manage and respond to COVID-19.

**Procurements Under COVID-19 ARPA.** Under ARPA funding, GHSC-PSM is procuring cold chain supplies, cold chain equipment, bulk liquid oxygen, diagnostic tests, general patient care commodities, laboratory consumables, essential medicines, and PPE, along with a limited range of critical COVID-19 commodities for

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<sup>46</sup> Honduras, Namibia, Haiti, Ukraine, Zimbabwe, and Bangladesh

countries requiring emergency supplies, establishing a virtual stockpile of COVID-19 commodities, and providing related technical assistance.

In Q2, GHSC-PSM delivered critical medical supplies and equipment to:

- **Honduras:** 61,400 surgical gowns, 33,750 surgical face masks, 338,000 surgical gloves, 51,200 bouffant caps, 34,000 N95 face masks, 8,612 protective goggles, 12,000 shoe covers, and 2,000 liters of antibacterial hand soap
- **Namibia:** 300,000 surgical gloves
- **Haiti:** 100,000 COVID-19 RTKs, 400,000 examination gloves, 300,000 surgical face masks, 50,000 plastic face shields, and 100,080 N95 face masks
- **Ukraine:** 92,500 COVID-19 RTKs
- **Zimbabwe:** 5,000,000 examination gloves
- **Bangladesh:** 45,000 COVID-19 RTKs

**COVID-19 stockpiles: PPE and RTKs.** In Q2, at USAID’s direction, and in light of declining demand for PPE, GHSC-PSM retired the PPE stockpile and released the remaining PPE stock back to the supplier at no cost to the project. Similarly, in Q2, the project depleted the remaining stock in the RTK stockpile and at USAID’s direction, did not replenish it.

GHSC-PSM prepared a summary of country orders fulfilled through the project’s RTK and PPE stockpiles. The project delivered a total 12 country orders against the stockpiles during the 12-month stockpile term, including 100,000 COVID-19 RTKs and approximately 850,080 products from the PPE stockpile for Haiti.

Exhibit 29, Quantities Procured and Delivered to Countries from the PPE and RTK Stockpile

<b>Personal Protective Equipment Stockpile</b>	
<b>Panama</b>	
Examination gloves	1,200,000
N95 face masks	100,000

<b>Haiti</b>	
Examination gloves	400,000
Plastic face shields	50,000
N95 face masks	100,080
Surgical face masks	300,000
<b>Honduras</b>	
Surgical gowns	50,224
Examination gloves	148,900
Plastic face shields	12,120
Surgical face masks	300,000
<b>PPE stockpile Sub-Total</b>	<b>2,661,324</b>

**Rapid Test Kit Stockpile**

<b>Tunisia</b>	
Standard COVID-19 Ag test kit	60,375
<b>Botswana</b>	
Standard COVID-19 Ag test kit	39,875
<b>Madagascar</b>	
Standard COVID-19 Ag test kit	99,750
<b>Haiti</b>	
COVID-19 Ag rapid test kit	100,000
<b>Ukraine</b>	
COVID-19 Ag rapid test kit	402,200
<b>Honduras</b>	
COVID-19 Ag rapid test kit	120,000

<b>RTK stockpile Sub-Total</b>	<b>822,200</b>
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### ***Procurement and installation of oxygen-related commodities***

Supplemental oxygen is an essential, lifesaving treatment for people infected with COVID-19. As part of its global response to the pandemic, USAID tasked the project with procuring and delivering oxygen commodities, including pressure swing adsorption plants, vacuum swing adsorption plants, oxygen concentrators and cylinders, oxygen disaster manifolds, as well as consumable and durable items. Activities in Q2 included:

- Supporting bulk liquid oxygen (LOX) projects in Botswana. GHSC-PSM is establishing a project charter with the Mission and MOH in Botswana for three hospitals located in Francistown and Masunga. The scope of work includes installing vacuum-insulated evaporators with tank telemetry systems for level and pressure monitoring and cylinder manifold systems to ensure oxygen needs are met during normal and peak consumption periods at each hospital. In Q2, GHSC-PSM continued contract negotiations with the GHSC-QA-qualified supplier selected for award and will execute the agreement in Q3. Installation of equipment and orders of bulk LOX will take place after the Ministry of Health and Wellness completes infrastructure readiness work.
- Delivering 9,554 kilograms of bulk LOX to two hospitals in Namibia.
- Delivering three pressure swing adsorption (PSA) plants to Garissa, Nandi Hills, and Lodwar hospital sites in Kenya. The PSAs were accompanied by spare parts kits and 10 cylinders each.
- Shipping the final two PSA plants for Kenya. These units and the associated cylinders and spare parts are scheduled to arrive in Kenya in Q3.

***Procuring consumables and durables for ventilator support.*** In Q2, GHSC-PSM finalized the distribution of replacement filters to Paraguay. The project continued to monitor the progress of an order placed in Q4 of 14 line items of ventilator consumables and preventative maintenance training for biomedical engineers in Mongolia.

### **COVID-19 In-Country Technical Assistance**

Below are examples of COVID technical assistance activities conducted in Q2.

- In the past two years, the distribution of COVID-19 commodities such as PPEs, RTKs, mechanical ventilators, oxygen concentrators, and related products to health facilities (HFs) in **Ethiopia** was guided by a centralized distribution planning process without considering actual stock requirements. Engagement with regional emergency response teams was minimal, and distribution tracking and follow-up mechanisms to ensure delivery to health facilities were poor. As a result, in-country supply chain management practices for COVID-19 commodity distribution were plagued by inefficiency. These challenges were further amplified following a shift in focus to scaling down

the Emergency Operations Center (EOC) and moving toward routine service delivery through an integrated approach. This change compounded distribution issues from the Ethiopian Pharmaceuticals Supply Service (EPSS) to HFs through regional health bureaus, resulting in inadequate availability of these COVID-19 commodities at HFs for several months.

To address these challenges, GHSC-PSM, in collaboration with the MOH and EPSS, conducted a comprehensive stock analysis and mapping of 1,380 HFs by region, zone, and woreda to link them with supplying EPSS hubs. Then, with GHSC-PSM support, the MOH and EPSS prepared and validated an evidence-based facility-level distribution plan. The team held a series of engagements with key stakeholders at the MOH, EPSS, Ethiopian Public Health Institute (EPHI), RHBs, among others to endorse the plan. Global Fund COVID-19 commodities valued at \$23 million were targeted to flow through the new distribution plan. GHSC-PSM facilitated their distribution directly to health facilities through EPSS channels and optimized distribution by integrating with the regular refill schedules. In line with this, the project, at the Mission's request, prepared and deployed an Excel-based tool weekly to track the distribution status at all levels and communicated updates to USAID, MOH, EPSS, the Global Fund, and other key actors. In addition, to improve supply chain management of these commodities, GHSC-PSM prepared training material and provided orientations to 1,171 staff drawn from these HFs.

As a result, \$17.6 million worth of COVID-19 commodities were delivered to 85 percent (1,167 of 1,380) of targeted health facilities through this mechanism.

- GHSC-PSM assisted the **Angolan** MOH to distribute over 1 million COVID-19 vaccines from the central to municipal level during Q2 by using a 3PL to reach difficult-to-access provinces. GHSC-PSM also provided technical assistance to the MOH in developing distribution plans to prevent stockouts.

The project trained surveillance technicians from 18 provinces (164 municipalities) on Pharmacovigilance of Post-Vaccination Adverse Events of COVID-19. For this training, GHSC-PSM collaborated with the National Directorate of Public Health and the Regulatory Agency for Medicines and Health Technology to strengthen the technical capacity of surveillance professionals at all levels at the Extended Vaccination Program, Health Promotion, and the National Institute of Medical Emergency of Angola. The training included detection, notification, and investigation of possible cases of adverse effects following immunization. As a result, technicians throughout Angola are now using the notification and investigation forms and the DHIS2 platform in line with a SOP developed by the project. GHSC-PSM tracks form submissions on DHIS2 biweekly and conducts supervision visits with the MOH central-level staff to the provinces and municipalities.

- In **Colombia**, GHSC-PSM has been supporting the MOH in reengineering the national vaccination information system, called PAI Web, so that it can be fully functional for managing data and registries for COVID-19 vaccines as well as those from the regular immunization program. In Q2, the project 1) generated new reports, 2) fixed 129 IT bugs that previously prevented adequate functionality of the system, 3) developed 101 new functionalities that improved system performance, and 4) developed a new vaccination digital certificate, which had not been functional or available since 2022. GHSC-PSM also worked with the MOH in building capacity within its IT team so that their staff have the skills required to continue improving system performance after the GHSC-PSM-funded COVID-19 program ends in Q3.

- In **El Salvador**, GHSC-PSM, in collaboration with the Centro Nacional de Biológicos and the MOH, collected data to determine the current procedures used by the MOH for the assembly of coolers (TEST 0). The project will use this information in developing an improvement plan to ensure that vaccine transport is carried out under international quality standards through real-time temperature monitoring. To determine whether the recommended standardized process for transporting vaccines is reliable, the longest route of transportation of vaccines in the country was selected for testing.
- In **Guinea**, GHSC-PSM worked with the Program Management and Coordination Support Unit (UAGCP) to lead a workshop for key government stakeholders to develop an operational plan for procuring and managing eight incinerators to be donated to Guinea by Global Fund as part of the COVID-19 Response Mechanism funding. The project hired a Senior Supply Chain Specialist to support the team in Guinea. This specialist led the writing of the grant request for the procurement, settlement, and management of the incinerators, building on key reference documents for managing out-of-use products developed by GHSC-PSM in FY 2022. This resulted in finalizing an operational plan by the UAGC/GHSC-PSM committee that detailed a schedule of activities (2023–2025) and an estimated budget (nearly \$2 million) for incinerator use and maintenance. The Global Fund approved the operational plan and the initiation of incinerator procurement. GHSC-PSM will continue to provide technical assistance for implementing this operational plan through the end of FY 2023.
- Under the GHSC-PSM Task Order 5, Afya Ugavi, the project in **Kenya** collaborated with the Kenya MOH to plan for and manage the safe destruction of expired COVID-19 vaccines. Working jointly with the MOH vaccine disposal committee at the national level in Q2, the project team aligned priorities and developed a joint program of action for implementation. This included developing a data collection tool to verify expired COVID-19 vaccine quantities from five regional vaccine depots and 98 sub-county vaccine depots across a sample of 16 counties. The verification team also provided on-the-job training to health facility staff on appropriate record keeping, quarantine, storage, and management of expired COVID-19 vaccines. At each depot, the data validation teams categorized and counted accordingly, packaged, and sealed the expired COVID-19 vaccines for collection. The next phase of project support will involve executing a reverse logistics mop-up exercise to transport all the expired waste from the depots to approved locations for destruction.
- In **Malawi**, GHSC-PSM continued to support the MOH/EPI program on COVID-19 vaccine rollout. The project provided refresher training to 94 cold-chain technicians from all 29 districts on the OpenLMIS vaccine tracking module. The training reviewed the use of EPI data source documents, introduced best practices, and reviewed OpenLMIS modules and reports. In collaboration with MOH/EPI officials, the project conducted supportive supervision visits to vaccination sites to assess logistics management practices, check physical records, address identified challenges, assess the correctness of data in stock books and OpenLMIS, and provide on-the-job training. The project also paid for logistics costs (fuel and travel per diem) to enable MOH/EPI staff to review the OpenLMIS and physical records at the National Vaccine Store to identify gaps and suggest interventions for improvement. These activities gave EPI visibility into data from all 33 vaccine stores in the country, including batch summaries and product expiries, and built the capacity of MOH/EPI staff in vaccine management and supportive supervision.

Also, on behalf of USAID, the project supported the MOH/EPI storage payments for more than 10 million syringes and 26,000 safety boxes that are intended for COVID-19 vaccination campaigns. The project paid for 3PL provider warehousing space to store the syringes at a time when the MOH/EPI did not have adequate storage space in their dry store warehouses. This was a stop-gap measure. Also, GHSC-PSM, in collaboration with MOH/EPI officials, conducted supportive supervision visits of vaccine and supply chain data management to districts and regional vaccine stores to ensure that they are appropriately tracking vaccines and injection materials to meet accounting and reporting requirements.



# GLOBAL HEALTH SUPPLY CHAIN PROGRAM

## Procurement and Supply Management

### Global Supply Chain M&E Indicator Performance

FY2023 Quarter 2, January - March 2023

#### Delivery Impact to Date



Number of ACT treatments delivered

501,002,754



Number of Couple Years Protection delivered

94,420,020



Person-years of ARV treatment delivered

20,980,513

Delivery (OTIF, OTD and Backlog)	Cycle Time	Quality Assurance (TO2 only)	Procurement	Registration
Supply Plan Error	Forecast Error	Supply Plan Submissions	Warehousing	Vendor Performance
HIV Complete Quarterly Results (TO1)	Malaria Complete Quarterly Results (TO2)	FP/RH Complete Quarterly Results (TO3)	MNCH & Zika Complete Quarterly Results (TO4)	



# Delivery Performance

Current Reporting Period

2023-Q2



## TO Analysis

Crosscutting	Overall delivery performance has remained strong this quarter. OTIF results increased to 86 percent, and OTD decreased slightly to 88 percent. The backlog also decreased slightly compared to the last quarter, from 4.6 percent to 4.5 percent of line items. Overall delivery volume has decreased from last quarter, to 1132 line items, the majority consisting of HIV/AIDS products, and therefore the overall rating for OTIF and OTD is most influenced by the HIV/AIDS products' OTIF and OTD scores, which remained relatively consistent with last quarter. Family Planning and Reproductive Health products and MNCH products also remained relatively consistent with last quarter, while Malaria product scores increased slightly.
TO1 - HIV	Overall delivery performance for HIV commodities was strong for the period. OTD was at 87 percent in this quarter, above the goal of 80 percent. The backlog decreased to 4.7 percent this quarter, below the goal of 5 percent. There was an increase in OTIF for this quarter, which stood at 85 percent. Most delays occurred in Adult ARVs, which had the lowest OTIF of all of the HIV products this quarter; the shipments were delayed by just over two weeks due to processing delays by authorities in country. Other RTK, TB HIV, and VMMC products all had OTIF rates of 100 percent this quarter.
TO2 - Malaria	Overall delivery performance for Malaria commodities has improved this quarter. OTIF and OTD results were at 90 and 91 percent respectively this quarter, above the goal of 80 percent. The backlog increased from last quarter to 4.6 percent, while remaining within the target of 5 percent. The improvement in the OTIF and OTD scores can be most attributed to an improvement with ACTs, LLINs, and Severe Malaria Medicines. Other Non-Pharma and SMC products both at OTIF rates of 100 percent this quarter. ACTs account for the majority of line items for Malaria products, 60 out of a total of 157. RDTs saw a slight decrease in OTIF score this quarter, to 82 percent, and accounts for 17 line items. The overall delivery volume stood at 157 line items for this period, 12 of which were not delivered on time and in full (OTIF).
TO3 - FP/RH	Overall delivery performance for family planning commodities was strong for the period, with OTIF and OTD at 87 percent, and with OTD at 86 percent, above the target of 80 percent. The backlog increased to 3.6 percent, still below the 5 percent target. Delivery volume decreased this quarter to 75 line items from 81 line items in the last quarter, with the majority of line items going to the DRC. Amongst product groups, most delays were found in Copper-bearing IUDs, which only accounted for 5 of the total 75 line items this quarter. A total of 7 line items across all family planning/reproductive health products had delays this quarter, out of a total of 75 line items.
TO4 - MNCH	Delivery performance for maternal and child health products remained strong for the period, remaining at 100 percent for both OTIF and OTD. Overall delivery volume decreased this quarter to just 1 line item, an order of Essential Medicines delivered to Zambia. The backlog for this quarter was at 0 percent.

## A1a. On-time, In-Full Delivery

Task Order	Total # of Line Items Delivered	OTIF	OTIF Target
TO1 - COVID19	49	94%	80%
TO1 - HIV	850	85%	80%
TO2 - Malaria	157	90%	80%
TO3 - FP/RH	75	87%	80%
TO4 - MNCH	1	100%	80%
<b>Total</b>	<b>1,132</b>	<b>86%</b>	<b>80%</b>

## A1b. On-time Delivery

Task Order	Total # of Line Items with ADDs in the quarter	OTD	OTD Target
TO1 - COVID19	50	96%	80%
TO1 - HIV	851	87%	80%
TO2 - Malaria	150	91%	80%
TO3 - FP/RH	77	86%	80%
TO4 - MNCH	1	100%	80%
<b>Total</b>	<b>1,129</b>	<b>88%</b>	<b>80%</b>

## A16. Backlog Percentage

Task Order	Total # of line items with ADDs in the last 12 months	Backlog	Backlog target
TO1 - COVID19	285	2.5%	5%
TO1 - HIV	3,938	4.7%	5%
TO2 - Malaria	818	4.6%	5%
TO3 - FP/RH	275	3.6%	5%
TO4 - MNCH	32	0.0%	5%
<b>Total</b>	<b>5,348</b>	<b>4.5%</b>	<b>5%</b>

# Delivery Performance

Current Reporting Period

2023-Q2 ▼

Task Order	A1a. OTIF rate		A1b. OTD rate		A16. Backlog percentage	
	OTIF	Total # of Line Items Delivered	OTD	Total # of Line Items with ADDs in the quarter	Backlog	Total # of line items with ADDs in the last 12 months
<b>TO1 - COVID19</b>	<b>94%</b>	<b>49</b>	<b>96%</b>	<b>50</b>	<b>2.5%</b>	<b>285</b>
COVID19	94%	49	96%	50	2.5%	285
<b>TO1 - HIV</b>	<b>85%</b>	<b>850</b>	<b>87%</b>	<b>851</b>	<b>4.7%</b>	<b>3,938</b>
Adult ARV	78%	58	77%	57	3.5%	285
Condoms	82%	22	70%	27	4.7%	172
Food and WASH			0%	1	100.0%	1
Laboratory	84%	580	87%	580	4.7%	2,778
Other Non-Pharma	84%	38	82%	39	7.8%	179
Other Pharma	95%	43	98%	42	3.2%	155
Other RTK	100%	5	100%	5	8.8%	34
Pediatric ARV	84%	51	91%	47	4.4%	158
TB HIV	100%	13	100%	13	0.0%	59
VMMC	100%	40	100%	40	4.3%	117
<b>TO2 - Malaria</b>	<b>90%</b>	<b>157</b>	<b>91%</b>	<b>150</b>	<b>4.6%</b>	<b>818</b>
ACTs	95%	60	96%	52	0.8%	238
Laboratory	84%	19	84%	19	4.0%	174
LLINs	92%	25	100%	22	0.7%	136
mRDTs	82%	17	70%	20	5.9%	68
Other Non-Pharma	100%	2	100%	2	0.0%	21
Other Pharma	50%	2	100%	1	0.0%	5
Severe Malaria Meds	89%	19	90%	20	13.9%	101
SMC	100%	8	90%	10	5.4%	37
SP	80%	5	100%	4	21.1%	38

Task Order	A1a. OTIF rate		A1b. OTD rate		A16. Backlog percentage	
	OTIF	Total # of Line Items Delivered	OTD	Total # of Line Items with ADDs in the quarter	Backlog	Total # of line items with ADDs in the last 12 months
<b>TO3 - FP/RH</b>	<b>87%</b>	<b>75</b>	<b>86%</b>	<b>77</b>	<b>3.6%</b>	<b>275</b>
Combined Oral Contraceptives	80%	15	87%	15	4.5%	44
Copper-Bearing Intrauterine Devices	40%	5	50%	4	0.0%	15
Emergency Oral Contraceptives	100%	8	100%	8	0.0%	10
Implantable Contraceptives	95%	19	95%	19	2.7%	74
Injectable Contraceptives	91%	23	91%	23	4.4%	68
Levonorgestrel-Releasing Intrauterine Devices			0%	3	50.0%	4
Other Non-Pharma					0.0%	4
Progestin Only Pills	80%	5	80%	5	2.6%	38
Standard Days Method					0.0%	18
<b>TO4 - MNCH</b>	<b>100%</b>	<b>1</b>	<b>100%</b>	<b>1</b>	<b>0.0%</b>	<b>32</b>
Other Non-Pharma					0.0%	22
Other Pharma	100%	1	100%	1	0.0%	10

## Data notes

See "Indicator Details" pages in this report for more information.

Quarterly indicator targets are effective beginning FY2018 Q4.

Line items are considered on time if they are delivered between 14 calendar days before and up to 7 calendar days after the agreed delivery date.

All male and female condom and lubricant deliveries are reported under TO1.

# Cycle Time Performance

Current Reporting Period

2023-Q2 ▾

## A3. Average overall and dwell-adjusted cycle time

Task Order	# of line items delivered	Average Cycle Time	Cycle time target	Average dwell-adjusted cycle time	Dwell-adjusted cycle time target
TO1 - COVID19	50	287	250	283	250
TO1 - HIV	815	237	250	233	250
TO2 - Malaria	158	311	340	285	300
TO3 - FP/RH	75	335		324	
TO4 - MNCH	1	222	350	222	350
<b>Total</b>	<b>1099</b>	<b>257</b>		<b>249</b>	

## A3. Average overall and dwell-adjusted cycle time (TO3 detail)

Task Order	# of line items delivered	Average Cycle Time	Cycle time target	Average dwell-adjusted cycle time	Dwell-adjusted cycle time target
<b>TO3 - FP/RH</b>	<b>75</b>	<b>335</b>		<b>324</b>	
Direct drop fulfillment	41	360	300	355	300
Warehouse fulfillment	34	304	250	287	250

See next page for break downs by process segment, product category, fulfillment channel, and transportation mode



### TO Analysis

TO1 - HIV	End-to-end cycle time for HIV/AIDS commodities decreased this quarter, to 237 days, below the target of 250 days. Dwell-adjusted cycle time also decreased to 233 days, falling below the target. Purchase orders, which accounts for more than 95 percent of all orders, had an average cycle time of 240 days (235 dwell-adjusted). Laboratory items, which account for more than two-thirds of HIV/AIDS deliveries, had an average cycle time of 229 days, with 21 line items having holds applied. Out of all 850 line items for HIV/AIDS products, 76 had holds applied to them.
TO2 - Malaria	End-to-end cycle time improved for malaria commodities, with a decrease in cycle time to 311 days. Dwell-adjusted cycle time also decreased this quarter to 285 days. There were decreases in several segments, including Clarify, Sourcing and Planning, and Manufacture, however there was an increase in the Deliver segment. This quarter the proportion of malaria products increased from half to two-thirds of all commodities. The Deliver segment increased from an average of 46 days of last quarter to 64 in this quarter. 31 percent of items had holds placed this quarter, as opposed to 48 percent in the preceding quarter. ACTs, which account for more than a third of the delivered items, had an average cycle time of 297 days, with a dwell-adjusted time of 259 days.
TO3 - FP/RH	End-to-end cycle times for family planning products increased this quarter. For warehouse fulfillments, it increased to 304 days and 287 days for standard and dwell-adjusted cycle times respectively. Cycle time for direct drop fulfillments increased to an average of 360 days, with the dwell-adjusted cycle time also increasing to 355. DRC accounted for the highest number of orders under both warehouse and direct drop fulfillment. Other countries such as Ghana and Mozambique also had a noticeably longer cycle time of 424 and 382 days respectively. Longer cycle times in Ghana was mostly accounted for by funding delays. Some orders in Ghana had a funding delay of approximately 2 months as they were awaiting a loan. Other delays in Mozambique are due to quality assurance issues. Injectable contraceptives, which accounted for the highest number of line items this quarter, had a cycle time of 350 days (320 days with dwell-adjusted). Most of the injectables orders were for DRC, which typically has longer standard lead times. There were additional custom clearance delays and in-country fuel shortages, which added 45 days to the deliveries.
TO4 - MNCH	Cycle time for maternal and child health commodities decreased to 222 days this quarter, both standard and dwell-adjusted. There was only line item this quarter, for Zambia. There was a decrease in almost all segments except the Deliver segment which increased to an average of 73 days.

### Data notes

Data on overall cycle start and end dates are complete for all line items delivered this quarter. However, internal milestone data may not be 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, especially in earlier reporting periods.

Overall cycle time is defined as the number of days between when a customer order is submitted to when the shipment is actually delivered to the customer, inclusive of the start/end days and all holds or other dwell times. Dwell-adjusted cycle time is defined as the overall cycle time with all days of measurable dwell time deducted. Dwell is measured using system timestamps for the start and end for a set of acceptable holds, as defined by the GHSC-PSM hold policy.

Quarterly indicator targets are set for overall and dwell-adjusted cycle times. For all task orders except TO2, the overall and dwell-adjusted targets are the same. Targets are not set for individual segments for any task order.

# Cycle Time Performance

Current Reporting Period

2023-Q2

## A3. Average overall cycle time by product group, fulfillment channel, and transportation mode (TO1, TO2, and TO3)

Fulfillment Channel Task Order	Direct Drop Fulfillment				Warehouse Fulfillment			Total
	Air	Land	Multiple	Sea	Air	Land	Sea	
<b>TO1 - COVID19</b>	<b>241</b>			<b>298</b>				<b>287</b>
COVID19	241			298				287
<b>TO1 - HIV</b>	<b>233</b>	<b>239</b>		<b>273</b>	<b>183</b>	<b>135</b>	<b>163</b>	<b>237</b>
Adult ARV	272			211	161	135	156	216
Condoms	182			311	220		169	280
Laboratory	228	231		184				228
Other Non-Pharma	320	309		246				312
Other Pharma	258	596		480				345
Other RTK	189							189
Pediatric ARV	241	263		242	192		167	234
TB HIV	164			165	190			171
VMMC	209			202				206
<b>TO2 - Malaria</b>	<b>294</b>	<b>334</b>	<b>476</b>	<b>317</b>			<b>118</b>	<b>311</b>
ACTs	181	178		326			118	290
Laboratory	426	48						406
LLINs		562	476	358				395
mRDTs	186			267				262
Other Non-Pharma	211							211
Other Pharma	260							260
Severe Malaria Meds	193			288				246
SMC				249				249
SP	246			420				350
<b>TO3 - FP/RH</b>	<b>303</b>	<b>274</b>		<b>376</b>	<b>227</b>		<b>358</b>	<b>335</b>
Combined Oral Contraceptives				394			343	391
Copper-Bearing Intrauterine Devices					208			208
Emergency Oral Contraceptives	459			365				388
Implantable Contraceptives	263			436	128		339	298
Injectable Contraceptives	113	274		340	451		376	350
Progestin Only Pills					137		381	284

## A3. Average overall cycle time by product group, fulfillment channel, and transportation mode (TO4)

Fulfillment Channel	Direct Drop Fulfillment	Total
Product Category	Sea	
Other Pharma	222	222
<b>Total</b>	<b>222</b>	<b>222</b>

### Data notes

Data on overall cycle start and end dates are complete for all line items delivered this quarter. However, internal milestone data may not be 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, especially in earlier reporting periods.

Overall cycle time is defined as the number of days between when a customer order is submitted to when the shipment is actually delivered to the customer, inclusive of the start/end days and all holds or other dwell times. Dwell-adjusted cycle time is defined as the overall cycle time with all days of measurable dwell time deducted. Dwell is measured using system timestamps for the start and end for a set of acceptable holds, as defined by the GHSC-PSM hold status policy.

Quarterly indicator targets are set for overall and dwell-adjusted cycle times. For all task orders except TO2, the overall and dwell-adjusted targets are the same. Targets are not set for individual segments for any task order.

## Average cycle times by process segment

Fulfillment channel	Clarify and Source	USAID Approval	Process PO/DO	Manufacture/Prepare and Pick Up Order	Manufacture	Pick Up	Deliver
<b>Direct drop fulfillment</b>	<b>65</b>	<b>4</b>	<b>55</b>		<b>86</b>	<b>43</b>	<b>42</b>
TO1 - COVID19	33	1	30		59	39	83
TO1 - HIV	61	3	65		90	37	25
TO2 - Malaria		7	21		69	58	64
TO3 - FP/RH		4	26		127	40	93
TO4 - MNCH	41	0	14		76	17	73
<b>Warehouse fulfillment</b>	<b>61</b>	<b>5</b>	<b>67</b>	<b>53</b>	<b>8</b>	<b>46</b>	<b>58</b>
TO1 - HIV	39	5	53	60	8	52	24
TO2 - Malaria		10	1	26	12	14	52
TO3 - FP/RH		4	82	48	8	40	89
<b>Total</b>	<b>65</b>	<b>4</b>	<b>56</b>	<b>99</b>			<b>43</b>

# Quality Assurance Performance (TO2 only)

Current Reporting Period

2023-Q2

## A2. QA processes completed within required lead times

Task Order	Total # of QA processes completed	% QA Processes On Time	A2 Target
<b>TO2 - Malaria</b>	<b>86</b>	<b>85%</b>	<b>85%</b>
ACTs	28	93%	85%
LLINs	9	100%	85%
mRDTs	18	100%	85%
Other Pharma	0		85%
Severe Malaria Meds	19	68%	85%
SMC	7	43%	85%
SP	5	80%	85%

## A13. Out-of-specification percentage

Task Order	Total # of batches tested	Out-of-specification percentage	A13 Target
<b>TO2 - Malaria</b>	<b>307</b>	<b>0.3%</b>	<b>1%</b>
ACTs	102	0.0%	1%
LLINs	39	0.0%	1%
mRDTs	52	1.9%	1%
Other Pharma	1	0.0%	1%
Severe Malaria Meds	61	0.0%	1%
SMC	47	0.0%	1%
SP	5	0.0%	1%

### Data notes

All QA activities for TO2 are conducted by GHSC-PSM. All QA activities for TO1, TO3, and TO4 are managed by the USAID GHSC-QA contract. GHSC-QA may be contacted for data related to these TOs.

Exceptional procedures outside of routine QA testing and clearance are excluded from indicator A2. This includes consignments requiring QA investigations, method transfers, non-PMI procurements, post-shipment quality control, and LLIN shipments requiring witnessing of loading and/or sealing of goods.

Quarterly indicator targets are effective beginning FY2018 Q4.

## A15. QA investigation report submission (Q2 & Q4 only)

Task Order	# of reports due	Report submissions	A15 Target
<b>TO2 - Malaria</b>	<b>3</b>	<b>100%</b>	<b>90%</b>
ACTs	2	100%	90%
LLINs	0		90%
mRDTs	0		90%
Other Non-Pharma			
Other Pharma	1	100%	90%
Severe Malaria Meds	0		90%
SMC	0		90%
SP	0		90%

### Ref Analysis

- A02 A total of 85 percent of QA/QC processes were completed within the required lead times. Compared to the last quarters, there was a decline in the on-time completion rate, but it still met the target of 85 percent for this quarter. There were two product groups, SP and severe malaria medicines, with performance below the target. This was largely due to overload of lab capacities due to closure for the holiday season. A lab audit concluded in January 2023 also impacted the timely testing of SMC and rectal artesunate (RAS) products. There was also an increased volume for testing as compared to the last quarter. These results exclude one QA process which was impacted by COVID-19. With these COVID-impacted transactions included, the result was 84 percent.
- A13 Out-of-specification findings rose this quarter to 0.3 percent of batches tested, below the target of 1 percent. Only one batch of product was rejected due to not-assured quality in one category (mRDTs). The rejected RDT batch is slated to be replaced by the supplier.
- A14b The vendor scorecard rating for lab services declined this quarter to 88 percent. The decline was most noticeable in reliability score, which reduced to 81 percent from the 92 percent of last quarter. There was increased volume of testing in this quarter, and the holiday season reduced the turn-around time. The peak volume was observed in SPAQ samples which is a seasonal product and there was closure of labs due to the holiday season which took place at the time of the Chinese New Year. Other scores were similar to last quarter with responsiveness scoring 95 percent, completeness and service scoring 96 percent and 84 percent respectively, and cost scoring 100 percent. Apart from reliability, there were marginal decreases recorded in responsiveness and completeness this quarter.
- A15 Three reports were due for issuance and all three were submitted on time.

# Warehouse Performance and Product Losses

Current Reporting Period

2023-Q2

## C7a and C7b. Product loss due to expiry, theft, damage and other causes while in GHSC-PSM control

Task Order	Country	Type of Loss	Product Group	Loss Value	Loss Denominator	% Loss
TO1 - HIV	Nigeria	Damage	ARVs	\$7,569	\$48,101,169	0.02%
TO1 - HIV	Kenya	Damage	Essential medicines	\$1,459	\$5,992,267	0.02%
TO3 - FP/RH	Kenya	Damage	Implantable Contraceptives	\$1,870	\$1,360,000	0.14%
TO1 - HIV	Kenya	Damage	Laboratory Consumables	\$12,649	\$12,456,526	0.10%
TO1 - HIV	The Philippines	Damage	Laboratory Reagents	\$17,880	\$342,700	5.22%
TO2 - Malaria	DRC	Damage	LLIN	\$14,865	\$2,490,334	0.60%
TO3 - FP/RH	RDC	Damage	Oral contraceptives	\$1,310	\$3,123,756	0.04%
TO2 - Malaria	DRC	Missing product	LLIN	\$7,626	\$2,490,334	0.31%
TO2 - Malaria	Mali	Missing product	LLIN	\$3,278	\$3,397,011	0.10%
TO4 - MNCH	DRC	Temperature Excursion	Essential medicines	\$42,909	\$58,191	73.74%

## A8. Shelf life remaining

Task Order	Inventory Balance	% Shelf Life Remaining	Shelf life target
TO1 - HIV	\$5,325,935	83%	70%
TO2 - Malaria	\$177,516	78%	70%
TO3 - FP/RH	\$4,032,466	85%	80%
<b>Total</b>	<b>\$9,535,917</b>	<b>82%</b>	

### Data notes

Average inventory balance (A4 and C7a denominator) is calculated using the ending balance at the close of each month.

Expired inventory is excluded from shelf life calculations (A8). It is reported under product loss.

Quarterly indicator targets are effective beginning FY2018 Q4. Per the project M&E plan, no targets are required for product loss indicators (C7a and C7b).

Task Order 1 inventory includes all condoms. GHSC-PSM does not hold any inventory for Task Order 4.

### Ref Task Order Analysis

A08	TO1 - HIV	Average shelf life remaining for HIV products was 83 percent in FY23 Q2, remaining consistent with the 84 percent shelf life remaining in the last quarter. All but two products had shelf life remaining of less than 80 percent, and both products had little impact on the overall score because they were small portions of the overall value. TLD had a shelf life remaining of 81 percent. The project made a significant shift this fiscal year regarding shipment and stocking strategies for TLD, shifting most procurement to VMS and direct drop shipments, with a reduced TLD inventory at the regional distribution centers, primarily in case of emergency rapid response.
A08	TO2 - Malaria	Average shelf life remaining for the AL stockpile was at 78 percent in FY23 Q2. The products exceeded a shelf life above the 70 percent target. The project is expecting a replenishment order for the RDCs in the latter quarters of FY23.
A08	TO3 - FP/RH	The average weighted shelf life remaining for family products has decreased slightly to 85 percent in FY23 Q2, with all products exceeding the 80 percent target. The main product stored in the RDC are two-rod implants, which had a shelf life remaining score of 86 percent.
C07a	TO3 - FP/RH	There were no expiries of family planning products in GHSC-PSM's RDC inventory this quarter.
C07a	TO1 - HIV	There were no expiries of HIV/AIDS products in GHSC-PSM's RDC inventory this quarter.
C07a	TO2 - Malaria	There were no expiries of malaria products in GHSC-PSM's RDC inventory this quarter.
C07b	Crosscutting	Confirmed loss incidents within the global supply chain typically include product damage that occurred in transit to the destination. Most of these losses are typical for a supply chain of this size and represented a minimal proportion of the total value of product delivered in the quarters the losses took place. There were three losses in transit within the DRC: 1) \$14,000 worth of LLINs ruined by spilled gasoline; 2) \$7,000 of missing LLINs reported at the destination; and 3) \$42,000 worth of oxytocin due to temperature excursion, being kept in cold storage but at the incorrect temperature. One incident of loss occurred during transit in the Philippines, where \$17,000 worth of lab reagents were confirmed damaged when received at the warehouse. There was also one loss this quarter in storage at the regional distribution center (RDC), where two pallets fell from the fourth-level rack, damaging \$1,000 of oral contraceptives.

# Procurement Performance

Current Reporting Period

2023-Q2

## A10. Framework contract percentage

Task Order	Procurement total	Framework contract percentage	Framework contract target
TO1 - COVID19	\$451,876	100%	90%
TO1 - HIV	\$95,633,604	91%	90%
TO2 - Malaria	\$54,029,621	100%	95%
TO3 - FP/RH	\$12,322,774	100%	95%
TO4 - MNCH	\$64,315	100%	85%
<b>Total</b>	<b>\$162,502,190</b>	<b>95%</b>	<b>NA</b>

## A10. Product-level detail

Task Order	Framework contract percentage	Procurement total
<b>TO1 - COVID19</b>	<b>100%</b>	<b>\$451,876</b>
COVID19	100%	\$451,876
<b>TO1 - HIV</b>	<b>91%</b>	<b>\$95,633,604</b>
Adult ARV	100%	\$27,686,541
Condoms	100%	\$4,893,076
Food and WASH	0%	\$34,500
Laboratory	86%	\$55,010,596
Other Non-Pharma	91%	\$864,944
Other Pharma	100%	\$1,197,289
Other RTK	9%	\$1,349,117
Pediatric ARV	100%	\$1,733,863
TB HIV	100%	\$1,161,450
Vehicles and Other Equipment	100%	\$898,900
VMMC	100%	\$803,329
<b>TO2 - Malaria</b>	<b>100%</b>	<b>\$54,029,621</b>
ACTs	100%	\$3,283,313
Laboratory	96%	\$605,109
LLINs	100%	\$35,389,758
mRDTs	100%	\$10,935,918
Other Non-Pharma	100%	\$106,825
Other Pharma	100%	\$15,000
Other RTK	100%	\$7,194
Severe Malaria Meds	100%	\$2,955,602
SP	100%	\$730,903

## A10. Product-level detail

Task Order	Framework contract percentage	Procurement total
<b>TO3 - FP/RH</b>	<b>100%</b>	<b>\$12,322,774</b>
Combined Oral Contraceptives	100%	\$2,449,721
Copper-Bearing Intrauterine Devices	0%	\$36,149
Emergency Oral Contraceptives	100%	\$14,112
Implantable Contraceptives	100%	\$5,117,762
Injectable Contraceptives	100%	\$3,649,370
Laboratory	100%	\$138,525
Other Non-Pharma	100%	\$313,622
Progestin Only Pills	100%	\$600,048
Standard Days Method	100%	\$3,465
<b>TO4 - MNCH</b>	<b>100%</b>	<b>\$64,315</b>
Other Non-Pharma	100%	\$35,910
Other Pharma	100%	\$28,404

## Task Order Analysis

TO1 - HIV	Use of framework agreements for HIV/AIDS products decreased slightly to 91 percent, still above the framework contract target of 90 percent. The decrease emanated from the usage of non-framework contracts under commodity groups of laboratory, other-non pharma, and other RTK. Product groups like adult ARVs, which have all their procurement through framework contracts, reduced in procurement volume. Another factor for the decrease was the procurement of other RTK commodities which increased in value along with a noticeable increase in non-framework contract usage. Framework contracts were utilized in laboratory procurement at the same level as last quarter, around 86 percent, and their usage increased for other non-pharma commodities. Condoms, adult ARVs, other pharma, pediatric ARVs, TB HIV and VMMC products all continued to have framework contract percentages of 100 percent.
TO2 - Malaria	Malaria procurements remained above the target, at 100 percent utilization of framework contracts this quarter.
TO3 - FP/RH	Family planning continues to procure all items under framework contracts, per the sourcing strategy for these commodities.
TO4 - MNCH	There were only two orders for maternal, child and newborn health commodities released this quarter: one was for other pharma and another one was other non-pharma, and both were for DRC. All orders were framework contract orders, accounting for around \$64,315 combined.

## Data notes

Procurement totals are equal to the total value of all line items procured from vendors each period. This includes Purchase Orders and warehouse Replenishment Orders. Distribution Orders released from the RDCs to countries are not counted, as these quantities are already included when the items are first purchased as Replenishment Orders.

Framework contracts include indefinite delivery, indefinite quantity contracts (IDIQs), blanket purchase agreements (BPAs), and basic ordering agreements (BOAs). Non-framework contracts include firm fixed price and fixed unit price subcontracts, simplified purchase agreements, and other types of one-off purchase orders.

Commodities are considered "purchased" if the "PO Released for Fulfillment Date" in ARTMIS falls within the reporting period.



# Registration Waivers

## A7. Temporary registration waiver percentage

Task Order	Temporary registration waiver percentage	Total # of line items delivered
<b>TO2 - Malaria</b>	<b>10.8%</b>	<b>158</b>
ACTs	6.3%	63
LLINs	0.0%	25
Laboratory	0.0%	19
Severe Malaria Meds	11.1%	18
mRDTs	31.3%	16
SMC	25.0%	8
SP	60.0%	5
Other Non-Pharma	0.0%	2
Other Pharma	50.0%	2
<b>TO3 - FP/RH</b>	<b>4.0%</b>	<b>75</b>
Injectable Contraceptives	4.3%	23
Implantable Contraceptives	0.0%	19
Combined Oral Contraceptives	0.0%	15
Emergency Oral Contraceptives	0.0%	8
Copper-Bearing Intrauterine Devices	0.0%	5
Progestin Only Pills	40.0%	5
<b>Total</b>	<b>8.6%</b>	<b>233</b>

### Task Order Analysis

TO2 - Malaria	The project used registration waivers for 11 percent of line items delivered this quarter. The orders were spread across commodity groups, including mRDTs, ACTs and SP. The countries which required these waivers included Angola, Benin, Cameroon and Burundi.
TO3 - FP/RH	The project used registration waivers for 4 percent of line items delivered this quarter, representing three line items. One order was for Haiti for injectable contraceptives, where the registration is in process. The other two orders were for progestin-only pills, both for Mozambique. The project has routinely used waivers for these items in Mozambique.

Current Reporting Period

# Supply Plan Submissions

2023-Q2



## B6. Quarterly supply plan submission rate to GHSC-PSM HQ

Product Group	# of supply plans required	Supply plan submission rate	Submission target
ARVs	21	100%	95%
Condoms	21	100%	90%
FP commodities	22	100%	95%
Lab (HIV diagnostics)	15	100%	93%
Malaria commodities	28	96%	93%
RTKs	21	100%	95%
TPT	15	93%	93%
VMMC	5	100%	80%
<b>Total</b>	<b>148</b>		

### Task Order Analysis

TO1 - HIV	Submission rates for HIV supply plans was strong this quarter with 100 percent submission in ARV, RTKs, VMMC and Lab . TPTs had a submission rate of 93 percent, Namibia did not submit the supply plan for TPTs.
TO2 - Malaria	Malaria supply plans submissions increased to 100 percent this quarter.
TO3 - FP/RH	Supply plan submissions for family planning commodities and condoms was strong this quarter, with 100 percent of supply plans submitted for family planning commodities and condoms.

# Supply Plan and Forecast Performance

Current Reporting Period

2023-Q2

## A6a. Supply plan error - HIV Products

Product Category	Supply plan/ forecast error	Supply plan/ forecast bias	4- quarter error	Annual APE Target	4- quarter bias
Adult ARV	40%	-40%	13%	22%	-13%
Condoms	12%	-12%	1%	30%	1%
Laboratory	29%	29%	36%	25%	36%
Pediatric ARV	1%	1%	12%	25%	12%

## A6a. Supply plan error - Malaria products

Product Category	Supply plan/ forecast error	Supply plan/ forecast bias	4- quarter error	Annual APE Target	4- quarter bias
ACTs	22%	22%	51%	35%	51%
mRDTs	31%	31%	24%	25%	24%

## A6b. Forecast error - Family Planning products

Product Category	Supply plan/ forecast error	Supply plan/ forecast bias	4- quarter error	Annual APE Target	4- quarter bias
Combined Oral Contraceptives	75%	-75%	1%	25%	1%
Copper-bearing Intrauterine Devices	0%	0%	9%	30%	-9%
Implantable Contraceptives	1%	1%	5%	25%	-5%
Injectable Contraceptives	15%	-15%	5%	22%	-5%
Progestin Only Pills	14%	14%	3%	25%	-3%

### Task Order

### Analysis

TO1 - HIV	Forecast error for condoms decreased to 12 percent this quarter due to a similar reason as last quarter. There was higher forecasting, where the demand remained unrealized. This is the third quarter of slight under-ordering, which has balanced out significant over-ordering in Q3 of last fiscal year, pushing the four-quarter rolling figure to 0.6 percent, well below the 30 percent target.
TO1 - HIV	Supply plan error for adult ARVs increased to 39 percent this quarter, up from 15 percent last quarter. The four-quarter metric for adult ARVs also widened to 13 percent, an increase from last quarter's 6 percent. The variance was principally due to overplanning and under ordering; there was an order from Zambia which planned for 1.5 million units, but the actual order was only 900,000 units. For pediatric ARVs, the supply plan decreased even further to 1.4 percent. The four-quarter metric remained low at 12 percent; there was a slight increase from last quarter because of lower quantities forecasted and ordered this quarter as compared to the last one.
TO1 - HIV	Supply plan error for lab commodities narrowed this quarter, from 52 percent to 29 percent in Q2. Similar to the last quarter, the orders for all lab products were higher than expected in the supply plans. Nigeria planned 0 units of molecular instruments items and ordered 16, 174 units. For VL, there was an unexpected order from Nigeria of 12,319 units which was not included in the supply plan. There was a similar case in Uganda, where 1,590 units of CD4 was ordered while the plan only covered 357 units. The rolling four-quarter metric increased to 36 percent this quarter, higher than the goal of 25 percent for this quarter. For VL/EID products, the implementation of service level agreements for Wave 2 countries is still in its early stages and is slated to have an impact on forecast error in the latter quarters of 2023.
TO2 - Malaria	Supply plan error for ACTs decreased to 32 percent this quarter, with a reduced rolling four quarter metric of 51 percent. The reduction in ACT error was brought about by the decreased supply plan error for AL, which was at 32 percent this quarter. However, ASAQ products contributed significantly to the ACT supply plan error. Orders this quarter exceeded planned quantities by 13 million units, pushing the supply plan error for ASAQ to 94 percent this quarter. Last quarter, the figures indicated a stabilization DRC had not planned for any ASAQ orders in their supply plan but ordered 13 million units this quarter. There was no forecast for ASAQ in the supply plans for Madagascar but 1 million units were ordered in this quarter. The supply plan error for mRDTs reduced to 31 percent this quarter, with a narrowing of the four-quarter metric to 24 percent. A total of 12 million unplanned units were ordered from countries like Anaola. DRC. Senegal and Sierra Leone.
TO3 - FP/RH	Forecast errors for implants further decreased from the previous quarter's 3 percent to 1.3 percent in Q2, which also decreased the rolling four quarter metric to 5 percent. The forecast error for injectable contraceptives decreased from 22 percent to 15 percent, and the four-quarter rolling metric decreased to 5 percent, falling well within the target of 22 percent. Combined oral contraceptives had a significant increase in quarterly forecast error from 4 percent to 75 percent. This was mainly due to an order being canceled in Angola and a delayed order for Burkina Faso. However, the under-ordering in this quarter was balanced out by over-ordering in previous periods, which led to a narrowing of the four-quarter rolling metric to 0.8 percent. Forecast error narrowed for progestin-only pills, from 44 percent to 14 percent, and the rolling four quarter metric stood at 3.4 percent. Lastly, there was zero forecast error for copper-bearing IUDs, which led to narrowing of the four-quarter rolling metric to 9 percent.

# Total Landed Cost

## A5. Total Landed Costs

Task Order	Total Landed Cost (Freight and Logistics)	TLC Target	Delivery Total	Total Landed Cost (Freight, Logistics, and HQ Operations)
TO1 - HIV	7.6%	10%	\$480,766,849	13.6%
TO2 - Malaria	24.0%	20%	\$187,490,757	27.5%
TO3 - FP/RH	10.8%	22%	\$51,633,600	18.2%
TO4 - MNCH	23.0%	14%	\$1,261,363	71.5%
<b>Total</b>	<b>12.1%</b>	<b>15%</b>	<b>\$721,152,568</b>	<b>17.6%</b>

## A5. Cost Breakdown

Cost Type	TO1 - HIV	TO2 - Malaria	TO3 - FP/RH	TO4 - MNCH	Total
<b>Freight and Logistics</b>	<b>\$36,301,161</b>	<b>\$44,966,481</b>	<b>\$5,589,290</b>	<b>\$290,193</b>	<b>\$87,147,125</b>
Country-specific Logistics	\$763,427	\$170,632	(\$165,407)	\$5,587	<b>\$774,239</b>
Demurrage	\$427,016	\$473,839	\$164,655	\$5,707	<b>\$1,071,217</b>
Drop Ship Freight	\$25,721,786	\$42,780,170	\$2,745,461	\$264,228	<b>\$71,511,645</b>
Inbound Freight	\$1,263,583	\$64,041	\$465,717	\$0	<b>\$1,793,341</b>
Insurance	\$2,226,042	\$429,338	\$40,298	\$14,614	<b>\$2,710,292</b>
Loss	\$17,218	\$0	\$0	\$0	<b>\$17,218</b>
Outbound Freight	\$4,742,559	\$631,920	\$1,839,666	\$0	<b>\$7,214,145</b>
Security	\$137,825	\$327,446	\$350	\$57	<b>\$465,678</b>
Warehousing	\$1,001,705	\$89,095	\$498,550	\$0	<b>\$1,589,350</b>
<b>HQ Operations</b>	<b>\$28,961,268</b>	<b>\$6,613,130</b>	<b>\$3,826,053</b>	<b>\$611,055</b>	<b>\$40,011,506</b>
Forecasting and Supply Planning	\$1,470,774	\$721,514	\$530,080	\$4,855	<b>\$2,727,223</b>
GS1	\$1,076,607	\$473,069	\$17,565	\$35,348	<b>\$1,602,589</b>
MIS	\$3,158,697	\$570,345	\$252,385	\$78,953	<b>\$4,060,380</b>
Monitoring and Evaluation	\$5,038,912	\$1,272,674	\$662,552	\$139,556	<b>\$7,113,694</b>
Procurement	\$16,555,523	\$3,331,511	\$2,194,665	\$321,810	<b>\$22,403,509</b>
Warehousing and Distribution	\$1,660,755	\$244,017	\$168,806	\$30,533	<b>\$2,104,111</b>
<b>Total</b>	<b>\$65,262,429</b>	<b>\$51,579,611</b>	<b>\$9,415,343</b>	<b>\$901,248</b>	<b>\$127,158,631</b>

### Task Order Analysis

**TO1 - HIV** GHSC-PSM's total landed cost indicator is equal to the sum of all costs associated with commodity delivery, divided by the total value of commodities delivered. It is reported semiannually, for a rolling 12-month period, and provides a high-level sense of the project's relative operations and direct logistics costs but may lack precision for several reasons: 1) Commodity cost savings may cause the denominator to decrease, even if volume stays the same. This may have the effect of increasing total landed cost as a percentage, even if costs in the numerator remain the same. 2) Logistics costs for items shipped under C and D Incoterms are built into the commodity cost charged by the supplier. They cannot be separated out and assigned to the numerator. 3) Costs in the numerator represent invoices paid, per the project monthly financial statement, while commodity costs are based on items delivered. Numerator costs may therefore be delayed compared to delivery activity represented by the denominator. Additionally, please note that targets were not set for FY2021 due to freight market volatility.

This period, freight and logistics costs as a percentage of dollar value delivered for HIV and COVID-19 commodities remained consistent, at 7.6 percent. The value of commodities delivered decreased in comparison to the previous quarter, and the freight and logistics costs also decreased. The cost for HQ operations this quarter increased, and when factored in, the total landed cost has increase slightly to 13.6 percent. Headquarters expenditures have most notably increased in procurement, and slightly in warehousing and distribution, but decreased in all other categories.

**TO2 - Malaria** GHSC-PSM's total landed cost indicator is equal to the sum of all costs associated with commodity delivery, divided by the total value of commodities delivered. It is reported semiannually, for a rolling 12-month period, and provides a high-level sense of the project's relative operations and direct logistics costs but may lack precision for several reasons: 1) Commodity cost savings may cause the denominator to decrease, even if volume stays the same. This may have the effect of increasing total landed cost as a percentage, even if costs in the numerator remain the same. 2) Logistics costs for items shipped under C and D Incoterms are built into the commodity cost charged by the supplier. They cannot be separated out and assigned to the numerator. 3) Costs in the numerator represent invoices paid, per the project monthly financial statement, while commodity costs are based on items delivered. Numerator costs may therefore be delayed compared to delivery activity represented by the denominator. Additionally, please note that targets were not set for FY2021 due to freight market volatility.

Data for the current period shows total landed costs rising slightly, to 24 percent. Expenditures in drop ship freight increased from the previous period. Total landed cost including headquarters operations expenditures also showed an increase, rising slightly to 27.5 percent. Decreased spending on Procurement was offset by slight increases in spending on Monitoring and Evaluation and GS1. Due to the decreased delivery total and increased freight and logistics costs this quarter, the slight increase in total landed cost is expected.

### Data notes

GHSC-PSM's total landed cost indicator is equal to the sum of all costs associated with commodity delivery, divided by the total value of commodities delivered. It is reported semiannually, for a rolling 12-month period. It provides a high-level sense of the project's relative operations and direct logistics costs, but it may lack precision for several reasons: 1) Commodity cost savings may cause the denominator to decrease, even if volume stays the same. This may have the effect of increasing total landed cost as percentage, even if costs in the numerator remain the same. 2) Logistics costs for items shipped under C and D Incoterms are built into the commodity cost charged by the supplier. They cannot be separated out and assigned to the numerator. 3) Costs in the numerator represent invoices paid, per the project monthly financial statement, while commodity costs are based on items delivered. Numerator costs may therefore be delayed compared to delivery activity represented by the denominator.

# Total Landed Cost

## A5. Total Landed Costs

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Country-specific Logistics	\$763,427	\$170,632	(\$165,407)	\$5,587	\$774,239
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Insurance	\$2,226,042	\$429,338	\$40,298	\$14,614	\$2,710,292
Loss	\$17,218	\$0	\$0	\$0	\$17,218
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Security	\$137,825	\$327,446	\$350	\$57	\$465,678
Warehousing	\$1,001,705	\$89,095	\$498,550	\$0	\$1,589,350
<b>HQ Operations</b>	<b>\$28,961,268</b>	<b>\$6,613,130</b>	<b>\$3,826,053</b>	<b>\$611,055</b>	<b>\$40,011,506</b>
Forecasting and Supply Planning	\$1,470,774	\$721,514	\$530,080	\$4,855	\$2,727,223
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<b>Total</b>	<b>\$65,262,429</b>	<b>\$51,579,611</b>	<b>\$9,415,343</b>	<b>\$901,248</b>	<b>\$127,158,631</b>

### Task Order Analysis

TO3 - FP/RH GHSC-PSM's total landed cost indicator is equal to the sum of all costs associated with commodity delivery, divided by the total value of commodities delivered. It is reported semiannually, for a rolling 12-month period, and provides a high-level sense of the project's relative operations and direct logistics costs but may lack precision for several reasons: 1) Commodity cost savings may cause the denominator to decrease, even if volume stays the same. This may have the effect of increasing total landed cost as a percentage, even if costs in the numerator remain the same. 2) Logistics costs for items shipped under C and D Incoterms are built into the commodity cost charged by the supplier. They cannot be separated out and assigned to the numerator. 3) Costs in the numerator represent invoices paid, per the project monthly financial statement, while commodity costs are based on items delivered. Numerator costs may therefore be delayed compared to delivery activity represented by the denominator. Additionally, please note that targets were not set for FY2021 due to freight market volatility.

This period, freight and logistics costs as a percentage of family planning commodities delivered remained relatively consistent at 10.8 percent. This was primarily driven by an increase in the delivery total value matched by an increase in almost all freight and logistics cost categories. When headquarters supply chain operations costs are factored in, the total landed cost result is 18.2 percent, a decrease from last period's 19.7 percent. There were no significant increases in expenditures of headquarters operations this period, but there was a significant decrease in MIS expenditures.

TO4 - MNCH GHSC-PSM's total landed cost indicator is equal to the sum of all costs associated with commodity delivery, divided by the total value of commodities delivered. It is reported semiannually, for a rolling 12-month period, and provides a high-level sense of the project's relative operations and direct logistics costs but may lack precision for several reasons: 1) Commodity cost savings may cause the denominator to decrease, even if volume stays the same. This may have the effect of increasing total landed cost as a percentage, even if costs in the numerator remain the same. 2) Logistics costs for items shipped under C and D Incoterms are built into the commodity cost charged by the supplier. They cannot be separated out and assigned to the numerator. 3) Costs in the numerator represent invoices paid, per the project monthly financial statement, while commodity costs are based on items delivered. Numerator costs may therefore be delayed compared to delivery activity represented by the denominator. Additionally, please note that targets were not set for FY2021 due to freight market volatility.

Data for the current period shows that freight and logistics costs as a percentage of MNCH commodities delivered increased to 23 percent. Expenditures in freight and logistics categories have decreased, specifically in the drop ship freight category, but not as rapidly as the decrease in the delivery value total, which explains the slight increase in the TLC. Total landed cost with headquarters operations expenses included also increased this period, to 71.5 percent, even though there was a decrease in HQ operations costs, because the delivery total value decreased so dramatically that the cost per product is still higher than previous periods. Headquarters expenditures did increase this period, most notably in the Procurement category.

### Data notes

GHSC-PSM's total landed cost indicator is equal to the sum of all costs associated with commodity delivery, divided by the total value of commodities delivered. It is reported semiannually, for a rolling 12-month period. It provides a high-level sense of the project's relative operations and direct logistics costs, but it may lack precision for several reasons: 1) Commodity cost savings may cause the denominator to decrease, even if volume stays the same. This may have the effect of increasing total landed cost as percentage, even if costs in the numerator remain the same. 2) Logistics costs for items shipped under C and D Incoterms are built into the commodity cost charged by the supplier. They cannot be separated out and assigned to the numerator. 3) Costs in the numerator represent invoices paid, per the project monthly financial statement, while commodity costs are based on items delivered. Numerator costs may therefore be delayed compared to delivery activity represented by the denominator.

# Vendor Performance

Current Reporting Period

2023-Q2

## A14a-c. Average vendor rating score

Vendor Type	Average vendor rating
Commodity Supplier	60%
Freight Forwarder	86%
QA Lab	88%

## 14b. QA Lab Vendor Scorecard Components, Weighting, and Scores

Component Name	Indicator Name	Indicator Score	Indicator Weight (Overall)	Overall Weighted Score
1 - Reliability (Timeliness of Service)	Does the lab provide on-time provision of completed test reports?	81%	48%	38%
2 - Responsiveness	Does the lab provide prompt response after receipt of GHSC-PSM request for testing	95%	15%	14%
3 - Completeness of Documentation	Frequency of modification to Certificates of Analysis (CoA)	96%	18%	17%
4 - Invoice Accuracy	Submitted invoices for routing testing adhere to set IDIQ pricing	100%	10%	10%
5 - Service	Adherence to other terms and conditions, not related to reliability, responsiveness, completeness, and cost (Qualitative)	84%	10%	8%
<b>Total</b>			<b>100%</b>	<b>88%</b>

### Analysis

This quarter's average freight forwarder vendor rating shows a result of 86 percent for average 3PL performance. Performance within the EDI status performance saw an increase this quarter in both the timeliness and completeness categories, while ETA Delivery Accuracy/Reliability, Customer Service, On-time Performance, Rate of Deliveries without NCRs, and On-time Spot Quote Turnaround saw increased or relatively consistent scores. On-time performance, which is the most heavily weighted category, increased dramatically to 97 percent this quarter from last quarter's 83 percent. Invoicing accuracy, however, saw a decrease in scores, due to rate refresh timeliness issues in the quarter, which will impact invoicing accuracy through part of Q3. This is because February is the month in which the project began soliciting the first round of results for the rate refresh from 3PLs. Because of this, the timeliness of the 3PLs in this metric was lower because their time was split between fulfilling the daily requests and completing the rate refresh. The invoicing accuracy timeliness metric should improve in the second half of FY23 Q3.

The vendor scorecard rating for lab services declined this quarter to 88 percent. The decline was most noticeable in reliability score, which reduced to 81 percent from the 92 percent of last quarter. There was increased volume of testing in this quarter, and the holiday season reduced the turn-around time. The peak volume was observed in SPAQ samples which is a seasonal product and there was closure of labs due to the holiday season which took place at the time of the Chinese New Year. Other scores were similar to last quarter with responsiveness scoring 95 percent, completeness and service scoring 96 percent and 84 percent respectively, and cost scoring 100 percent. Apart from reliability, there were marginal decreases recorded in responsiveness and completeness this quarter.

On-time performance (OTP) for high-risk, high-value suppliers remained at 60 percent this quarter, at the same level as the first quarter of FY2023. Improvements were observed in TO1 and TO3 this quarter. The delays in TO1, TO2 and TO3 were observed in Laboratory, ACTs and Combined Oral Contraceptives commodity groups. There was a large decline in performance in TO4 specifically in the Essential Medicine product. The reason cited for the delay was related to the production capacity issue of the supplier. Since, TO4 deliveries constitute a smaller percentage of total lines the decline in TO4 balanced out the improvement in the other task orders.

### Data notes

Components and indicators for the 3PL scorecard have changed over time. Version 1 of the scorecard was in effect up to FY2018 Q2. Version 2 was in effect from FY2018 Q3 until FY2022 Q4. Version 3 took effect in FY2023 Q1. See the M/E Plan for full details of scorecard changes over time. Per the GHSC-PSM M/E Plan, targets are not required for vendor performance indicators.

# Global Advocacy Engagements

Current Reporting Period

2023-Q2



**HIV/AIDS**

2

Name of Engagement	Description
Supply chain Technical working group - Eswatini	These are quarterly meetings where supply chain issues for Eswatini are discussed among all supply chain stakeholders (MOH, CMS, Programs, USAID, GF, PSM, etc.) and decisions made to improve commodity availability in Eswatini. The meetings were held in Q1 and postponed in Q2.
ARV Vendor Summit	GHSC-PSM participated in the ARV Vendor Summit in South Africa and presented on the evolution of the project's procurement strategy, including the project's D-term strategy, vendor-managed solutions, and regionalization goals. GHSC-PSM facilitated individual meetings with 11 manufacturers focused on production plans and new products under development.

# Global Advocacy Engagements

Current Reporting Period

2023-Q2



Malaria

4

Name of Engagement	Description
RDT Task Force Meeting	GHSC-PSM participates in the RDT Task Force meetings, which as of Q2 were reduced from monthly meetings to quarterly meetings as a result of market stabilization coming out of the initial onset of COVID-19 in 2020, which brought about market instability as some RDT suppliers dropped out of the market to pursue manufacturing of COVID-19 tests. The taskforce explored the state of the RDT market based on a market landscape assessment conducted by UNITAID and looked at the increasing country preference for inverted cups versus pipettes as a blood collection device.
KSM/API Working Group	KSM/API Working Group meetings have formally transitioned to a monthly cadence, but GHSC-PSM participated in multiple, additional out-of-cycle meetings in Q1 of CY 2023, given evolving dynamics particularly in the artemisinin market.
Pharma Task Force Meetings	Pharma Task Force meetings shifted from bi-weekly to monthly meetings in Q1, which GHSC-PSM participates in. Monthly meetings in Q1 and Q2 focused on upstream and downstream supply; price increases on FPP due to price volatility in the vegetal artemisinin market; and a QC out-of-specification investigation on artesunate injectable for a key supplier.
Vector Control Task Force Meeting	The VCTF is a coordination call between key procurers of ITNs and IRS sharing of intel regarding market conditions and logistics challenges, as well as a forum for alignment on key strategic initiatives. As operations somewhat normalized since the pandemic, a TOR was finalized in Q1 as a longer-term structure for the taskforce, which covered the objectives, membership, call structure, and modus operandi of the Vector Control Supply Access Task Force. Updates were provided on monthly calls regarding the status of PBO supply, which in previous quarters faced delays from suppliers, along with monitoring of container availability out of China.

# Global Advocacy Engagements

Current Reporting Period

2023-Q2



## Family Planning and Reproductive Health

6

Name of Engagement	Description
CPG Global Market	GHSC-PSM participates in the CPG Global Market group to prioritize constrained products within available supply; support a healthy FP market and new FP product introduction in alignment with GFPVAN ToUs; and review and discuss market-level demand forecasts produced by the CPG/GFPVAN to align on outputs and methodology.
Global Family Planning Visibility and Analytics Network	<p>GHSC-PSM regularly attends several GFPVAN task forces held by the Reproductive Health Supplies Coalition. These meetings and their objectives are highlighted below.</p> <p>Data Sharing Task Force: Management of VAN TOU; management of VAN data sharing agreements with vendors; updates to donor contracts</p> <p>Steering Committee: Consensus on high-level VAN priorities and roadmap</p> <p>Data Mgmt Task Force: Operational management of data feeds with UNFPA and ARTMIS; master and transactional data management</p> <p>Tech Mgmt Task Force: Overview of integration statuses with donors and with country eLMIS's; overview VAN releases and progress</p> <p>GHSC-PSM User Engagement Meeting: Review of GHSC-PSM use of the VAN, user requests, and ad-hoc issues</p> <p>Country-Specific Integration Meetings: Country-specific sessions held for the duration of establishing a VAN-eLMIS integration in support of premium country membership</p> <p>Analytics Workstream: Review of analytics dashboards and requests to update</p>
Hormonal Intrauterine Device (IUD) Steering Committee and Hormonal IUD Intrauterine Device (IUD) Access Group	GHSC-PSM actively participates in the Hormonal IUD Steering Committee and Hormonal IUD Access Group. Globally, the Hormonal IUD Access Group, a consortium of governments, donors, manufacturers, procurement agencies, researchers, and service delivery groups, supports introduction of the hormonal IUD. The Hormonal IUD Access Group takes a comprehensive approach to facilitating method introduction and scale-up. This includes ensuring availability of affordable, quality-assured products to facilitate sustainable markets and supporting countries that are ready and willing to introduce and scale up the method through a phased approach. In Q1-Q2 GHSC-PSM's engagement focused on efforts to mitigate product leakage.
IAWG Supplies Sub-Working Group	GHSC-PSM participates in the monthly meetings for the Inter-Agency Working Group on Reproductive Health in Crises (IAWG) Supplies Sub-Working Group (SWG). The goal of the working group is to strengthen access to SRH supplies in crisis-affected settings from pre-crisis preparedness, to acute humanitarian response, to protracted response and recovery. During the reporting period, GHSC-PSM participated in discussions on investigating gaps for migrants from Central America traveling to the United States as well as the draft Emergency Supply Pre-Positioning Strategy led by UNFPA.
Systems Strengthening Working Group	GHSC-PSM regularly participates in SSWG meetings held by the Reproductive Health Supplies Coalition. The working group provides a forum for those working in systems strengthening to convene and discuss common issues and challenges. In FY22 Q1, the GHSC-PSM M&E team presented preliminary findings from a research initiative that is analyzing the correlation between national family planning policies and mCPR, using analysis across 63 countries and 12 years of data collected from the Contraceptive Security Indicators survey.



# Global Advocacy Engagements

Current Reporting Period

2023-Q2



## Maternal, Newborn, and Child Health

3

Name of Engagement	Description
Child Health Task Force	GHSC-PSM participated in the launch of the ORS/Zinc Co-Pack Alliance in January 2023. The group brings together organizations and individuals to identify and remove barriers to co-packaging to accelerate uptake of the commodity.
Child Health Task Force	In January 2023, GHSC-PSM presented to the commodities sub-group, in partnership with MTaPS and PQM+, around lessons in uptake of amoxicillin DT and gentamicin injection. The group, hosted by UNICEF and USAID, gathered to define an activity and kick off information gathering that will enable a series of workshops to take place in May about designing evidence-based interventions to increase improvements in access to these essential commodities for treatment of pneumonia and PSBI.
Maternal Health Supplies Caucus	GHSC-PSM participates in routine meetings for the MHSC, a subgroup of the reproductive health supplies coalition, which provides a forum for the maternal health and family planning communities to come together, forge a common language for understanding maternal health supply-related challenges, and draw on existing approaches to address the bottlenecks undermining commodity security across health systems. During the reporting period, GHSC-PSM staff attended and engaged in a session around the COMPASS initiative, which seeks to improve local ownership of supply chains.

# Global Advocacy Engagements

Current Reporting Period

2023-Q2



Crosscutting

3

Name of Engagement	Description
Health Informatics in Africa (Helina)	A GHSC-PSM MIS subject matter specialist represented the Family Planning/Reproductive Health task order and presented on emergency supply chain preparedness.
Global Health Supply Chain Summit, virtual, December 7-9, 2022	Staff representing the Family Planning/Reproductive Health task order and project offices in Angola, Rwanda, Malawi, Ethiopia, and Kenya gave eight cross-cutting presentations. GHSC-PSM's Malawi vaccine team was one of three finalists for the Global Health Supply Chain Summit grand prize.
Association for Supply Chain Management (ASCM) CONNECT Conference	There were two presentations from the non-field office (NFO) Managing Director, HSS Warehousing and Distribution Team Lead, and Maternal and Child Health Task Order Director on last-mile delivery and COVID-19 support at the Association for Supply Chain Management CONNECT Conference.

# Complete Quarterly Results (TO1)

Reporting Period

2023-Q2

Task Order	A1a. OTIF rate		A1b. OTD rate		A16. Backlog percentage		A10. Framework contracting	
	OTIF	Total # of Line Items Delivered	OTD	Total # of Line Items with ADDs in the quarter	Backlog	Total # of line items with ADDs in the last 12 months	Framework contract percentage	Procurement total
<b>TO1 - COVID19</b>	<b>94%</b>	<b>49</b>	<b>96%</b>	<b>50</b>	<b>2.5%</b>	<b>285</b>	<b>100%</b>	<b>\$451,876</b>
COVID19	94%	49	96%	50	2.5%	285	100%	\$451,876
<b>TO1 - HIV</b>	<b>85%</b>	<b>850</b>	<b>87%</b>	<b>851</b>	<b>4.7%</b>	<b>3,938</b>	<b>91%</b>	<b>\$95,633,604</b>
Adult ARV	78%	58	77%	57	3.5%	285	100%	\$27,686,541
Condoms	82%	22	70%	27	4.7%	172	100%	\$4,893,076
Food and WASH			0%	1	100.0%	1	0%	\$34,500
Laboratory	84%	580	87%	580	4.7%	2,778	86%	\$55,010,596
Other Non-Pharma	84%	38	82%	39	7.8%	179	91%	\$864,944
Other Pharma	95%	43	98%	42	3.2%	155	100%	\$1,197,289
Other RTK	100%	5	100%	5	8.8%	34	9%	\$1,349,117
Pediatric ARV	84%	51	91%	47	4.4%	158	100%	\$1,733,863
TB HIV	100%	13	100%	13	0.0%	59	100%	\$1,161,450
Vehicles and Other Equipment							100%	\$898,900
VMMC	100%	40	100%	40	4.3%	117	100%	\$803,329
<b>Total</b>	<b>86%</b>	<b>899</b>	<b>88%</b>	<b>901</b>	<b>4.5%</b>	<b>4,223</b>	<b>91%</b>	<b>\$96,085,480</b>

## A6a and A6b. Absolute percent supply plan or forecast ...

A6 Indicator	Supply plan/ forecast error	Supply plan/ forecast bias	4-quarter error	4-quarter bias
<b>A6a - Supply plan error</b>				
Adult ARV	40%	-40%	13%	-13%
Laboratory	29%	29%	36%	36%
Pediatric ARV	1%	1%	12%	12%
<b>A6b - Forecast Error</b>				
Condoms	12%	-12%	1%	1%

## C7a and C7b. Product loss due to expiry, theft, damage, and other causes

Country	Type of Loss	Product Group	Loss Value	Loss Denominator	% Loss
Nigeria	Damage	ARVs	\$7,569	\$48,101,169	0.02%
Kenya	Damage	Essential medicines	\$1,459	\$5,992,267	0.02%
Kenya	Damage	Laboratory Consumables	\$12,649	\$12,456,526	0.10%
The Philippines	Damage	Laboratory Reagents	\$17,880	\$342,700	5.22%

## A3. Cycle time (average)

Fulfillment Channel Task Order	Direct Drop Fulfillment			Warehouse Fulfillment			Total
	Air	Land	Sea	Air	Land	Sea	
<b>TO1 - COVID19</b>	<b>241</b>			<b>298</b>			<b>287</b>
COVID19	241			298			287
<b>TO1 - HIV</b>	<b>233</b>	<b>239</b>	<b>273</b>	<b>183</b>	<b>135</b>	<b>163</b>	<b>237</b>
Adult ARV	272		211	161	135	156	216
Condoms	182		311	220		169	280
Laboratory	228	231	184				228
Other Non-Pharma	320	309	246				312
Other Pharma	258	596	480				345
Other RTK	189						189
Pediatric ARV	241	263	242	192		167	234
TB HIV	164		165	190			171
VMMC	209		202				206
<b>Total</b>	<b>233</b>	<b>239</b>	<b>280</b>	<b>183</b>	<b>135</b>	<b>163</b>	<b>240</b>

## A8. Shelf life remaining

% Shelf Life Remaining	Inventory Balance
83%	\$5,325,935

## B6. Quarterly supply plan submissions

Product Group	Supply plan submission rate	# of supply plans required
ARVs	100%	21
Condoms	100%	21
Lab (HIV diagnostics)	100%	15
RTKs	100%	21
VMMC	100%	5

## Crosscutting indicators

### A14. Average vendor ratings

Vendor Type	Average vendor rating
Commodity Supplier	60%
Freight Forwarder	86%

# Complete Quarterly Results (TO2)

Reporting Period

2023-Q2

Task Order	A1a. OTIF rate		A1b. OTD rate		A16. Backlog		A7. Waiver percentage		A10. Framework contracting		A2. QA processes on time		A13 Out-of-spec		A15. QA reports	
	OTIF	Total # of Line Items Delivered	OTD	Total # of Line Items with ADDs in the quarter	Backlog	Total # of line items with ADDs in the last 12 months	Temporary registration waiver percentage	Total # of line items delivered	Framework contract percentage	Procurement total	% QA Processes On Time	Total # of QA processes completed	Out-of-specification percentage	Total # of batches tested	Report submissions	# of reports due
<b>TO2 - Malaria</b>	<b>90%</b>	<b>157</b>	<b>91%</b>	<b>150</b>	<b>4.6%</b>	<b>818</b>	<b>10.8%</b>	<b>158</b>	<b>100%</b>	<b>\$54,029,621</b>	<b>85%</b>	<b>86</b>	<b>0.3%</b>	<b>307</b>	<b>100%</b>	<b>3</b>
ACTs	95%	60	96%	52	0.8%	238	6.3%	63	100%	\$3,283,313	93%	28	0.0%	102	100%	2
Laboratory	84%	19	84%	19	4.0%	174	0.0%	19	96%	\$605,109						
LLINs	92%	25	100%	22	0.7%	136	0.0%	25	100%	\$35,389,758	100%	9	0.0%	39		0
mRDTs	82%	17	70%	20	5.9%	68	31.3%	16	100%	\$10,935,918	100%	18	1.9%	52		0
Other Non-Pharma	100%	2	100%	2	0.0%	21	0.0%	2	100%	\$106,825						
Other Pharma	50%	2	100%	1	0.0%	5	50.0%	2	100%	\$15,000		0	0.0%	1	100%	1
Other RTK									100%	\$7,194						
Severe Malaria Meds	89%	19	90%	20	13.9%	101	11.1%	18	100%	\$2,955,602	68%	19	0.0%	61		0
SMC	100%	8	90%	10	5.4%	37	25.0%	8			43%	7	0.0%	47		0
SP	80%	5	100%	4	21.1%	38	60.0%	5	100%	\$730,903	80%	5	0.0%	5		0
<b>Total</b>	<b>90%</b>	<b>157</b>	<b>91%</b>	<b>150</b>	<b>4.6%</b>	<b>818</b>	<b>10.8%</b>	<b>158</b>	<b>100%</b>	<b>\$54,029,621</b>	<b>85%</b>	<b>86</b>	<b>0.3%</b>	<b>307</b>	<b>100%</b>	<b>3</b>

## A3. Cycle time (average)

Fulfillment Channel Task Order	Direct Drop Fulfillment				Warehouse Fulfillment Sea	Total
	Air	Land	Multiple	Sea		
<b>TO2 - Malaria</b>	<b>294</b>	<b>334</b>	<b>476</b>	<b>317</b>	<b>118</b>	<b>311</b>
ACTs	181	178		326	118	290
Laboratory	426	48				406
LLINs		562	476	358		395
mRDTs	186			267		262
Other Non-Pharma	211					211
Other Pharma	260					260
Severe Malaria Meds	193			288		246
SMC				249		249
SP	246			420		350
<b>Total</b>	<b>294</b>	<b>334</b>	<b>476</b>	<b>317</b>	<b>118</b>	<b>311</b>

## C7a and C7b. Product loss due to expiry, theft, damage, and other causes

Country	Type of Loss	Product Group	Loss Value	Loss Denominator	% Loss
DRC	Damage	LLIN	\$14,865	\$2,490,334	0.60%
DRC	Missing product	LLIN	\$7,626	\$2,490,334	0.31%
Mali	Missing product	LLIN	\$3,278	\$3,397,011	0.10%

## B6. Quarterly supply plan submissions

Product Group	Supply plan submission rate	# of supply plans required
Malaria commodities	96%	28

## A8. Shelf life remaining

% Shelf Life Remaining	Inventory Balance
78%	\$177,516

## A14. Average vendor rating - QA labs

Average vendor rating
88%

## A6a. Absolute percent supply plan error

A6 Indicator	Supply plan/forecast error	Supply plan/forecast bias	4-quarter error	4-quarter bias
<b>A6a - Supply plan error</b>				
ACTs	22%	22%	51%	51%
mRDTs	31%	31%	24%	24%

## Crosscutting indicators

### A14. Average vendor ratings

Vendor Type	Average vendor rating
Commodity Supplier	60%
Freight Forwarder	86%

# Complete Quarterly Results (TO3)

Reporting Period

2023-Q2

## A1a. OTIF rate

## A1b. OTD rate

## A16. Backlog percentage

## A10. Framework contracting

Task Order	A1a. OTIF rate		A1b. OTD rate		A16. Backlog percentage		A10. Framework contracting	
	OTIF	Total # of Line Items Delivered	OTD	Total # of Line Items with ADDs in the quarter	Backlog	Total # of line items with ADDs in the last 12 months	Framework contract percentage	Procurement total
<b>TO3 - FP/RH</b>	<b>87%</b>	<b>75</b>	<b>86%</b>	<b>77</b>	<b>3.6%</b>	<b>275</b>	<b>100%</b>	<b>\$12,322,774</b>
Combined Oral Contraceptives	80%	15	87%	15	4.5%	44	100%	\$2,449,721
Copper-Bearing Intrauterine Devices	40%	5	50%	4	0.0%	15	0%	\$36,149
Emergency Oral Contraceptives	100%	8	100%	8	0.0%	10	100%	\$14,112
Implantable Contraceptives	95%	19	95%	19	2.7%	74	100%	\$5,117,762
Injectable Contraceptives	91%	23	91%	23	4.4%	68	100%	\$3,649,370
Laboratory							100%	\$138,525
Levonorgestrel-Releasing Intrauterine Devices			0%	3	50.0%	4		
Other Non-Pharma					0.0%	4	100%	\$313,622
Progestin Only Pills	80%	5	80%	5	2.6%	38	100%	\$600,048
Standard Days Method					0.0%	18	100%	\$3,465
<b>Total</b>	<b>87%</b>	<b>75</b>	<b>86%</b>	<b>77</b>	<b>3.6%</b>	<b>275</b>	<b>100%</b>	<b>\$12,322,774</b>

## A7. Temporary Waiver Percentage

Task Order	Temporary registration waiver percentage	Total # of line items delivered
<b>TO3 - FP/RH</b>	<b>4.0%</b>	<b>75</b>
Progestin Only Pills	40.0%	5
Injectable Contraceptives	4.3%	23
Combined Oral Contraceptives	0.0%	15
Copper-Bearing Intrauterine Devices	0.0%	5
Emergency Oral Contraceptives	0.0%	8
Implantable Contraceptives	0.0%	19
<b>Total</b>	<b>4.0%</b>	<b>75</b>

## A3. Cycle time (average)

Fulfillment Channel Task Order	Direct Drop Fulfillment			Warehouse Fulfillment		Total
	Air	Land	Sea	Air	Sea	
<b>TO3 - FP/RH</b>	<b>303</b>	<b>274</b>	<b>376</b>	<b>227</b>	<b>358</b>	<b>335</b>
Combined Oral Contraceptives			394		343	<b>391</b>
Copper-Bearing Intrauterine Devices				208		<b>208</b>
Emergency Oral Contraceptives	459		365			<b>388</b>
Implantable Contraceptives	263		436	128	339	<b>298</b>
Injectable Contraceptives	113	274	340	451	376	<b>350</b>
Progestin Only Pills				137	381	<b>284</b>
<b>Total</b>	<b>303</b>	<b>274</b>	<b>376</b>	<b>227</b>	<b>358</b>	<b>335</b>

## C7a and C7b. Product loss due to expiry, theft, damage, and other causes

Country	Type of Loss	Product Group	Loss Value	Loss Denominator	% Loss
Kenya	Damage	Implantable Contraceptives	\$1,870	\$1,360,000	0.14%
RDC	Damage	Oral contraceptives	\$1,310	\$3,123,756	0.04%

## B6. Quarterly supply plan submissions

Product Group	Supply plan submission rate	# of supply plans required
Condoms	100%	21
FP commodities	100%	22

## A6b. Absolute percent forecast error

A6 Indicator	Supply plan/ forecast error	Supply plan/ forecast bias	4-quarter error	4-quarter bias
<b>A6b - Forecast Error</b>				
Combined Oral Contraceptives	75%	-75%	1%	1%
Condoms	12%	-12%	1%	1%
Copper-bearing Intrauterine Devices	0%	0%	9%	-9%
Implantable Contraceptives	1%	1%	5%	-5%
Injectable Contraceptives	15%	-15%	5%	-5%
Progestin Only Pills	14%	14%	3%	-3%

## A8. Shelf life remaining

% Shelf Life Remaining	Inventory Balance
85%	\$4,032,466

## Crosscutting indicators

### A14. Average vendor ratings

Vendor Type	Average vendor rating
Commodity Supplier	60%
Freight Forwarder	86%

# Complete Quarterly Results (TO4)

Reporting Period ▼  
 2023-Q2 ▼

Task Order	OTIF	A1a. OTIF rate		A1b. OTD rate		A16. Backlog percentage		A10. Framework contracting	
		Total # of Line Items Delivered	OTD	Total # of Line Items with ADDs in the quarter	Backlog	Total # of line items with ADDs in the last 12 months	Framework contract percentage	Procurement total	
<b>TO4 - MNCH</b>	<b>100%</b>	<b>1</b>	<b>100%</b>	<b>1</b>	<b>0.0%</b>	<b>32</b>	<b>100%</b>	<b>\$64,315</b>	
Other Non-Pharma					0.0%	22	100%	\$35,910	
Other Pharma	100%	1	100%	1	0.0%	10	100%	\$28,404	
<b>Total</b>	<b>100%</b>	<b>1</b>	<b>100%</b>	<b>1</b>	<b>0.0%</b>	<b>32</b>	<b>100%</b>	<b>\$64,315</b>	

## Crosscutting indicators

### A14. Average vendor ratings

Vendor Type	Average vendor rating
Commodity Supplier	60%
Freight Forwarder	86%

### A3. Cycle time (average)

Task Order	Direct Drop Fulfillment	Total
<b>TO4 - MNCH</b>	<b>222</b>	<b>222</b>
Other Pharma	222	222
<b>Total</b>	<b>222</b>	<b>222</b>

# Indicator Details

Check out the [GHSC-PSM IDIQ M&E Plan](#) for complete details on all our indicators.

## Delivery Indicators

Indicator Code	Name	Numerator	Denominator	Data Source(s)	Reporting frequency	Other Info
A01a	On Time, In Full Delivery (OTIF) - Percentage of line items delivered on time and in full, within the minimum delivery window (within -14/+7 calendar days of the agreed delivery date (ADD))	Number of line items delivered to the recipient on time and in full during the quarter	Total number of line items delivered to the recipient during the quarter	ARTMIS	Quarterly	Lines items are considered on-time and in-full if the full ordered quantity of the line item is delivered to the recipient within the -14/+7 day delivery window. If the line item is partially delivered within the window, it may be considered on-time but not in-full.
A01b	On Time Delivery (OTD) — Percentage of line items delivered on time, within the minimum delivery window (within -14/+7 calendar days of the agreed delivery date (ADD))	Number of line items with an ADD during the quarter that were delivered to the recipient on time	Total number of line items with an ADD during the quarter	ARTMIS	Quarterly	
A16	Percentage of backlogged line items	Number of line items with an ADD on or before the reporting period end date, within a rolling 12-month period, that have not been cancelled or put on hold and that are currently undelivered and late	Total number of line items with an ADD on or before the reporting period end date, within a rolling 12-month period, that have not been cancelled or put on hold	ARTMIS	Quarterly	

## Cycle time Indicators

Indicator Code	Name	Numerator	Denominator	Data Source(s)	Reporting frequency	Other Info
A03a	Cycle time (average)	Sum of cycle time for all line items delivered during the quarter	Count of all line items delivered during the quarter	ARTMIS	Quarterly	Overall cycle time is defined as the number of days between when a customer order is submitted to when the shipment is actually delivered to the customer, inclusive of the start/end days and all holds or other dwell times.
A03b	Dwell-adjusted cycle time (average)	Sum of cycle time for all line items delivered during the quarter, excluding all defined inactive dwell periods from the overall cycle time	The count of all line items delivered during the quarter	ARTMIS	Quarterly	Dwell-adjusted cycle time is defined as the overall cycle time minus the sum of all dwell durations for all holds placed on the line item during its fulfillment.

# Indicator Details

Check out the [GHSC-PSM IDIQ M&E Plan](#) for complete details on all our indicators.

## Quality Assurance Indicators

Indicator Code	Name	Numerator	Denominator	Data Source(s)	Reporting frequency	Other Info
A02	Percentage of QA processes completed within the total estimated QA lead times (on-time completion rate for QA processes)	Number of consignments complying with the pre-established QA lead times during the quarter	Total number of consignments requiring QA processes that were cleared for shipment during the quarter	QA Database	Quarterly	Consignment is defined as a shipment of commodities, including one or more line items. QA process transactions are managed at the consignment level, regardless of the number of line items in the consignment.
A13	Percentage of batches of product for which the final result is showing nonconformity (out of specification percentage)	Total number of batches of product showing nonconformity during the quarter	Total number of batches tested during the quarter	QA Database	Quarterly	
A14b	Average vendor rating score - QA lab services	Sum of all key vendor ratings.	Number of key vendors from whom GHSC-PSM procured lab testing services during the quarter	QA scorecard	Quarterly	All vendors are equally weighted in the overall score, regardless of procurement volume from each vendor.
A15	Percentage of quality assurance Investigation reports submitted within 30 calendar days of outcome determination (QA investigation report submission)	Number of QA investigation reports submitted to PMI within 30 days of outcome determination	Total number of QA investigation reports due during the reporting period	QA Database, email submissions	Semiannual	

## Procurement Indicators

Indicator Code	Name	Numerator	Denominator	Data Source(s)	Reporting frequency	Other Info
A07	Percentage of line items imported using a temporary registration waiver (temporary waiver percentage)	Number of line items that were imported using a temporary registration waiver	Total number of line items delivered to the recipient during the quarter	Supplier registration bidding documentation	Quarterly	
A10	Percentage of product procured using a framework contract (framework contract percentage)	Value of product purchased through framework contracts during the quarter	Total value of commodities purchased during the quarter	ARTMIS	Quarterly	



# Indicator Details

Check out the [GHSC-PSM IDIQ M&E Plan](#) for complete details on all our indicators.

## Forecast and Supply Planning Indicators

Indicator Code	Name	Numerator	Denominator	Data Source(s)	Reporting frequency	Other Info
A06a	Absolute percent supply plan error, with variants annual absolute percent error and supply plan bias	Absolute value of the differences between the actual quantities with requested delivery dates during the quarter minus the quantities planned for delivery according to country supply plans	Sum of the actual quantities with requested delivery dates during the quarter	ARTMIS, Country Supply Plans	Quarterly	Supply plan error is currently calculated for adult and pediatric ARVs, HIV lab products, ACTs, and malaria rapid diagnostic tests. Planned quantities are drawn from an aggregation of country supply plans submitted in the prior quarter, including only the quantities that are forecasted to be procured through GHSC-PSM. Actual quantities are derived based on the requested delivery dates for products included in customer ROs submitted to ARTMIS.
A06b	Absolute percent forecast error, with variants annual absolute percent error and forecast bias	Absolute value of the differences between the actual quantities with requested delivery dates during the quarter minus the quantities planned for delivery according to the global demand forecast	Sum of the actual quantities with requested delivery dates during the quarter	ARTMIS, Country Supply Plans, PPMR, other sources	Quarterly	Forecast error is currently calculated for condoms and contraceptives. Forecasted or planned quantities are drawn from the GHSC-PSM global demand forecasts for each product, which are based on an aggregation of country supply plans submitted in the prior quarter and additional inputs, such as country order history, data from coordinated planning groups, and global market dynamics indicators. Actual quantities are derived based on the requested delivery dates for products included in customer ROs submitted to ARTMIS.

## Warehouse Indicators

Indicator Code	Name	Numerator	Denominator	Data Source(s)	Reporting frequency	Other Info
A04	Inventory turns (average number of times inventory cycles through GHSC-PSM controlled global facilities)	Total ex-works cost of goods distributed from GHSC-PSM-controlled global inventory stocks (in USD) within the fiscal year	Average monthly inventory balance (in USD)	Inventory extract	Annual	
A08	Average percentage of shelf life remaining for warehoused commodities, weighted by the value of each commodity's stock (product at risk percentage)	Percentage of shelf life remaining at the end of the quarter, weighted by value of commodities, summed across all products	Total value of commodities, summed across all products, at the end of the quarter	Inventory extract	Quarterly	Shelf life requirements vary by country and by product.

# Indicator Details

Check out the [GHSC-PSM IDIQ M&E Plan](#) for complete details on all our indicators.

## 3PL and Commodity Vendor Indicators

Indicator Code	Name	Numerator	Denominator	Data Source(s)	Reporting frequency	Other Info
A14a	Average vendor rating score - Commodity suppliers	Sum of all key vendor ratings	Number of key vendors from whom GHSC-PSM procured products/commodities during the quarter	ARTMIS	Quarterly	Scorecards are compiled on one-month lag, i.e. Q1 data represents vendor performance from Sept-Nov. Supplier OTIF is currently reported for high value and/or high risk suppliers. Only suppliers for which one or more order line items were fulfilled in this reporting period were included. All vendors are equally weighted in the overall score, regardless of procurement volume from each vendor.
A14c	Average vendor rating score - Freight forwarders	Sum of all key vendor ratings	Number of key vendors from whom GHSC-PSM procured freight forwarding services during the quarter	3PL scorecard	Quarterly	To allow complete data collection, freight forwarder scorecards are conducted on a one-month lag (i.e. Q1 data represents performance from Sept-Nov, rather than Oct-Dec). Overall score is weighted by delivery volume, such that vendors who deliver a greater number of shipments will have a relatively greater impact on the result.

## Product Loss Indicators

Indicator Code	Name	Numerator	Denominator	Data Source(s)	Reporting frequency	Other Info
C07a	Percentage of product lost due to expiry while under GHSC-PSM control (product loss percentage)	Total value of product lost due to expiry during the quarter	Average inventory balance (in USD) during the quarter	Inventory reports	Quarterly	Expiries from the Regional Distribution Centers (RDCCS) are presented in the GSC section of this report. Expiries that occur in warehouses that GHSC-PSM manages in countries are reported in the country-specific sections of this report.
C07b	Percentage of product lost due to theft, damage, or other causes, while under GHSC-PSM control (product loss percentage)	Total value of product lost due to theft, damage, or other causes during the quarter	For losses in transit: Total value (in USD) of product delivered during the quarter For losses in storage: Average inventory balance (in USD) during the quarter	GHSC-PSM Continual Improvement system reports	Quarterly	Product losses due to incidents are reported only after the actual value of the loss has been determined, which may be later than the quarter in which the incident took place or was first reported to GHSC-PSM Continual Improvement.

# Indicator Details

Check out the [GHSC-PSM IDIQ M&E Plan](#) for complete details on all our indicators.

## GHSC-BI&A Data Sharing Indicators

Indicator Code	Name	Numerator	Denominator	Data Source(s)	Reporting frequency	Other Info
C04	Percentage of required files submitted to GHSC-BI&A in the reporting period	Number of required files submitted to BI&A during the quarter	Total number of files required for submission to BI&A during the quarter	GHSC-BI&A File Submission dashboard	Quarterly	Data requirements, including file types, data elements, submission formats, and frequency, are governed by the BI&A Information Specification for Implementing Partners (the "Infospec"). Exceptions may be specified by USAID.
C05	Percentage of required files timely submitted to GHSC-BI&A in the reporting period.	Number of required files timely submitted to BI&A during the quarter	Total number of files required for submission to BI&A during the quarter	GHSC-BI&A File Submission dashboard	Quarterly	Data requirements, including file types, data elements, submission formats, and frequency, are governed by the BI&A Information Specification for Implementing Partners (the "Infospec"). Exceptions may be specified by USAID.
C06	Average percent variance between GHSC-PSM ARTMIS and GHSC-BI&A calculations of key supply chain indicators for Task Order 1	Absolute value of GHSC-BI&A Order Performance indicator value minus GHSC-PSM ARTMIS dashboard indicator value	GHSC-PSM ARTMIS indicator value	ARTMIS, GHSC-BI&A Order Performance dashboard	Quarterly	The two indicators used to asses this variance are: 1) on-time delivery, 2) count of order lines with ADDs in the current period

# Indicator Details

Check out the [GHSC-PSM IDIQ M&E Plan](#) for complete details on all our indicators.

## Total Landed Cost

Indicator Code	Name	Numerator	Denominator	Data Source(s)	Reporting frequency	Other Info
A05	Total Landed Cost (as a percentage of total value of commodities delivered to recipients)	Sum of all freight and logistics costs (in USD) paid by GHSC-PSM during the reporting period	Sum of the value of all commodities delivered to recipients during the reporting period	ARTMIS, Monthly Financial Statement	Semiannual	The project will also report a variant of this indicator that includes all HQ supply chain operations costs in the numerator. Quality assurance costs will be excluded from all task orders, as QA costs are not paid by GHSC-PSM for all task orders. A version of the indicator including QA costs will be reported for Task Order 2 only.

## Global Advocacy Engagements

Indicator Code	Name	Numerator	Denominator	Data Source(s)	Reporting frequency	Other Info
C08	Number of global advocacy engagements in support of improved availability of essential health commodities	Number of global advocacy engagements in support of improved availability of essential health commodities	NA	Project work plans, narrative reports	Semiannual	

# Indicator Details

Check out the [GHSC-PSM IDIQ M&E Plan](#) for complete details on all our indicators.

## Delivery Impact Indicators

Indicator Code	Name	Numerator	Denominator	Data Source(s)	Reporting frequency	Other Info
NA	Number of ACT treatments delivered	Sum of ACT treatments delivered to countries, where a treatment is equal to one blister strip		ARTMIS	Quarterly	Includes malaria treatments delivered over the life of the project, with “full dose” based on WHO-recommended treatment guidelines. Specific medicines counted are limited to those used only for treatments, and not primarily as prophylaxis. Specifically, it includes Artemether/Lumefantrine, Artesunate/Amodiaquine, and Arteminol/Piperaquine formulas.
NA	Number of Couple Years Protection delivered	Total of contraceptive method units delivered to countries, multiplied by the couple-years protection conversion factors per method, summed across all contraceptive methods delivered.		ARTMIS and USAID/MEASURE CYP conversion factors	Quarterly	CYP is a standard indicator calculated by multiplying the quantity of each contraceptive method distributed by a conversion factor to yield an estimate of the duration of contraceptive protection provided per unit of that method. The CYP for each method is then summed for all methods to obtain a total CYP figure. CYP conversion factors are based on how a method is used, failure rates, wastage, and how many units of the method are typically needed to provide one year of contraceptive protection for a couple. The calculation takes into account that some methods, e.g., condoms and oral contraceptives, may be used incorrectly and then discarded, or that intrauterine devices (IUDs) and implants may be removed before their life span is realized. This GHSC-PSM measure includes all condoms, IUDs, and hormone (oral, injectable, and implantable) contraceptives delivered over the life of the project, with the conversion factor provided by USAID/MEASURE (see <a href="https://www.usaid.gov/what-we-do/global-health/family-planning/couple-years-protection-cyp">https://www.usaid.gov/what-we-do/global-health/family-planning/couple-years-protection-cyp</a> for details).
NA	Person-years of ARV treatment delivered	Sum of the monthly treatment units of adult first-line ARV treatments delivered to countries, divided by 12		ARTMIS	Quarterly	This report only includes Adult Efavirenz/Lamivudine/Tenofovir (TLE, Nevirapine/Lamivudine/Zidovudine (NLZ), and Dolutegravir/Lamivudine/Tenofovir (TLD). Doses for calculating treatments are based on World Health Organization (WHO)-recommended guidelines. The calculation of patient-years allows GHSC-PSM to monitor effectiveness and efficiency by a standard unit.