

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



FISCAL YEAR 2022

QUARTERLY REPORT | QUARTER 2 JANUARY 1, 2022, TO MARCH 31, 2022



FISCAL YEAR 2022

QUARTERLY REPORT

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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.

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Contents

Acronyms	5
Executive Summary	16
Global Supply Chain Performance	19
Value to the U.S. Taxpayer and the U.S. Government's International Health Programs	21
Cost Saving on Medicines and Health Commodities	21
Cost Savings on Logistics	22
Health Areas	23
Strengthening Health Institutions	28
Introduction	31
A1. Background	31
A2. About This Report	31
PROGRESS BY HEALTH AREA	34
B1. HIV/AIDS	34
HIV/AIDS Supply Chain On-Time Delivery and Cost Savings	35
Supporting PEPFAR's HIV Prevention Agenda	38
Supporting the First 95: Testing	40
Supporting the Second 95: Treatment	40
Supporting the Third 95: Viral-Load Testing	42
HIV/AIDS Supply Chain Data Visibility and Commodity Security	43
Country Support	44
B2. Malaria	46
Cost Savings on Malaria Commodities	46
Commodity Sourcing, Procurement and Delivery	47
Proactive Procurement Strategy	51

Quality Assurance	52
Promoting Supply Chain Health	53
Adoption of Standards-Based Identification, Barcoding, and Data Sharing Standards	55
Prioritizing and Redirecting Orders	55
Stockout Reduction Initiative	56
LLIN Distribution Support	57
Country Support	58
B3. Family Planning and Reproductive Health	60
Cost-savings on Contraceptives	61
Addressing FP/RH Priorities	62
Collaboration with Global Stakeholders	65
Country Support	67
B4. Maternal, Newborn, and Child Health	70
Provide international MNCH supply chain leadership and guidance	71
Support data-informed health supply chain decision-making for MNCH commodities	74
Improve adherence to globally recognized MNCH commodity quality standards	76
Conduct ad hoc strategic procurement to increase the availability of quality-assured MNCH commodities	77
PROGRESS BY OBJECTIVE	78
C1. Global Commodity Procurement and Logistics	78
C1a. Global Supply Chain: Focused on Safe, Reliable, Continuous Supply	78
More Health Through Market Dynamics, Strategic Sourcing, and Supplier Management	79
Decentralized Procurement	80
Global Standards	80
Impacts of COVID-19 on Freight and Logistics	82

C1b. Project Performance	83
Timeliness of Delivery	83
C2. Systems-Strengthening Technical Assistance	90
Advanced Analytics	90
Global Standards and Traceability	93
Forecasting and Supply Planning	93
Management Information Systems	96
Laboratory networks	98
Warehousing and Distribution	99
Workforce Development	101
Leadership and Governance	101
C2a. Project Performance	103
Supply Plans	103
C3. Global Collaboration	104
Strategic Engagement	104
Knowledge sharing	105
Collaboration With Other USAID GHSC Projects	107
Annex A. COVID-19 Response	108
Supporting the global COVID-19 vaccine rollout	109
Presenting COVID-19 successes	109
Activities under COVID-19 ARPA	110
Procurement	110
Other USAID-Funded Procurement and Technical Assistance	111
Procuring COVID-19 equipment for Italy	111
Ventilator support	111

Oxygen	111
HSS: COVID-19 and Emergency Preparedness and Response	112

ACRONYMS

3HP	isoniazid and rifapentine (combination treatment for tuberculosis)
3PL	third-party logistics
4PL	fourth-party logistics
ABC	activity-based costing
ALu	artemether-lumefantrine
ACT	artemisinin-based combination therapy
AMF	Against Malaria Foundation
API	active pharmaceutical ingredient
APWG	ARV/3HP Procurement Working Group
ARPA	American Rescue Plan Act
ART	antiretroviral therapy
ARV	antiretroviral

ARVFAST	Antiretroviral Forecasting and Supply Planning Tool
BMGF	Bill & Melinda Gates Foundation
BoMRA	Botswana Medicines Regulatory Authority
CARAMAL	Community Access to Rectal Artesunate for Malaria
CHAI	Clinton Health Access Initiative
CHTF	Child Health Task Force
CMS	central medical store
CAP/CTM	Cobas Ampliprep/Cobas TaqMan
COC	combined oral contraceptive
COP	country operational plan
CRS	Catholic Relief Service
DCP	decentralized procurement
DMPA	depot-medroxyprogesterone acetate

DNO	diagnostic network optimization
DPLM	Department of Pharmacy, Medicine, and Laboratory
DRC	Democratic Republic of the Congo
DT	dispersible tablet
DTG	dolutegravir
EID	early infant diagnosis
eLMIS	electronic logistics management information system
EPI	Expanded Programme on Immunization
ERP	enterprise resource planning
EUV	end-use verification
FASP	forecasting and supply planning
FCT	Federal Capital Territory
FLARE	First-Line ARV Reporting and Evaluation

FP/RH	family planning/reproductive health
FY	fiscal year
GAD	goods availability date
GDSN	Global Data Synchronization Network
GHSC-PSM	Global Health Supply Chain Program-Procurement and Supply Management project
GHSC-QA	Global Health Supply Chain Program-Quality Assurance project
GHSC-RTK	Global Health Supply Chain Program-Rapid Test Kit project
GHSC-TA	Global Health Supply Chain Program-Technical Assistance project
GTIN	Global Trade Item Number
HSSP	Health Sector Strategic Plan
ICU	intensive care unit
IFUs	instructions for use
IM	intramuscular

INH	isoniazid
i2i	Innovation to Impact
IRS	Indoor Residual Spraying
ITN	Insecticide-treated net
IUD	intrauterine device
KPI	key performance indicator
KSM	key starting material
LLIN	long-lasting insecticide-treated net
LMD	last mile distribution
LMIS	logistics management information system
LOX	liquid oxygen
LQAG	LLIN Quality Assurance Group
MCH	maternal and child health

MIS	management information system
MMD	multi-month dispensing
MNCH	maternal, newborn, and child health
MOH	Ministry of Health
MOP	Malaria Operational Plan
mRDT	malaria rapid diagnostic test
MSF	Médecins Sans Frontières
MTaPS	Medicines, Technologies and Pharmaceutical Services
NPC	National Product Catalog
NMCP	National Malaria Control Program
NMEC	National Malaria Elimination Center
NMT	no more than
NPHCDA	National Primary Health Care Development Agency

NSCA	National Supply Chain Assessment
OOS	out-of-specification
OTD	on-time delivery
OTIF	on-time, in-full delivery
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PLHIV	people living with HIV
PMI	U.S. President's Malaria Initiative
POC	point of care
PPE	personal protective equipment
PQM+	Promoting the Quality of Medicines
PPH	postpartum hemorrhage
PPMRm	Procurement Planning and Monitoring Report for malaria
PrEP	pre-exposure prophylaxis

PSA	pressure swing absorption
PSBI	possible serious bacterial infection
Q	quarter
QA	quality assurance
QAT	Quantification Analytics Tool
QC	quality control
QMS	quality management system
RDC	regional distribution center
RFP	request for proposal
RMS	Rwanda Medical Supply
RTK	rapid test kit
SC	subcutaneous
SDP	service delivery point

SMC	seasonal malaria chemoprevention
SMO	social marketing organization
SOP	standard operating procedure
SP	sulfadoxine/pyrimethamine
SPAQ	sulphadoxine-pyrimethamine + amodiaquine
SSA	sub-Saharan Africa
SSA	semi-synthetic artemisinin
TA	technical assistance
TAG	technical advisory group
TB	tuberculosis
TE	tenofovir/emtricitabine
TL	tenofovir/lamivudine
TLD	tenofovir/lamivudine/dolutegravir

TO	task order
TPT	TB preventive treatment
TransIT	transportation information tool
UAT	user acceptance testing
UCC	ultra-cold chain
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
VMMC	voluntary medical male circumcision
WHO	World Health Organization

ZPBF	Zambian Pharmaceutical Business Forum
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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 to summarize our work and performance for the second quarter (Q2) of Fiscal Year 2022 (FY 2022). The project provides lifesaving medicines and other health commodities. It 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 Fast Facts

Over the life of the project, GHSC-PSM has:

- Delivered more than **68.7 million bottles of tenofovir/lamivudine/dolutegravir (TLD)** to **30 countries**
- Delivered enough antimalarials to treat **426.7 million infections**
- Delivered enough contraceptives to provide **an estimated 99.6 million couple-years** of protection
- Procured a total of over **\$23.9 million in MNCH commodities**
- Supported **50 countries** with technical assistance

GHSC-PSM continues to keep its finger on the pulse of global and local logistics, constantly obtaining, updating, and analyzing information in real-time to enable the project to pivot and ensure the continuous flow of commodities to those who need them most. In Q2 FY 2022, GHSC-PSM saw the continued negative impacts of COVID-19 on manufacturing as well as on global logistics. The disruptions to global supply chains were further exacerbated in this quarter by congestion around Chinese New Year, the Beijing Olympics, cyclones and tropical storms in various countries, and in particular, by the Russian invasion of Ukraine.

While some countries eased their COVID-19 restrictions, rising infections and lockdowns in key, high-volume origin points, such as Hong Kong and Shanghai, restricted capacity and the flow of shipments from air and ocean ports and created unpredictable rate fluctuations. Also, airlines responded to the crisis in Ukraine by focusing routes on popular destinations. Reduced capacity to already underserved locations is a grave area of concern, which could worsen as fewer freighter aircraft serve these routes.

Space on ocean vessels and equipment remained tight due to frequent canceled sailings and some ports being omitted from the schedule at the last minute. Vessel delays are creating unreliability in scheduling, with current scheduling reliability at just 35 percent with an average delay in transit of seven days. Fuel surcharges have also increased dramatically (they were already at record high levels).

Through it all, and with the support of USAID, GHSC-PSM continues to build upon and expand its strong foundation, adapting to challenges to meet its programmatic commitments, while implementing new and thoughtful approaches in the process. Some highlights from Q2 include:

- Immediately following the Russian invasion of Ukraine, the project delivered more than 200 thousand 90-tablet bottles of TLD to Lviv to help ensure an uninterrupted supply of antiretrovirals (ARVs) to people living with HIV. This involved tremendous collaboration between the USAID/Ukraine Mission, 100% Life, the Ukrainian Center for Public Health, and multiple logistics partners. (For more information, see Sections B1. and C1.)
- With U.S. Government (USG) funds, GHSC-PSM provides technical assistance and related procurement support to countries in their COVID-19 vaccine rollout. These countries made significant progress in their planned activities in Q2. Technical support varies from country to country and includes cold chain and ultra-cold chain storage and distribution, waste management planning, and coordination of vaccine rollouts through in-country technical working groups. In Angola, GHSC-PSM collaborated with the Ministry of Health (MOH) to develop training guides for the surveillance of adverse events post-vaccination and to cascade training on pharmacovigilance and COVID-19-related topics. As a result, the notification system has seen an increase in technicians notifying of adverse events following immunizations. (For more information, see Annex A. COVID-19 Response.)
- Nigeria's National Primary Health Care Development Agency (NPHCDA) expressed appreciation for GHSC-PSM's prompt and consistent support of its vaccine distribution efforts. As of the end of Q2, the project had distributed more than 14 million vaccine doses across the 36 states plus the Federal Capital Territory (FCT) and was completing distribution of almost 9 million vaccines to all 36 states and 859,600 doses from the National Strategic Cold Stores to 19 states and the FCT. (For more information, see Annex A. COVID-19 Response.)
- Surging demand for rapid tests in Q1 and Q2, in the wake of COVID-19 Delta and Omicron SARS-CoV-2 variants, prompted multiple malaria rapid diagnostic test (mRDT) suppliers to prioritize their COVID-19 diagnostics production lines. Through a combination of reallocation and advocacy with countries to accept longer lead times, the project foresees that it will be able to fulfill country orders received as of Q2. (For more information, see section B2. Malaria.)
- GHSC-PSM and designated non-project buyers achieved approximately \$4.28 million in savings on viral load/early infant diagnosis (VL/EID) tests delivered this quarter (compared to the pre-global request for proposal prices), under the terms of global service-level agreements with the three manufacturers. (For more information, see section B1. HIV/AIDS.)

The project conducted field-based activities for a National Supply Chain Assessment (NSCA) in Rwanda. During primary data collection, a total of 17 teams were deployed to collect data from over 200 sites in less than three weeks' time. In Q2, the project also conducted a French-language webinar on the NSCA. The event enjoyed strong participation with over 50 people in attendance and a lively question-and-answer session. (For more information, see section C3. Health Systems Strengthening.)

- In Ghana, GHSC-PSM worked with the National Malaria Control Program (NMCP) and other donors to develop an app to digitize management of long-lasting insecticide-treated net (LLIN) mass distribution campaigns. (For more information, see section B1. Malaria.)
- The project made further progress in rolling out the Quantification Analytics Tool (QAT). In collaboration with the Zambian government, GHSC-PSM leveraged analysis from the QAT to identify funding gaps and inform resource mobilization. This resulted in reducing the gap by 43 percent to \$2.6 million, as opposed to the previous gap, which stood at \$6 million. (For more information, see section C3. Health Systems Strengthening.)
- For International Women's Day, GHSC-PSM South Sudan highlighted the work of its all-female country supply chain team through videos that described the challenges and impact of increasing access to and awareness of contraception and participated in a radio broadcast. (For more information and links to the videos/radio broadcast, see section B3. Family Planning and Reproductive Health.)
- As part of its global response to the pandemic, USAID tasked the project with procuring and delivering oxygen commodities. In Tajikistan, health workers and facilities had experienced accidents with the handling of oxygen and problems with inadequate quality control of the oxygen supply. In Q2, GHSC-PSM conducted a non-clinical oxygen training of trainers for medical professionals and stakeholders on oxygen safety and to introduce essential practices for the safe handling of oxygen and hospital operations. (For more information, see Annex A. COVID-19 Response.)
- With additional funding received under the American Rescue Plan Act (ARPA), GHSC-PSM made progress in establishing stockpiles for COVID-19 rapid test kits and personal protective equipment (PPE). The PPE stockpile is made possible through vendor-stored inventory. The project developed communication materials to help inform Missions as to how to tap into these two stockpiles—with or without ARPA funding that will be shared in Q3. (For more information, see Annex A. COVID-19 Response.)
- GHSC-PSM continues to prepare for the transition to the NextGen suite of projects. In Q2, the project hired and onboarded its transition team, made up of a Transition Associate and Change Management Advisor, and stood up its Technical Advisory Group (TAG)—an internal, cross-cutting working group charged with advising the transition team. The transition team, supported by the TAG, jumped into transition planning with a focus on managing risk and promoting sustainability. They developed various transition management tools, including a country stakeholder analysis tool and procurement close-out timetables.

Global Supply Chain Performance

Section C1 describes GHSC-PSM's global supply chain procurement and logistics activities and achievements. Highlights of our global supply chain performance in Q2 are below.



Procured over \$238 million in drugs, diagnostics, and health commodities in Q2, and over \$4.4 billion to date.



Delivered over \$200 million in drugs, diagnostics, and health commodities in Q2, and over \$4 billion to date.



Achieved **on-time delivery¹ (OTD) of 88 percent (72 percent COVID-impacted)² and on-time, in-full delivery (OTIF) of 87 percent (77 percent COVID-impacted)** (see Exhibits 1 and 2). The backlog of late orders was 5 percent.

OTD rates stayed consistently strong for all health areas in Q2. OTD was 88 percent (72 percent COVID-impacted) and OTIF was 87 percent (77 percent COVID-impacted) for the quarter, the 12th successive quarter that OTD has been above 85 percent. OTD was 89 percent (72 percent COVID-impacted) for HIV; 81 percent (68 percent COVID-impacted) for malaria; 95 percent (95 percent COVID-impacted) for FP/RH, and 100 percent (60 percent COVID-impacted) for maternal, newborn, and child health (MNCH) medicines and commodities, each of which exceeded the contract's 80 percent quarterly target. Additional delivery results, including OTIF, are discussed below in each health area section. Note that, as of the end of Q2 FY 2020, the number of COVID-impacted orders started to increase significantly and continued to adversely impact on-time delivery performance

¹ 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.

² During the COVID-19 pandemic, GHSC-PSM will present two versions of its usual OTD indicator. The first will be the "standard" version, calculated according to the indicator definition as laid out in the project's monitoring and evaluation plan and in accordance with all associated policies/standard operating procedures (SOPs). These policies and SOPs allow for USAID-approved adjustments to agreed-to delivery dates in the case of interruptions that are beyond the project's manageable control, including pandemic impacts. The "standard" version of OTD will therefore show the project's performance, controlling for impacts of COVID-19 and other external disruptions. The second calculation of OTD is the "COVID-19-impacted" version. This version follows the same rules and definitions as the standard indicator, but the "control" for pandemic impacts will not be used. All pandemic-impacted line items will be assessed as on-time or not, according to the agreed-to delivery date at the time the order was approved. This version of the indicator will show the full impact of supplier and logistics delays because of manufacturing shutdowns, port and border closures and other pandemic control measures. The delays cannot be attributed to GHSC-PSM, but the project is committed to sharing these outcomes in the interest of full transparency and acknowledgement of the challenging and unprecedented circumstances presented by COVID-19.

through Q2 FY 2022. The high degree of uncertainty and the extreme volatility in freight costs in global supply chains caused by the pandemic continues to impact a large number of orders. GHSC-PSM continues to conduct root-cause analyses of late deliveries to refine procurement and supply chain processes and to continuously improve performance.

Exhibit 1. OTD April 2021–March 2022

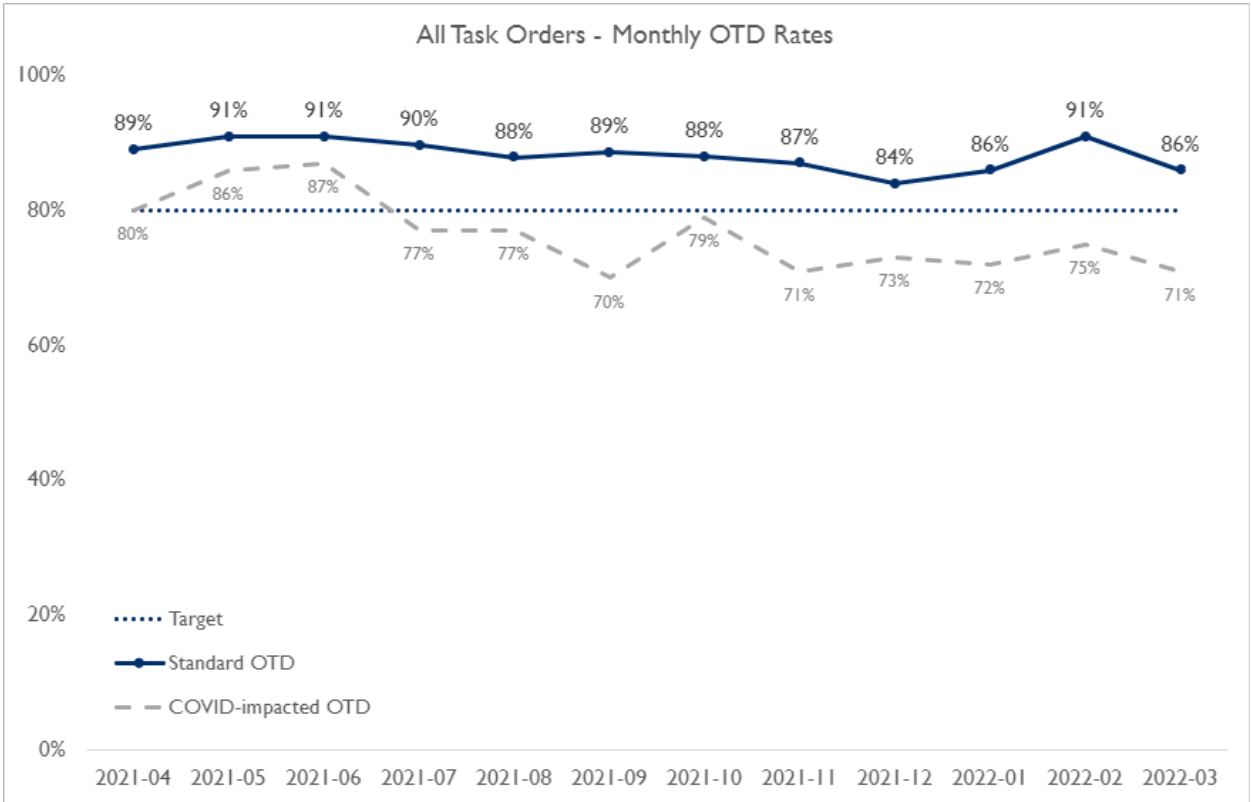
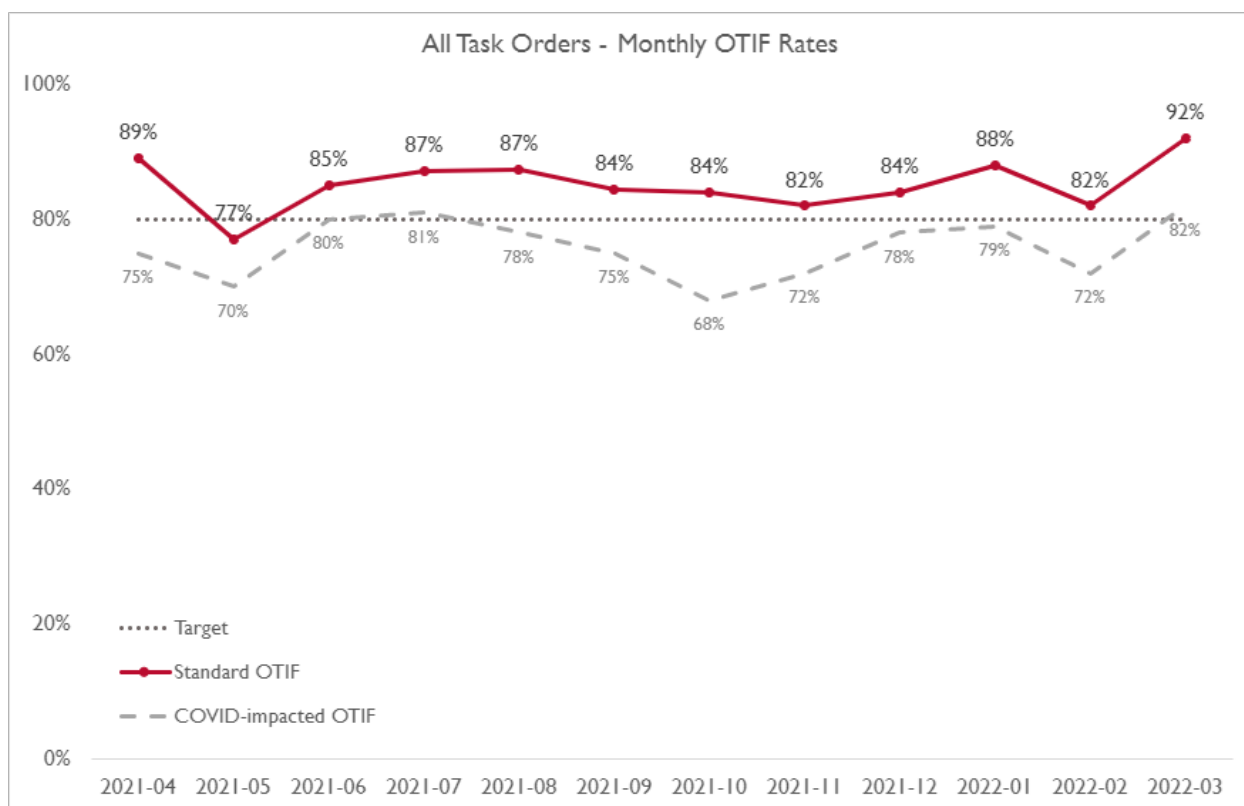


Exhibit 2. OTIF April 2021–March 2022



In Q2, GHSC-PSM made significant efforts to address the lingering impacts of COVID-19 on freight and logistics that were further exacerbated by Russia’s invasion of Ukraine. The project continues to show its adaptability and flexibility in handling unforeseen shifts in the marketplace.

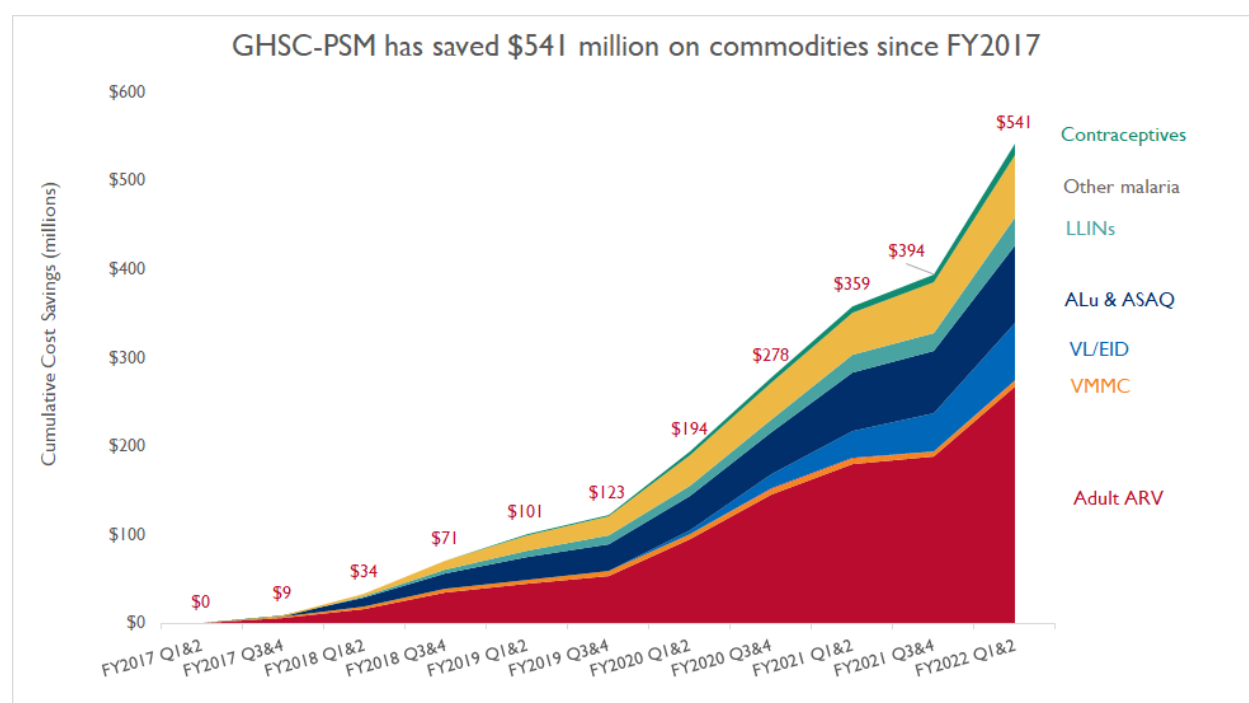
VALUE TO THE U.S. TAXPAYER AND THE U.S. GOVERNMENT'S INTERNATIONAL HEALTH PROGRAMS

GHSC-PSM works to achieve best value for the U.S. taxpayer by implementing approaches that result in lower costs for commodities and freight.

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 \$541 million on commodities over the life of the project, as shown in Exhibit 3.

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, such as condoms and mRDTs, so the USG can benefit from a competitive supplier base. Additional savings have also accrued as prices for these commodities have risen slower than the general rate of inflation. This analysis is provided in Section C1b.

COST SAVINGS ON LOGISTICS

GHSC-PSM saved \$13.1 million on logistics over Q1 through Q2 FY 2022 and \$66.5 million over the life of the project. Cost savings are realized through :

- Open competition in freight lanes
- Optimization of the regional distribution center (RDC) 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 of project achievements are provided below.

GHSC-PSM has delivered enough antiretroviral therapy to **provide nearly 17.8 million patient-years of HIV treatment to date.**

This includes **12.9 million patient-years of TLD treatment delivered to date.**

HIV/AIDS

Support for Country Operational Plans.

During Country Operational Plan (COP) 2022 planning, GHSC-PSM supported USAID with historical freight information to help Missions plan their COP 2022 procurement needs. The project created the tool using historical freight rates by product and by country. Also, GHSC-PSM staff participated in the “Supply Planning Tool (SPT) and Funding Allocation Strategy Tool (FAST) Commodities Tab Working Group” to support USAID with planning the roll out of the COP tools - in particular, the SPT. Together with the country offices, GHSC-PSM working group members ensured countries understood the requirements to complete the SPT. During the COP, working group members provided supply plan data from QAT while coordinating and troubleshooting with the country offices when they had any challenges completing the SPT.

Pre-exposure prophylaxis (PrEP). In Q2 FY 2022, GHSC-PSM delivered \$4.2 million worth—more than 1 million PrEP bottles—to eight countries. This is the fifth consecutive quarter with deliveries of more than one million packs

Condoms. GHSC-PSM delivered condoms (male and female) and lubricant to 18 countries and increased reserved stock in the Dubai RDC by 5 million pieces to ensure responsiveness. The project tapped into this reserve to source emergency deliveries from the RDC for Benin and Haiti in Q2.

Access to essential medicines. While it is critical for countries to adopt these guidelines to save lives, access to medications to combat cryptococcal disease remains scarce in many countries. In Q2, GHSC-PSM finalized an agreement to procure flucytosine directly from the manufacturer offering global access pricing, worked on contract negotiations for the procurement of amphotericin B liposomal, and completed the price refresh for most of the essential medicines procured through approved wholesalers.

Transitioning to dolutegravir (DTG) 10 mg. Building on the transition to the new optimal pediatric ARV, DTG 10 mg, in Q2, GHSC-PSM delivered more than 486,000 bottles (\$2.1 million) of DTG 10 mg—the optimal pediatric ARV—to Angola, Burkina Faso, Burundi, Democratic Republic of the Congo (DRC), Mozambique, Nigeria, Tanzania, Togo, Uganda, Zambia, and Zimbabwe. These

deliveries will ensure that each country can initiate their DTG 10 mg transition in line with approved transition plans. For more information, see section B1: HIV/AIDS.

Actualizing multi-month dispensing. In Q2, GHSC-PSM processed \$45.7 million in one-off procurements for TLD 90 and 180 for nine countries; 7.2 percent of these procurements were processed and delivered during Q2 to respond to emergency needs for Burkina Faso (\$176,000), Nepal (\$575,000), and Ukraine (\$2.5 million). Also, 48 percent of these orders were processed under D-term Incoterms.

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

Expanding the ARVs Delivered at Place (DAP program). GHSC-PSM delivered \$8.7 million in orders under D-Incoterms in Q2 (27 percent of ARV direct-drop spend to date -exceeding GHSC-PSM's goal of 25 percent) and processed \$32.4 million in orders.

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

Implementing viral load awards. Preliminary end-of-year data analysis shows that in Q2, GHSC-PSM and designated non-project buyers (e.g., Global Fund, Ministries of Health, and national procurement agencies) delivered 1.63 million VL/EID tests and that the project achieved approximately \$4.28 million in savings under the terms of global service-level agreements with the three VL/EID manufacturers. For more information, see section B1: HIV/AIDS.

Modernizing the supply chain for sustainability and risk reduction. GHSC-PSM works with countries to modernize their supply chain systems to increase efficiencies, reduce costs, and minimize risks. In Q1 GHSC-PSM published the Network Approach to Laboratory Services, which is a new approach to optimizing lab services, but more importantly, provides examples and lessons learned from different countries that have begun implementing this approach. GHSC-PSM also began exploring other vendor-managed solutions together with USAID and the global supplier base.

To date, GHSC-PSM procured **over \$1 billion in malaria medicines and commodities for 30 countries.**

This includes treatment for **18.8 million infections in Q2 and 426.7 million to date.**

In Q2, GHSC-PSM **delivered 13.5 million LLINs to six countries.**

Malaria

GHSC-PSM supports USAID and PMI programs through the procurement, management, and delivery of high-quality, safe, and effective malaria commodities. The project partners with NMCPs to improve strategic planning, logistics, data analytics, and capacity building while providing global leadership in supply, demand, financing, and product development. GHSC-PSM is working to align priorities across the project's malaria work with PMI's strategy for 2021–2026, entitled [*End Malaria Faster*](#).

Achieving on-time delivery. GHSC-PSM achieved consistently high OTD performance for malaria drugs and commodities in Q2—81 percent (68 percent COVID-impacted) for the quarter. For more information, see section B2: Malaria.

Focusing on sourcing, procurement strategies, and supplier engagement. In Q2, GHSC-PSM held a Commodity Council meeting in advance of releasing the FY 2023 artemisinin-based pharmaceutical tender given ongoing volatility in the artemisinin market. The project is contributing to stakeholder discussions on the need for a sustainable long-term solution to stabilize prices and ensure secure supply for this key starting material.

GHSC-PSM also finalized FY 2022 fulfillment of sulfadoxine pyrimethamine-amodiaquine (SPAQ) for seasonal malaria chemoprevention (SMC) orders in Q2, using stockpile quantities held at the RDC. For more information, see section B2: Malaria.

Providing quality assurance (QA). GHSC-PSM facilitates robust quality and quality management systems of products procured by the project. In Q2, GHSC-PSM completed three out-of-specification (OOS) investigations and used these investigations to discuss quality assurance approaches and best practices with global donors. In Q2, GHSC-PSM coordinated with the Rwanda government, suppliers and PMI to establish an agreement that accommodates all parties' quality requirements and methodologies. Consequently, the project managed the successful delivery of LLINs to Rwanda to be used in their countrywide distribution to support the fight against malaria in Rwanda. For more information, see section B2: Malaria.

Prioritizing and redirecting orders. GHSC-PSM works closely with USAID to prioritize orders based on need and conducts commodity order transfers to improve stock status. Some examples from Q2 include: creation of an Artesunate Injectable Fulfillment Plan upon conclusion of an OOS investigation to redirect 720,000 kits of artesunate injectable 60mg production from Mali to service Cameroon, Ethiopia, Guinea, Kenya, Thailand, and Uganda. Cameroon agreed to receive disbursement from the ALU emergency stockpile to mitigate a stockout. Mali and Nigeria agreed to receive SPAQ from the RDC stockpile to meet SMC campaign dates. For more information, see section B2: Malaria.

Delivering LLINs. In Q2, many countries continued to deliver LLINs for routine distribution. Other countries planned, launched, or continued large-scale LLIN distribution campaigns as a critical malaria prevention strategy. The project supported the delivery of nearly 13.5 million LLINs to protect almost 27.1 million people in six countries—Benin, Cameroon, Democratic Republic of the Congo (DRC), Kenya, Nigeria, and Tanzania.

Stockout Reduction Initiative. In Q2, GHSC-PSM developed an Excel-based budget template for investment planning (stage 4). The project tested the template with Liberia, Mozambique, and Zambia. Their feedback will inform finalization of the template in time for FY 2023 work planning and should inform future Malaria Operational Plan (MOP) planning.

Coordination with Against Malaria Foundation (AMF). GHSC-PSM entered into memorandums of understanding with AMF and PMI in support of LLIN mass distribution campaigns in Nigeria and Guinea. GHSC-PSM completed work under this MOU in Nigeria in Q2. (For more information see section C3. Global Collaboration.)

GHSC-PSM has delivered enough contraceptives that, when combined with proper counseling and correct use, are estimated to **provide 99.6 million couple-years of protection to date.**

This includes **5.08 million couple-years of protection in Q2.**

FP/RH

In Q2, GHSC-PSM worked with activity leads and country offices through virtual workshops or other strategies to ensure program continuity despite COVID-19 restrictions. Despite persistent and severe global supply shortages of injectable and implantable contraceptives, in Q2, GHSC-PSM maximized its strategic sourcing strategy to reduce supply risk and ensure countries had access to a continuous and reliable supply of FP/RH commodities. To mitigate the impact of COVID-19, the project continued to leverage stock at the RDCs and regularly analyze allocation of production to ensure countries receive adequate supply to avoid any stockouts. GHSC-PSM focuses on contraceptive security and the introduction of new products and innovations, including greener and harmonized packaging with the United Nations Population Fund (UNFPA). Through our support to the Global Family Planning Visibility and Analytics Network (VAN), the project provides market analysis to provide a better understanding of government priorities and to improve decision making around procurement needs. In Q2, GHSC-PSM continued to focus on enabling the project to realize the benefits of the tool by supporting and onboarding users; validating new features, processes, and data integrated with the VAN; and engaging in strategy sessions for use of the VAN in FY 2022.

On-time delivery. GHSC-PSM delivered 95 percent (95 percent COVID-impacted) of FP/RH commodities on time in Q2. For more information, see section B3: Family Planning and Reproductive Health.

Collaboration with global stakeholders. The project supports global partners and raises awareness of the U.S. Government's FP/RH priorities and programs. It supported USAID's leadership in contraceptive security through various activities. In Q2, GHSC-PSM:

- Submitted 11 abstracts in advance of the International Conference on Family Planning (ICFP) in November 2022. Field offices in Angola, Ghana, Liberia, Pakistan, and Rwanda prepared seven of them.

One of the abstracts, "Modeling the Case for Hormonal Contraceptive Manufacturing in Sub-Saharan Africa," highlights a 2021 modeling exercise conducted by IQVIA with funding from GHSC-PSM to build an investment case for high-quality manufacturing of modern contraceptives in sub-Saharan Africa).

- Hosted a webinar on the innovative stock-alert Drugs out of Range (DOOR) system and the pilot implemented in Angola. The mixed-methods evaluation focused on the effectiveness, viability, and acceptability of the system for three contraceptive commodities and one antimalarial product.

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

In Q2, the project used maternal and child health funds to **train 499 health and supply chain workers on proper oxytocin management in Nepal** and **53 district focal persons** who will go on to train health facility staff on **nutrition commodity management and use of GhiLMIS in Ghana**.

MNCH

GHSC-PSM works to prevent child and maternal deaths by increasing access to quality-assured MNCH medicines and commodities, strengthening systems to ensure long-term financing and availability of MNCH commodities, and providing global technical leadership in these areas. In Q2 the project focused on ensuring countries have the information and tools they need to avail and ensure the quality of commodities used to treat and prevent postpartum hemorrhage (PPH), a leading cause of pregnancy-related death, essential medicines, and commodities used to treat childhood diarrhea, pneumonia, and possible serious bacterial infection (PSBI), leading causes of child death. GHSC-PSM also worked to strengthen the domestic wholesaler operating environment for MNCH commodities and provided significant MNCH commodity data collection and logistics management information system (LMIS) support to help ensure sustainable systems are in place to improve child health and pregnancy outcomes.

Procuring and delivering commodities. Since the start of the project, GHSC-PSM has delivered over \$23.9 million in MNCH drugs and commodities. Over the course of Q2, GHSC-PSM supported three countries³ in procuring priority newborn and child health products and started the process for a new large order of essential medicines for DRC. For more information, see section B4: Maternal, Newborn and Child Health.

On-time delivery. GHSC-PSM delivered 100 percent (50 percent COVID-impacted) of MCH commodities on time in Q2.

Providing international MNCH supply chain leadership and guidance. In Q2, GHSC-PSM continued a series of global technical discussions on availing commodities to treat childhood pneumonia and PSBI. GHSC-PSM also conducted research and surveyed project-supported countries to inform the next phase of this series: work sessions, which will be held in May 2022. For more information, see section B4: Maternal, Newborn and Child Health.

Strengthening wholesalers' abilities to avail quality MNCH commodities. The project concluded its planned work to strengthen organizational capacity for the Zambian Pharmaceutical Business Forum (ZPBF) in Q2, and will now help ZPBF monitor progress as it implements the work plan and organizational objectives developed during the project-led workshops held in Q1. For more information, see section B4: Maternal, Newborn, and Child Health.

Supporting systems for data-informed MNCH decision making. The project user-tested QAT, its new forecasting and supply planning tool, in Q2, readying it for use by four countries that receive MNCH support. The project also assisted eight countries to complete the end-use verification (EUV)

³ GHSC-PSM procured MNCH commodities for three countries in Q2 FY2022: DRC, Nigeria, and Rwanda.

survey and prepared all MNCH-supported countries to implement EUV changes coming in Q3. Finally, the project refactored a Zambian data analytics tool in Q2 so that it can be used more widely by other countries to track and make decisions around MNCH commodity consumption anomalies. For more information, see section B4: Maternal, Newborn, and Child Health.

Improving management of PPH commodities. GHSC-PSM worked on global and country-specific initiatives in Q2 to improve the availability of commodities for treating and preventing PPH. GHSC-PSM wrote a white paper that presents PPH commodity updates, supply chain resources, and global and country lessons learned. The project also employed supportive supervision to assess and provide support around PPH commodity management at warehouses, pharmacies, and maternity wards in 28 districts in Malawi. For more information, see section B4: Maternal, Newborn, and Child Health.

Working with countries to improve adherence to commodity quality standards and enhance in-country coordination and collaboration. The project facilitated MNCH supply chain successes through technical assistance to 14 countries in Q2. GHSC-PSM followed up on MNCH supply chain assessments in Nepal with a major oxytocin management training for local-level government and birthing center staff. In Ghana, the project used its commodity management expertise and MNCH funds to conduct a training of trainers in partnership with the USAID Advancing Nutrition project. 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. GHSC-PSM manages 33 country or regional offices, supplemented by headquarters-based experts; these offices provide wide-ranging technical assistance to strengthen national health supply chains.

GHSC-PSM published in February the "Key Considerations for Traceability Models Quick Guide," a resource for countries contemplating the implementation of centralized approaches for pharmaceutical verification, tracking, and tracing. This resource is now included in the GHSC-PSM Traceability Planning Framework Toolkit.

To support country-owned forecasting and supply planning, the project completed one of two user acceptance testing workshops, a key milestone in the development of the upcoming QAT forecasting module (module 2) to be launched by Q3 FY 2022.

GHSC-PSM revised the Instrument Procurement Questionnaire⁴ that includes key questions country teams—including those not supported by GHSC-PSM—must answer to demonstrate need and preparation to purchase laboratory equipment. The revisions clarify expectations for completion and reduce the need for follow-up questions. Early engagement with countries on this questionnaire is especially important as Roche, one of the instrument vendors, is retiring their Cobas Ampliprep/Cobas TaqMan instruments, and countries must replace them in the next year.

⁴ See Instrument Procurement Justification Form | USAID Global Health Supply Chain Program (ghsupplychain.org)

In February 2022, relaunched the Introduction to Supply Chain Management course to USAID personnel through a mix of synchronous and asynchronous learning.

Several years of investment in strengthening supply chain systems are yielding important innovations and positive results on many fronts. Examples of project activities include:

- In **Cameroon**, a new dynamic online dashboard tool serves as a main source of information for the monthly HIV and malaria inventory for the Department of Pharmacy, Medicine, and Laboratory (DPML), which serves as the tool administrator. First used by DPM in January 2022, this dashboard allowed users to visualize inventory data in real-time (completeness, stock status, etc.) and provided analysis for decision making.
- In **Ethiopia**, the use of a new Excel-based TB lab quantification tool has reduced the quantification of TB lab commodities from one or two months to two to three days. The introduction of this new tool—first tested in November 2021—aims to reduce wastage and frequent stockouts of TB lab commodities.
- In **Nigeria**, the Bauchi State government managed the last mile distribution (LMD) of essential health commodities to 525 public health facilities in March 2022, using the project's supply chain model. The project supported the state in facilitating a bidder's conference for third-party logistics companies and assisted the bid evaluation process in preparation for the state-led LMD.
- In **Uganda**, GHSC-PSM generated interactive advanced analytics maps that can be used in web browsers and off-line for the MOH to rapidly identify at-risk areas for discussion and action. With this new tool—introduced through training of users in the previous quarter—the MOH, CDC, USAID and other stakeholders can interact with available data to better understand and redesign the diagnostic network.

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

COVID-19 Response Activities

Since 2020, GHSC has undertaken various COVID activities. These include:

- Procuring medicines, medical equipment, and supplies.
- Procuring respiratory and cardiac supplies, intensive care unit (ICU) beds, and patient monitors for Italy.
- Providing supplies for ad hoc ventilator support.
- Procuring oxygen-related equipment and providing technical assistance.
- Procuring emergency supplies of a limited range of critical COVID-19 commodities for countries through the newly established Rapid Response Mechanism.

In Q2, GHSC-PSM made significant progress in procuring oxygen commodities and continuing clinical and non-clinical technical assistance for oxygen work in seven countries, ranging from local delivery of products to training facility staff to use specific oxygen commodities. This work strengthening the oxygen sector is part of USAID's greater response to the pandemic and is vital, as oxygen support quickly became the primary clinical intervention for patients suffering from COVID-19. GHSC-PSM also added oxygen products—such as oxygen analyzers, regulators, and nose catheters—and cold chain equipment—such as cold boxes, temperature monitors, and coolant packs—to its COVID-19 commodity offerings to countries that have been approved for ARPA funds. (For more information, see Annex A. COVID-19 Response.)

In Q2, GHSC-PSM **installed and commissioned one containerized pressure swing absorption (PSA) plant in Mozambique** and delivered and installed three PSA plants in Tajikistan. By the end of Q2, GHSC-PSM had **delivered 23 order lines of oxygen consumables and durables to Ghana, Haiti, Mozambique, and Tajikistan and issued a total of 609,756 cubic feet of oxygen to 10 medical facilities in Haiti.**

For more information, see Annex A. COVID-19 Response.

Introduction

A1. Background

GHSC-PSM 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.
- The U.S. Agency for International Development (USAID)'s Family Planning and Reproductive Health (FP/RH) program to ensure that key reproductive-health commodities are available for safe and reliable voluntary family planning.
- USAID's maternal and child health (MCH⁵) program to prevent child and maternal deaths.
- Other public health threats as they emerge, with support for Zika and 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 62 countries over the life of the project (see Exhibit 7 below).

A2. About This Report

We are pleased to present our performance report for Q2 FY 2022 (January 1, 2022, through March 31, 2022). 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 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.
- Annex A describes the activities GHSC-PSM has undertaken with **COVID-19 funding** to respond to the pandemic.

⁵ 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 (MNCH) when discussing the technical content because we have a particular emphasis on supporting newborns.

- Annex B provides **performance indicators** for January 1, 2022, through March 31, 2022 (annual indicators).

Given the size and complexity of GHSC-PSM, this report summarizes our primary efforts and achievements in Q2 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)

	Proc.	TA		Proc.	TA
AFRICA:			ASIA:		
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	●		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	●	●	LATIN AMERICA & CARIBBEAN:		
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	●	
EUROPE & EURASIA:			Republic of Suriname	●	
Republic of Kazakhstan	●		Republic of Trinidad and Tobago	●	
Kyrgyz Republic	●		MIDDLE EAST:		
Republic of Tajikistan	●		Republic of Yemen	●	
Ukraine	●				

PROGRESS BY HEALTH AREA

This section summarizes GHSC-PSM's support in Q2 for HIV/AIDS, malaria, FP/RH, maternal, newborn and child health (MNCH) and other public health threats.

B1. HIV/AIDS



GHSC-PSM has delivered enough antiretrovirals (ARVs) to provide nearly **17.8 million patient-years of HIV treatment over the life of the project**, including nearly **1.3 million patient-years of treatment in Q2**.



To date, GHSC-PSM has delivered over **68.7 million bottles of tenofovir/lamivudine/dolutegravir (TLD)** to 30 countries, which would provide over **12.8 million patient years of treatment**.

Multi-month dispensing packages of TLD first-line treatment accounted for **100 percent of all quantities delivered** in Q2.



In Q2, **a total of 27 countries procured HIV/AIDS medicines and commodities**.⁶

28 countries⁷ are receiving health supply chain systems strengthening with HIV/AIDS funding in FY 2022.



Thanks to multi-month dispensing (MMD), patients likely saved **over 10.9 million trips** to the pharmacy in Q2 and **more than 85.5 million over the life of the project, saving patients time and money**.



As of Q2 2022, GHSC-PSM delivered nearly **43.5 million viral load tests** to **26 countries** to support testing scale-up, while viral-load and early infant diagnosis contracts have generated an estimated **\$21.5 million in savings**.

⁶ GHSC-PSM procured HIV/AIDS commodities for the following countries: AFRICA: Angola, Benin, Burkina Faso, Burundi, Cameroon, DRC, Côte d'Ivoire, Eswatini Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nepal, Nigeria, Rwanda, Tanzania, Togo, Uganda, Zambia, Zimbabwe; CARIBBEAN: Haiti; CENTRAL/SOUTH AMERICA: Colombia, El Salvador, Guatemala; EUROPE: Ukraine.

⁷ GHSC-PSM is providing HIV-funded technical assistance support to the following countries: AFRICA: Angola, Botswana, Burkina Faso, Burundi, Cameroon, Eswatini Ethiopia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mozambique, Namibia, Nepal, Nigeria, Rwanda, Sierra Leone, Tanzania, Uganda, Zambia, Zimbabwe; CARIBBEAN: Haiti; CENTRAL/SOUTH AMERICA: El Salvador, Guatemala; Honduras, Panama EUROPE: Ukraine.

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), 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 HIV infected people know their status, **95** percent of these are on HIV treatment, and **95** percent of these have no detectable virus.

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

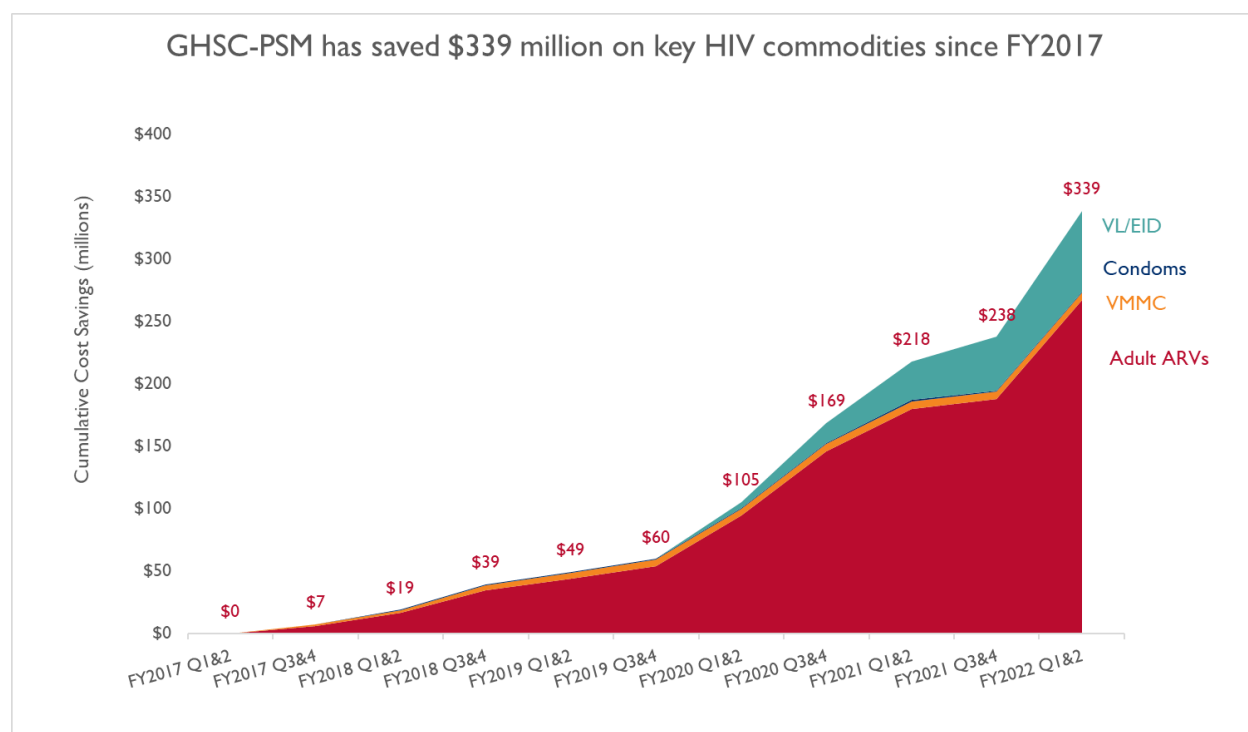
Procurement

GHSC-PSM has procured more than \$2.97 billion in HIV commodities over the life of the project.

Savings from strategic sourcing of HIV commodities

GHSC-PSM's strategic sourcing activities generated significant cost savings for PEPFAR and the countries and people served by its HIV programs. Over the life of the project, GHSC-PSM has achieved nearly \$339 million in commodity cost savings on key products, most notably adult ARVs and viral load and early infant diagnosis (VL/EID) products. Most of these savings have come from TLD. Strategic sourcing and changing market dynamics for TLD have yielded \$231 million in cost savings on this product, including nearly \$80 million in the first half of FY2022 alone. Since the first TLD procurements were completed in FY 2018, the supplier base for TLD has grown from two suppliers to seven, a much more competitive market. The project has sought to encourage visibility and predictability through its award strategy, which has helped maintain consistent demand for multiple suppliers. Alongside this strategy, as well as process improvements and efficiencies at the manufacturers, the project has seen a 30 percent reduction in the weighted average cost of a TLD tablet since FY 2018.

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



OTD and OTIF

GHSC-PSM delivered \$339 million in HIV commodities to countries in FY 2022 Q2. Timeliness of GHSC-PSM deliveries remained consistently strong for standard on-time delivery (OTD) over the reporting period, as shown in Exhibit 8. In Q2, OTD was at 89 percent for HIV (72 percent for COVID-19 impact). GHSC-PSM's on-time in-full (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 89 percent in Q2 FY 2022. See Annex A for further details.

Exhibit 6. HIV Commodities, OTD

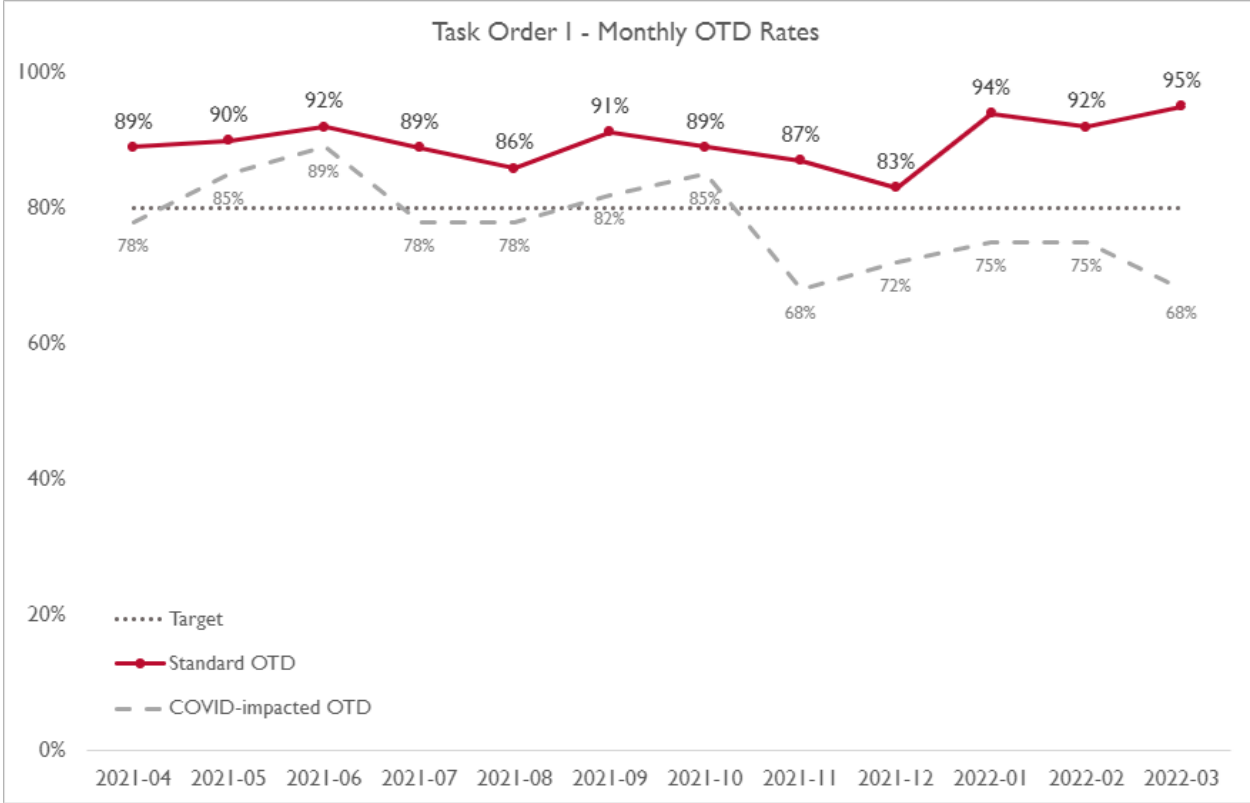
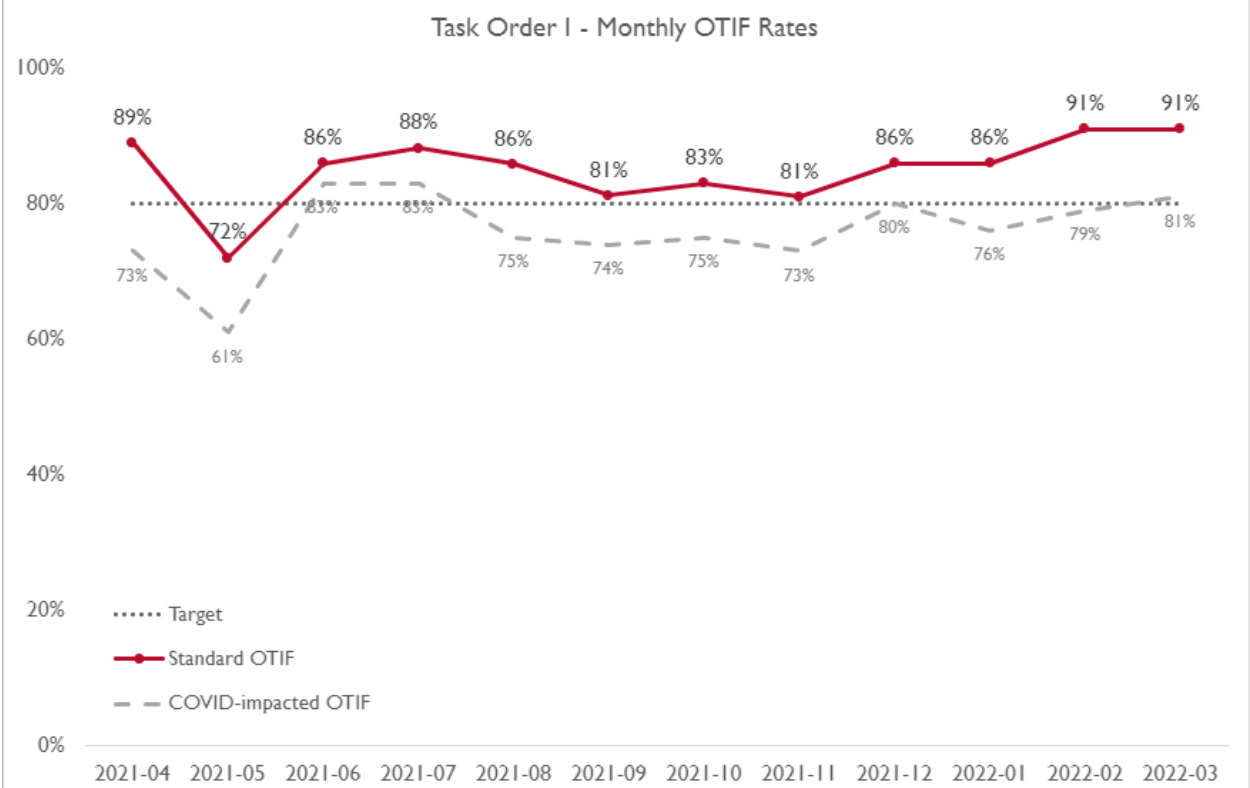


Exhibit 7. HIV Commodities, OTIF



Deliveries

Over the life of the project, GHSC-PSM has delivered nearly \$2.96 billion in HIV commodities to countries. As previously mentioned, the timeliness of GHSC-PSM HIV deliveries remained consistently strong despite the high degree of uncertainty, extreme volatility, and freight costs in global supply chains caused by the pandemic. These challenges impacted a large number of orders in Q4 FY 2021, as shipping lanes faced backlogs and unloading of containers at ports saw delays.

Support for 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 \$4.2 million worth—more than 1 million PrEP bottles—to eight countries: Burkina Faso, Dominican Republic, Mozambique, Panama, Philippines, Togo, Trinidad and Tobago, and Zambia. This is the fifth consecutive quarter with deliveries of more than one million packs, indicating progress in the PrEP adoption campaign in PEPFAR-supported countries. By regularly sharing demand forecasts with manufacturers, GHSC-PSM helps align manufacturing capacity to meet the demand.

GHSC-PSM analyzes PrEP commodity deliveries and the impact of in-country scale-up on the PrEP program quarterly. The analysis is derived from qualitative and quantitative data from 24 countries to monitor stock levels and scale-up progress. GHSC-PSM's communication with countries assists them in adapting to the dynamics of their PrEP scaleup programs by advancing or delaying shipments when necessary.

In Q2, the project resolved stockouts of TL and TE in the Dominican Republic by expediting the delivery of emergency orders. GHSC-PSM also expedited delivery of TLD to Benin, resolving a stock-out while mitigating a PrEP programming risk, as TE imported for PrEP was administered to PLHIV due to unavailability of TLD. Also, GHSC-PSM delayed shipments to Haiti and Ghana due to lower than anticipated PrEP uptake.

Condoms

Correct and consistent use of condoms and lubricants significantly reduces the risk of transmission of HIV. In Q2, GHSC-PSM delivered condoms (male and female) and lubricants to 18 countries. The project increased reserved stock in the Dubai regional distribution center (RDC) by 5 million pieces to ensure responsiveness to emergency requests. This proved invaluable as the project can tap into this reserve to source emergency deliveries from the RDC for Benin and Haiti.

GHSC-PSM delivered an emergency order of 5,980 cases (403 cases from the RDC stock and 5,577 cases from fresh production) of plain-no logo and color/scented male condoms to Botswana. Sierra Leone processed its first condom order through the GHSC-PSM program, which required remote training for the country team on the procurement process. The project pre-positioned custom-branded male condoms for Afghanistan at the Dubai RDC. This will allow GHSC-PSM to respond quickly when corridors open in Afghanistan for product importation.

Voluntary medical male circumcision (VMMC) kits

Male circumcision is cost-effective and reduces female to male sexual transmission of HIV by 60 percent.⁸ GHSC-PSM provides VMMC kits and other supplies to PEPFAR-supported countries. To help with Country Operational Plan (COP) FY 2022 development, in Q2, GHSC-PSM drafted commodity two-pagers for USAID and VMMC implementing partners. The two-pagers included information on updated VMMC kits, ShangRing device, local anesthetic agent pricing, and lead times.

In Q2 GHSC-PSM completed the VMMC strategy price refresh, which included awarding fixed-price contracts to VMMC kit suppliers. Moving forward, orders will be at the new fixed prices.

Essential medicines

Among people living with advanced HIV, the cryptococcal disease is one of the most important opportunistic infections and is a major contributor to illness, disability, and mortality. Recent guidelines from the World Health Organization (WHO) recommend amphotericin B in combination with flucytosine for induction treatment of cryptococcal disease. Country adoption of these guidelines is critical to save lives, but access to these medications remains scarce, especially in low- and middle-income countries. In Q2, GHSC-PSM finalized an agreement to procure flucytosine directly from the manufacturer, offering global access pricing. The project is negotiating a contract to procure amphotericin B liposomal and refreshed pricing for the majority of essential medicines procured through approved wholesalers.

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.

Three months of weekly high-dose isoniazid and rifapentine (3HP). GHSC-PSM delivered orders of rifapentine/isoniazid 300 mg/300 mg fixed-dose combination tablets to nine countries in Q2: Burundi, Democratic Republic of the Congo (DRC), Ethiopia, Eswatini, Lesotho, Mozambique, Rwanda, Uganda, Zambia and Zimbabwe⁹ and rifapentine 150 mg tablets to Burundi and Haiti.¹⁰

By the end of Q2, the ARV/3HP Procurement Working Group (APWG) confirmed an updated production allocation for March and April 2022 from the sole-source supplier of this commodity, which enabled GHSC-PSM to fulfill PEPFAR's FY 2022 demand. GHSC-PSM and APWG confirmed production allocation for orders in May and June. GHSC-PSM routinely analyzes TPT shipments and country stock projections to improve visibility into the transition to, and scale-up of, 3HP for TPT-supported countries. With the monthly monitoring, the project adjusted shipment schedules to accommodate slower transitions from INH300 to 3HP (Lesotho, Mozambique, and Namibia). In addition to identifying slow transitions, GHSC-PSM coordinated a donation of INH300 from Lesotho

⁸ [USAID 2022 Voluntary Medical Male Circumcision Fact Sheet](#)

⁹ Burundi received 4,500, Ethiopia 23,148, Kenya 37,548, Mozambique 38,067, Uganda 30,834, Zambia 44,400 and Zimbabwe 45,705 packs of rifapentine/isoniazid 300 mg/300 mg film-coated 3x12 blister pack tablets.

¹⁰ Burundi received 930, Haiti received 5400 packs of Rifapentine 150 mg Film-Coated Tablet, 8 x 3 Blister Pack Tablets.

to Zambia and Haiti, facilitating a faster transition to 3HP and avoiding waste. In Ethiopia, GHSC-PSM found the patient information leaflet contains outdated information that prevented scale-up. To resolve the issues, GHSC-PSM, the APWG, and USAID followed up with the manufacturer, and expedited the shipment to initiate 3HP scale-up. In Q2, GHSC-PSM explored ways to use the Quantification Analytics Tool (QAT) data to better monitor country stock of 3HP products.

Isoniazid preventive therapy (IPT).

Although most GHSC-PSM countries are transitioning to 3HP in FY 2022, the project continues to support any countries that need assistance in implementing IPT with the procurement of isoniazid.

GHSC-PSM delivered orders of isoniazid tablets to Angola, Burundi, DRC, Eswatini, Nigeria, Uganda, and Zambia in Q2.¹¹

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 better management of HIV-RTK orders and deliveries through regional- and central-level stock data collection using the HIV/AIDS Data Visibility Dashboard. 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. Using this methodology, the project identified six stock-out risks this quarter and was able to resolve them through emergency orders, expedited shipment requests, and stock transfers.

Supporting the Second 95: Treatment

Increased Private Sector Involvement in ARV Delivery

GHSC-PSM updates and expands its D-Term program. The project's FY 2022 goal is to have suppliers deliver at least 25 percent of ARV direct drop shipments. In Q2, the project hosted webinars to review the D-TERM program for staff from 10 participating GHSC-PSM country offices and seven participating ARV suppliers. Participants reviewed country-specific responsibility assignment matrices (RACI charts) and supply chain process maps to clarify the roles and responsibilities of all supply chain actors. Participants aligned communication protocols, compliance with the United States Maritime Administration's (MARAD) US Flag cargo regulations, and DDP troubleshooting guidelines.

GHSC-PSM delivered a total of \$8.7 million in commodities under D-Incoterms in Q2 (27 percent of ARV direct-drop spend to date) and processed \$32.4 million in orders. In Q2 GHSC-PSM began work on developing a PowerBI dashboard to actively monitor the DAP program.

¹¹ Angola received 5619, DRC 1234, Nigeria 50000, and Zambia 23,542 packs of isoniazid 300 mg 24x28 blister pack tablets. Angola received 4157, Burundi 685, DRC 1500, Uganda 25,361 packs of isoniazid 100mg 10x10 blister pack tablets. Eswatini received 5040 packs of Cotrimoxazole/Isoniazid/Pyridoxine (CTX/INH/B6) 960/300/25 mg Tablet, 30 tablets.

Supplying TLD

To date, the project has delivered **68.7 million bottles of TLD** to **30 countries**.

This is enough to provide almost **12.9 million patient-years of TLD treatment**.

As of Q2, GHSC-PSM has delivered over **38.9 million bottles of TLD 90** 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. In Q2, GHSC-PSM processed \$45.7 million in one-off procurements for TLD 90 and 180 for nine countries; 7.2 percent of these procurements were processed and delivered during Q2 to respond to emergency needs for Burkina Faso (\$176,000), Nepal (\$575,000), and Ukraine (\$2.5 million). Also, 48 percent of these orders were processed under D-term Incoterms.

The project shares data and facilitates technical meetings to coordinate with key stakeholders on TLD uptake. GHSC-PSM aligned its product catalog ARVs with the PEPFAR formulary to promote optimal ARV regimen ordering. The project submits weekly reports to USAID outlining second-line or suboptimal products ordered by partner countries so that both parties can engage country counterparts to determine if a better product is available.

GHSC-PSM reviews and compiles monthly ARV inventory data from 31 central and 80 regional warehouses in 22 countries through the First-Line ARV Reporting and Evaluation (FLARE) reports. These monthly reports monitor national (not PEPFAR-only) inventories of HIV commodities. The FLARE enables GHSC-PSM and USAID to minimize the remnants of the less-effective, older first-line ARV regimens (legacy ARVs). According to the FLARE data, global issues of lamivudine/zidovudine/nevirapine, TLE600, and TLE400 decreased by 100 percent, 96 percent, and 74 percent, respectively. The project accesses warehouse-level stock on all HIV commodities in 22 countries and at the service delivery point level in 14 countries using the Data Visibility Dashboard.

Pediatric ARVs

In Q2, GHSC-PSM delivered more than 486,000 bottles (\$2.1 million) of dolutegravir (DTG) 10 mg—the optimal pediatric ARV—to Angola, Burkina Faso, Burundi, Congo DRC, Mozambique, Nigeria, Tanzania, Togo, Uganda, Zambia, and Zimbabwe. These deliveries will help each country to initiate DTG 10 mg transition in line with the approved transition plans. GHSC-PSM analyzes orders and supply plan data monthly to increase USAID and stakeholder visibility into the pace and progress of country transitions. The project monitors the transition, which showed an increased amount of DTG distributed in Q2 compared to Q1.

GHSC-PSM tracks overall demand for pediatric ARVs. The project consolidated demand for zidovudine oral solution for Eswatini, Kenya, and Namibia from one supplier to another to ensure orders aligned with minimum batch levels and to reduce lead times. The project converted existing orders of abacavir/lamivudine 120/60 for Angola, DRC, and Mozambique from 60-count bottles to

30-count bottles to simplify co-dispensing with DTG 10 mg and align with expected revisions to COP guidance.

Supporting the Third 95: Viral Load Testing

Implementing viral load awards

Preliminary data analysis shows that in Q2, GHSC-PSM and designated non-project buyers (e.g., Global Fund, Ministries of Health, and national procurement agencies) delivered 1.63 million VL/EID tests and that the project saved approximately \$4.28 million, compared to the pre-global request for proposal (RFP) prices) under the terms of global service-level agreements with the three VL/EID manufacturers. The total spent on these orders was approximately \$20.7 million. GHSC-PSM ordered an additional 7.4 million VL/EID tests for delivery in the calendar year 2022, increasing the delivered volume to 9.06 million tests, savings to \$25.3 million, and spending to \$104 million.

In Q2, GHSC-PSM, USAID, and CDC launched the Wave-2 RFP process for VL/EID scale-up. The Wave-2 RFP is a global effort to build on the lessons learned and successes of the first global RFP of 2018. It focuses on services for over 20 additional PEPFAR-supported (“Wave-2”) countries to establish all-inclusive pricing, creating formal service-level agreements, and enabling expanded instrument connectivity. For Wave 2, GHSC-PSM and the global suppliers will focus on high-throughput instruments for VL/EID testing.

The project developed and tested the global VL dashboard in Q2. GHSC-PSM defined user groups and provided them with access based on their roles and responsibilities. The project enhanced the Anomaly Detection module of the dashboard to share data in a user-friendly format and is designing an order visualization user interface to provide information on VL/EID orders. The project is developing the data sources and analysis for the savings visualization.

GHSC-PSM enables the diagnostic instrument daily data feeds and the project began exploring additional uses for these data, for example, how this information can help the development of vendor- managed inventory (VMI) solutions in Mozambique and Nigeria. GHSC-PSM partnered with Arizona State University (ASU) to develop a model for site-level commodity forecasting and inventory replenishment through machine learning and optimization.

Procurement of viral load and laboratory supplies

Lab consumables such as pipettes and pipette tips, and consumables used for VL and COVID-19 tests are in short supply globally due to the pandemic while deliveries of VL/EID reagents and consumables remain impacted by COVID-19 as vendors struggle to meet demand and 3PLs struggle to identify appropriate flight availability.

In Q2, GHSC-PSM found that meeting country requirements for remaining shelf life, especially for some VL/EID reagents and consumables, was a challenge for manufacturers. As the reagents and consumables are used together, they are shipped together, and therefore all bundled products must wait for the last product of the requisition order to be available before shipment. This is especially challenging for countries requiring long waiver times, which negatively impacts shelf life upon delivery. GHSC-PSM is pursuing initiatives to address these problems.

GHSC-PSM reviews VL and EID tracer commodity shipments and stock projections monthly to monitor for stock-out risks and program impact. The output of this analysis improves visibility for GHSC-PSM and USAID to validate stock risks and support mitigation efforts. For example, the Cameroon analysis in Q2 indicated stock would become dangerously low by May; GHSC-PSM and USAID pulled the September order forward and stock is now scheduled for delivery in early May instead.

Data-driven lab optimization using Opti-Dx

Through historical procurement data, forecast data, instrument coverage, utilization rates, and global positioning system data, the [Opti-Dx web-based tool](#) calculates and demonstrates potential changes to the lab network, which can inform instrument selection and placement based on data. The lab optimization pilot using Opti-Dx started in Uganda and Burundi in Q1 and continued with the data collection and verification in Q2. For more information, see section C.2 Systems Strengthening Technical Assistance.

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 108 HIV medicines and commodities at the central and regional warehouse levels in 22 PEPFAR countries to identify stock imbalances across the globe. Data generated include monitoring commodity stock risks and the progress made toward specific initiatives, such as the success of the first-line ARV drawdown and transition to DTG-based regimens. These reports help mitigate imbalances and avoid rationing and waste by raising awareness, identifying opportunities to shift GHSC-PSM shipments, and supporting redistribution within a country.

In Q2, GHSC-PSM identified and reported 44 unique HIV commodity stockout risks across 18 countries. The most common causes of stockout risks were funding gaps (including unfunded shipments and delays in the release of funding) and the late delivery of shipments funded by other donors. Other causes included higher than anticipated consumption, due to commodity transitions and program rollouts, and government bottlenecks, such as delayed waivers, regulatory constraints, and treatment guideline updates. Most stock risks were mitigated due to active donor and supplier coordination and bilateral data sharing. At times, stock risks were mitigated by borrowing stock (redistributing facility stock and inter-warehouse transfers) and using alternative products where necessary. GHSC-PSM reported on 28 commodity risks resolved during the same period.

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. Also, potential future HIV commodity stock risks are presented in this forum, which has allowed 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, and VL/EID products.

Country support

The HIV/AIDS task order funds supply chain systems strengthening in 28 countries in FY 2022.

Immediately following the Russian invasion of Ukraine, GHSC-PSM undertook an emergency procurement of 209,600 90-tablet bottles of dolutegravir/lamivudine/tenofovir DF 50/300/300 mg tablet (TLD 90) funded by PEPFAR to compensate for orders placed by the Ministry of Health that manufacturers were no longer able to fulfill due to the outbreak of war. Within 12 hours of receiving the request from USAID, GHSC-PSM located the entire quantity of freshly manufactured product for immediate despatch. Due to the closure of Ukraine air space to commercial traffic, GHSC-PSM worked with partners in Poland to arrange for the TLD to be flown to Warsaw for delivery to Lviv. The entire quantity, comprising 112 pallets, was delivered to Ukraine in record time and helped ensure an uninterrupted supply of ARVs to PLHIV. The success of this high-profile/high-risk activity was due to the tremendous collaboration between the USAID/Ukraine Mission, 100% Life, the Ukrainian Center for Public Health, and multiple logistics partners. The project also sourced 10 additional ARVs valued at \$1.2 million in Q2 and staged nine for delivery in Q3, all being delivered direct to Lviv by GHSC-PSM's logistics partners.

GHSC-PSM also sourced and delivered 109,000 bottles of Nevirapine 10 mg/mL Suspension and Darunavir 600 from South Africa to **Kenya** in response to avert a stockout. GHSC-PSM also delivered a large order of 1,885,000 bottles of TLD to Kenya within 90 days of order placement. GHSC-PSM delivered another emergency order for six ARVs to **Trinidad and Tobago**. This delivery included three low-volume pediatric ARVs that are often challenging to source. A total 44,000 bottles of TLD were delivered to **Nepal** within eight weeks.

In **Botswana**, GHSC-PSM collaborated with Central Medical Stores to conduct monitoring and supportive supervisory visits to 25 high-volume ART clinics and hospitals and five district warehouses in nine health districts during the reporting period. Almost all patients at all the ART sites visited had been transitioned to optimized adult and pediatric dolutegravir-based ARV regimens, with appropriate fixed-dose combinations assigned to reduce the pill burden. In accordance with standardized criteria, all ART sites provided eligible patients with multi-month ARV dispensing. However, six-month MMD was administered only in a few exceptional cases. Most health facilities kept accurate and up-to-date inventory records and regularly submitted LMIS reports to the LMU.

The goal of these visits was to track the progress of adult ARV regimen transitions, pediatric ARV optimization, MMD implementation, and logistics data quality assessment, and collaboratively address any challenges, knowledge, and skill gaps that may be impeding ART programmatic goals.

The project completed the ARV forecasting and supply planning (FASP) annual exercise in **El Salvador** with the Ministry of Health HIV Program in January 2022. The main results were to maintain 95 percent of the patient cohort on TLD or DTG, to begin introducing DTG pediatric ARVs for 2023, and to continue monitoring changes and progress for the 5 percent of patients who are not using TLD or DTG, as well as possible changes in those using TLD or DTG. In March 2022, GHSC-PSM conducted the FASP exercise with the Salvadoran Social Security Institute (ISSS); in this case, the goals were to maintain at least the 96 percent of the patient cohort on TLD or DTG (with an increased number of patients in biotherapy lamivudine+dolutegravir) and to track changes in the 4

percent using other regimens. These are outstanding results in the TLD transition, and the challenge now is to monitor all related logistics variables to support ARV availability, including execution of the procurement plan.

GHSC-PSM implements diverse delivery models in El Salvador, collaborating with USAID implementing partners (IPs), such as the Pan American Social Marketing Organization (PASMO) and the Foundation for Food and Nutrition in Central America and Panama (FANCAP), to develop and present memorandums of understanding (MOUs) to Ministry of Health (MOH) authorities for PrEP and ART dispensing through the private sector. Currently, the MOUs covering inventory transfers between the government and private sector are reviewed by the MOH's legal unit. The project is working with USAID IPs to identify and propose solutions, as well as follow up to obtain approval of the MOUs.

In **Indonesia**, since 2017, GHSC-PSM has supported the National AIDS Programme (NAP) for the HIV forecasting and supply chain for 2022–2023. Early this year, GHSC-PSM helped develop the Antiretroviral Forecasting and Supply Planning Tool (ARVFAST), an application-based tool to simplify calculations and minimize human errors when quantifying commodity needs. Calculations are based on the patient's history, the stock availability, the number of commodities received, and estimated stocks that will expire. In Q2, GHSC-PSM facilitated a quantification workshop where the project shared guidance on how to use the ARVFAST and Non-ARVFAST tools with HIV program managers and pharmacists from 34 provinces. Overall, the application results were well received by participants. As a result, each province submitted its 2022–2023 HIV commodity supply plans based on calculations using these tools. By facilitating this event, GHSC-PSM is helping to ensure proper HIV commodity forecasting for HIV treatment.

B2. Malaria



Delivered enough artemisinin-based combination therapies (ACTs) to treat over **426.7 million infections over the life of the project**, including **18.8 million** in Q2.



23 countries are receiving health supply chain systems strengthening support with malaria funding in FY 2022.

A total of **26 countries procured** malaria medicines and commodities in Q2; 30 over the life of the project.



Delivered enough long-lasting insecticide-treated nets (LLINs) to provide **protection from malaria for over 27 million people in Q2 and 452.9 million people over the life of the project.**

The U.S. President's Malaria Initiative works with its global partners to scale up proven interventions and increase the capacity of health systems to move countries closer to their goals of eliminating malaria. Under the PMI-funded Malaria task order, GHSC-PSM supplies lifesaving prevention and treatment medicines for malaria, malaria rapid diagnostic tests (mRDTs), LLINs, and lab supplies. The project offers partner countries new approaches to strategic planning, logistics, data visibility, analytics, and capacity building in line with PMI strategies. GHSC-PSM provides technical guidance to strengthen the global supply, demand, financing, and introduction of new malaria medicines and commodities. The project provides continuous support to USAID Missions to ensure they have the necessary malaria commodity data, analysis, and forecasting models to directly inform decision-making for PMI's malaria operational plans. Since early 2020, GHSC-PSM has monitored sourcing, procurement, and delivery challenges related to COVID-19, informing mitigation efforts and providing technical support to in-country supply chains.

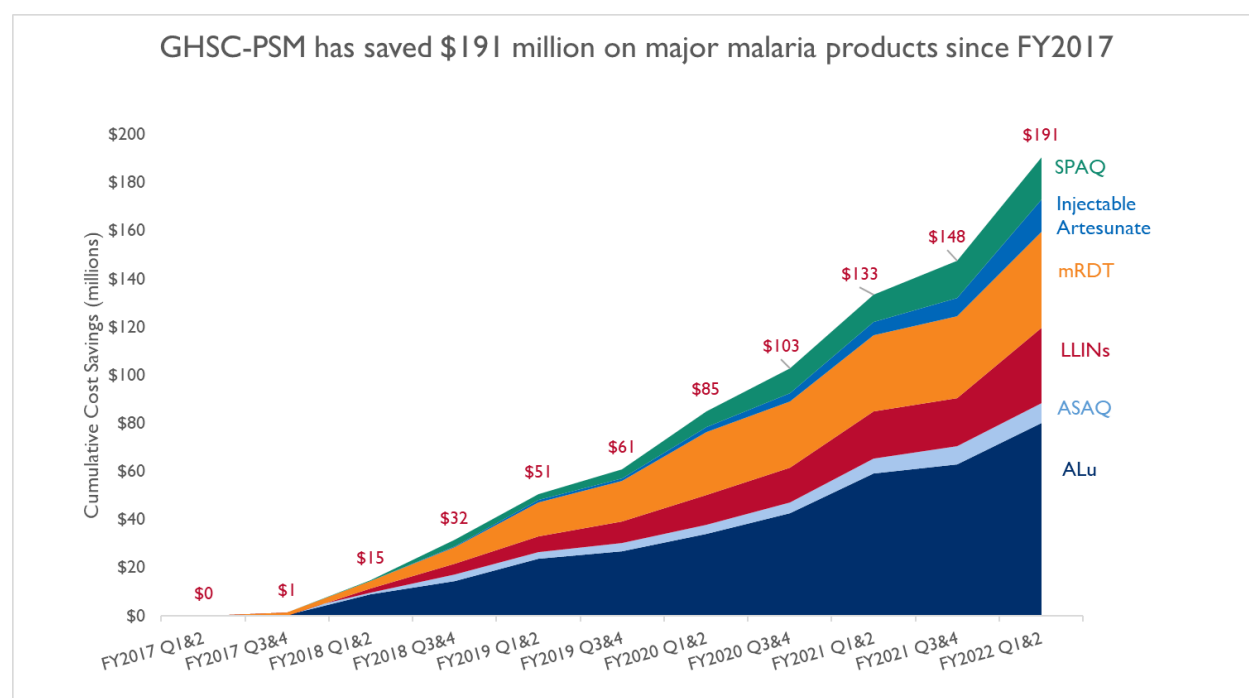
COST SAVINGS ON MALARIA COMMODITIES

Commodity cost savings on malaria products reached \$191 million dollars by the end of Q2, including \$42.8 million in the first half of FY 2022. The most significant contributor to this result was ACTs, where weighted average prices for dispersible ALu in particular were the lowest they have been since procurements began. High-volume procurements at these low prices helped yield considerable savings this period—nearly \$18 million on ALu alone. Despite these current savings gains, the project expects savings to slow in the future. Costs for artemisinin, a key ingredient in ACTs, have risen, and suppliers have begun to signal price increases in the coming periods.

Across the rest of the malaria portfolio, the project saw strong savings on LLINs and injectable artesunate this period. Additional suppliers have become eligible for procurement in the LLIN market, which has resulted in more competition and lower prices. As with ACTs, however, prices

for LLINs are expected to rise, as the market for oil, an essential input for polyester and polyethylene, has been severely impacted by global factors, most notably the war in Ukraine. A new entrant in the artesunate market has also encouraged competition and price improvements over the last two years. Rapid diagnostic tests and seasonal malaria chemoprevention (SMC) drugs also continued to yield steady savings this period.

Exhibit 8. Life-of-Project Savings on Malaria Commodities



Commodity sourcing, procurement, and delivery

GHSC-PSM assesses the market conditions of existing sources of critical commodities, including key starting materials (KSMs) and active pharmaceutical ingredients (APIs). The project uses these assessments to develop strategies that ensure that products are available and accessible, despite constrained supply and limited transit options due to COVID-19.

Commodity risk profiles

Commodity risk profiles capture the latest supplier and market intelligence regarding malaria commodities, including the status of supplier production and sourcing of APIs, KSMs, and packaging materials, as well as logistics constraints. Commodity risk profiles examine currently sourced order volumes by supplier and geographic region against COVID-19 impact to identify risks to future orders.

The malaria supply chain continued to experience disruptions in Q2, exacerbated by the Chinese New Year, the Beijing Olympics, and COVID-19. At the end of Q2 the city of Shanghai, China, experienced the worst COVID-19 outbreak since the beginning of the pandemic, residual impacts of which are anticipated to extend into the following months.

Ongoing volatility in the artemisinin market prompted GHSC-PSM to hold a Commodity Council meeting in advance of releasing the FY 2023 artemisinin-based pharmaceutical tender. Vegetal artemisinin prices increased 50 percent over the course of the past FY and semi-synthetic prices are up, due to various market conditions. The project is contributing to stakeholder discussions on the need for a sustainable long-term solution to stabilize prices and ensure secure supply for this KSM.

In the severe malaria portfolio, GHSC-PSM experienced a significant disruption of supply when a manufacturer received an out-of-specification (OOS) notice on injectable artesunate. This quality assurance (QA) incident impacted orders for 14 countries, four of which experienced a stockout in Q2. GHSC-PSM worked diligently with the supplier and other procurers on a solution that met the countries' demand.

Various countries cited outstanding interpretation of the Community Access to Rectal Artesunate for Malaria (CARAMAL) study (which questions the product's appropriateness in all clinical settings) as a concern in conversations before order placement. While one of the two rectal artesunate suppliers has indicated they will halt production in the near term, GHSC-PSM anticipates the remaining supplier has the ability to meet demand.

GHSC-PSM finalized FY 2022 fulfillment of sulfadoxine pyrimethamine-amodiaquine (SPAQ) for current FY22 SMC orders in Q2, using stockpile quantities held at the RDC.

Approval of the FY 2022 sulfadoxine/pyrimethamine (SP) strategy enabled the project to place country orders previously on hold, and the project anticipates remaining SP orders in coming months as countries complete their demand forecasts.

Surging demand for rapid tests in Q1 and Q2, in the wake of COVID-19 Delta and Omicron SARS-CoV-2 variants, prompted multiple malaria rapid diagnostic test (mRDT) suppliers to prioritize their COVID-19 diagnostics production lines. A combination of reallocation and countries accepting longer lead times in Q2 enabled the project to meet country orders, due to the temporary surge in demand for COVID-19 tests.

LLINs, the project's bulkiest and heaviest commodity, experienced residual shipping and container delays into Q2. One supplier's manufacturing plant located in southeast Asia communicated production delays, as total COVID-19 cases were on an upward trajectory in Thailand, shutting down its factory and impacting the movement of materials and workers. Despite the recent lockdown at the major shipping port of Shanghai and the need to shift country requested delivery dates, GHSC-PSM will be able to meet demand, albeit with longer lead times.

All malaria laboratory equipment suppliers reported increased lead times across commodities, noting manufacturing prioritization of COVID-19-related products, raw material transportation delays, shelf-life constraints, Chinese New Year, and logistics challenges in moving products to air and shipping ports.

Strategic sourcing

In Q2, GHSC-PSM strategic sourcing of malaria commodities focused on:

- **Finalizing a strategic tender for the provision of SP.** The project refined its SP sourcing strategy to address market conditions impacted by the pandemic, inflation, rising prices, and other factors contributing to supply shortages of KSMs for SP. The primary objectives of the new tender included enabling suppliers to offer sustainable pricing, reflective of the current market conditions, and highlighting the importance of a reliable, ongoing supply of this critical commodity. In Q2, the project finalized its evaluation and subsequent target volume allocations to meet remaining FY 2022 demand. In addition to its primary objectives, the tender yielded the benefit of expanding the eligible supply base for SP while also providing the opportunity for greater geographical diversity.
- **Developing sourcing strategy for artemisinin-based pharmaceuticals.** In preparation for FY 2023 procurements, the project focused on finalizing its strategic sourcing approach for malaria treatments using artemisinin. The FY 2022 market for this KSM has been volatile due to multiple factors. As a result, a focus for FY 2023 is maintaining market health, including product affordability, for these critical health commodities. The project expects to issue a tender for this group of products in Q3.

Procurement and deliveries

In Q2, GHSC-PSM procured malaria commodities¹² for 26 countries with a total value of \$61.9 million.

OTD and OTIF. Timeliness of GHSC-PSM deliveries remained consistent and strong for standard OTD and OTIF in Q2 for malaria commodities, with a OTD rate of 81 percent (68 percent for COVID-impacted) (see Exhibit 12). The OTIF rate in Q2 was 81 percent (71 percent for COVID-impacted). This is despite the high degree of uncertainty and the extreme volatility in global supply chains caused by the pandemic.

¹² GHSC-PSM procured malaria commodities for the following countries: AFRICA: Angola, Benin, Burkina Faso, Burundi, Cameroon, DRC, Côte d'Ivoire, Ethiopia, Ghana, Kenya, Liberia, Madagascar, Malawi, Mali, Mozambique, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Tanzania, Uganda, Zambia, Zimbabwe; ASIA: Burma, Laos.

Exhibit 9. Malaria Commodities, OTD

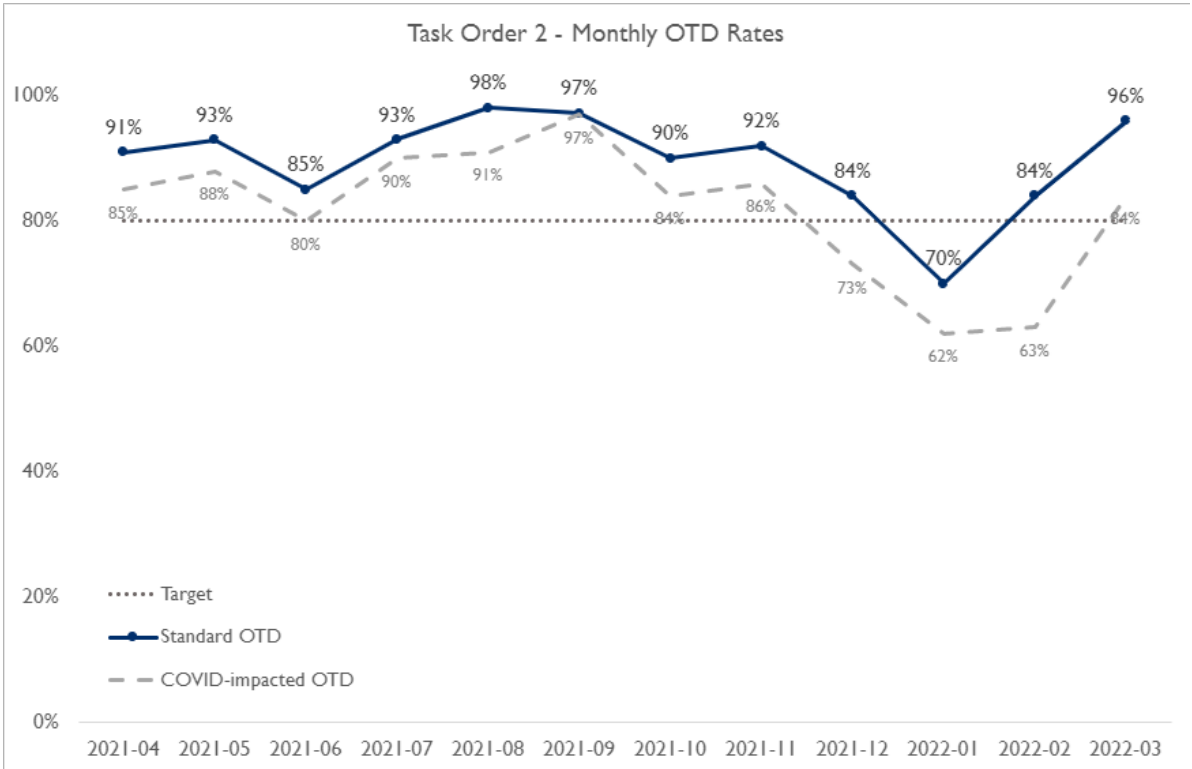
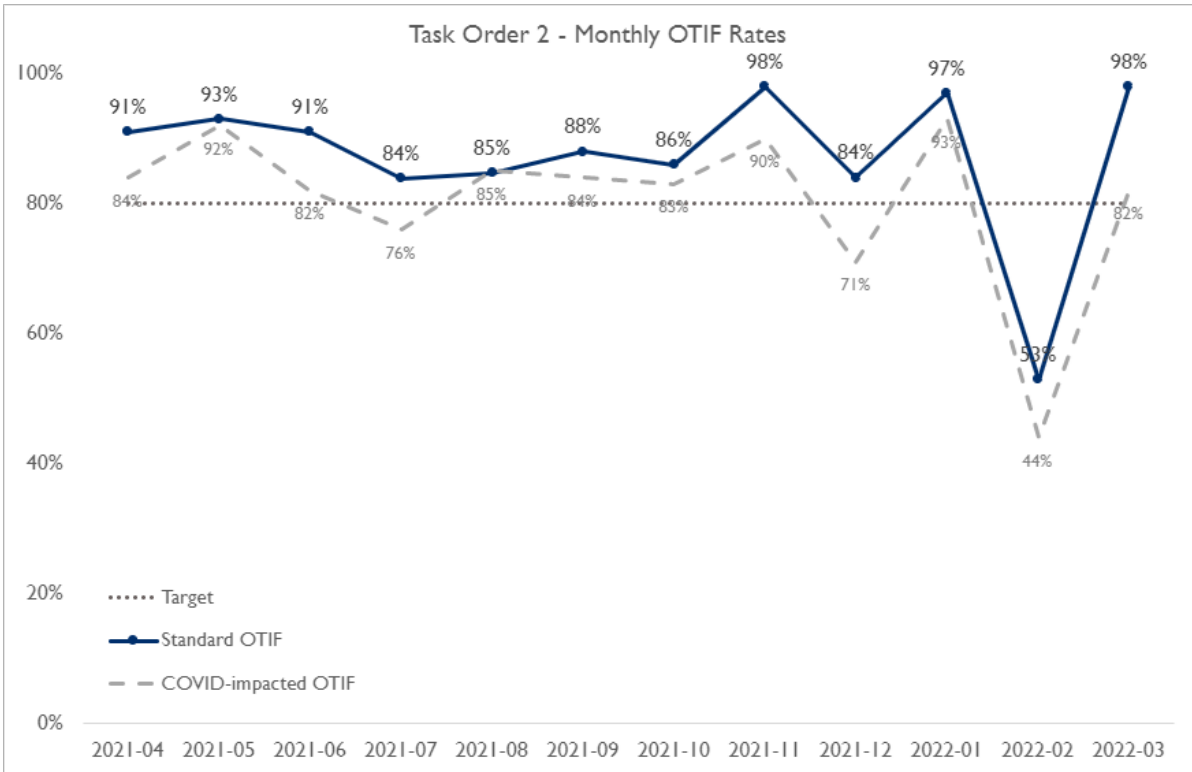


Exhibit 10. Malaria Commodities, OTIF



Global sourcing collaboration

GHSC-PSM participates in the Malaria Pharma Task Force,¹³ mRDT Task Force,¹⁴ and Indoor Residual Spraying/Insecticide Treated Nets (IRS/ITN) Task Force.¹⁵ These task forces provide a valuable forum for exchanging information on market risks and promoting better collaboration across the global malaria community. They are supplemented by one-off working sessions and communications to discuss acute risks, issues, and opportunities.

GHSC-PSM plays a leading 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 working group focused on discussing, tracking, and validating activity in the artemisinin market, with an emphasis on the growing number of supplier requests for increased unit prices for artemisinin-based pharmaceuticals and exploring ways to incentivize use of semi-synthetic artemisinin (SSA) to combat the rising price of vegetal artemisinin. As suppliers communicated higher costs and challenges in sourcing vegetal artemisinin, the working group analyzed the cost implications of potential increased use of SSA.

The mRDT market faced limited challenges in Q2; however, in some instances, suppliers conveyed the need to delay goods availability dates (GADs) to prioritize COVID-19 orders. Overall, the mRDT market for Q2 was steady and the Rapid Diagnostic Test Task Force meeting cadence was changed from monthly to quarterly.

Proactive procurement strategy

GHSC-PSM invests in and adapts a proactive procurement strategy for key malaria commodities, such as artesunate injectables and sulphadoxine-pyrimethamine + amodiaquine (SPAQ). Since the onset of COVID-19, the project executed several of these strategies that are designed to move rapidly by leveraging a rotating emergency loan fund to secure large volumes of supplier production capacity in markets where supply is particularly constrained. The project places orders based on data-driven demand signals, which enables securing production capacity earlier in the ordering process—often in advance of receiving orders.

The intent of proactive procurement strategies is to ensure access to a supply of critical commodities when countries need them, to reduce fulfillment lead times, and to hedge against uncertainty and disruption in these markets. These strategies are partially formed by the use of demand data—derived from country supply plans and the Procurement Planning and Monitoring Report for malaria (PPMRm)—which the project translates into country stock risk dashboards that illustrate the timing and scope of upcoming stock risks. These strategies are designed to mitigate

¹³ Pharma Task Force members include CHAI, the 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 WHO.

¹⁴ 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.

¹⁵ IRS/ITN Task Force members include the 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.

future stock risks, ensure timely delivery in constrained markets, and avail favorable market conditions that may not continue into the future (favorable pricing, etc.).

In Q2, the project planned for the implementation of vendor-stored inventory for ALu. After determining the state of the market and that most Malaria Operational Plan (MOP) FY 2021 demand was already fulfilled, GHSC-PSM decided against proactive procurement of ALu.

The project did not consider any other proactive procurements due to markets stabilizing from an on-time delivery perspective.

Quality assurance

Fostering quality in pharmaceuticals

GHSC-PSM concluded its investigation of an artesunate injectable that was found to be OOS for sterility testing for some batches that are components of the product kit. The project explored several investigational strategies and tested various hypotheses to determine whether the root cause of the sterility OOS was a result of the third-party laboratory during testing or whether the product was contaminated by the supplier during the manufacturing process. Upon conclusion of the testing activities and review of the available data and evidence gathered, no assignable root cause of the OOS was determined. PMI concurred with the GHSC-PSM recommendation to prioritize patient safety, reject the product batches that were found to be OOS, and adjust the testing strategy moving forward.

GHSC-PSM also investigated an OOS for water content in the artesunate powder component of the artesunate injectable product kit. The third-party testing lab reported results that were higher than the specification, which is no more than (NMT) 0.5 percent for water content. The project determined that various methods for water content testing were available and then consulted with the supplier on the test methodology. Subsequently, the lab performed four additional studies/hypotheses of six tests each on the samples from the same batch. The average result across the four additional tests yielded conform results. The project reviewed third-party testing data and studies from the supplier and concluded that though there was inconsistency in the test results (most results yielded conform results) the stability study data indicated no risk to the safety or efficacy of the product due to water content. GHSC-PSM recommended release of the product, and PMI concurred.

Fostering quality in LLINs

GHSC-PSM investigated a batch of LLINs that was OOS for mesh size. The project's third-party lab reported the LLIN mesh size as 23 holes per square centimeter; however, the WHO specification for this parameter is 24 holes per square centimeter. GHSC-PSM determined that when using the 100-centimeter square tool the third-party lab's results were 23 holes per square centimeter; however, using the 1-inch square tool the mesh size met the specification and was reported as 24 holes. The project noted that the results were inconclusive and that the WHO does not specify the size of the tool one must use for measuring mesh size. In reviewing the data and evidence gathered, GHSC-PSM concluded that the marginal difference in mesh size had little to no impact on the efficacy of the LLINs given that all other parameters met WHO specifications. PMI concurred with the project's recommendation that the batch be accepted and notified the supplier to monitor the mesh size parameter during in-process and finished product testing.

Fostering quality in mRDTs

In Q2, GHSC-PSM initiated an investigation of mRDTs following complaints from two recipient countries that mRDTs results took longer to read after testing samples were added to the mRDT cassettes, provided erroneous results, or showed invalid results. The project gathered complaint data from the countries and liaised with the supplier to perform an internal investigation. The supplier provided a preliminary report wherein retained samples of the complaint batches were retested under several temperature conditions. The supplier reported that all the mRDTs complied with the instructions for use (IFUs). The project requested additional data and follow-up to determine whether the IFUs of mRDTs are followed in the countries. GHSC-PSM requested that the erroneous mRDTs be sent to the supplier for evaluation as requested by the supplier. The project then compared the IFUs for mRDTs in its portfolio and noted that different brands of mRDTs have different IFUs. GHSC-PSM will continue its investigation in Q3 to determine whether the root cause of the complaints was due to the quality of the mRDTs or countries not being familiar with the brand of mRDTs and their corresponding IFU.

Promoting supply chain market health

In Q2 the project completed a review of one pharmaceutical product and two mRDTs (see Product Review for Eligibility Table below) to support access to two additional quality-assured products. The quality review facilitates the addition of the product to the Restricted Commodity Waiver list governed by USAID Automated Directives System 312, making the product eligible for procurement.

Product Reviewed for Eligibility

Product category	Product subcategory	Product detail
Pharmaceuticals	SMC	Sulfadoxine and pyrimethamine 500 mg/25 mg tablets (Falcistat)
Malaria Rapid Diagnostic Tests	mRDT	Paracheck Pf - Rapid test for P. falciparum malaria device HRP2 (Pf) - 10 packs - Code
Malaria Rapid Diagnostic Tests	mRDT	ParaHIT f Ver. 1.0 Rapid Test for P. falciparum Malaria Device - 10 pack

GHSC-PSM works to ensure QC testing efficiency and to increase testing capacity for key products by expanding the number of labs that can test particular malaria commodities. The project completed method transfer for a new artesunate injectable product at a primary lab and completed suitability testing for sterility testing of the two artesunate injectable products at secondary labs. GHSC-PSM also managed confirmatory testing at a secondary lab for artesunate injectables as a trial to confirm the capability of the testing lab to test the product.

Collaboration

GHSC-PSM collaborates with the Global Fund's QA team on quality-related issues, approaches, and best practices. During the investigation into an artesunate injectable product that was found to be OOS for sterility testing, the project shared data from third-party testing and the joint analysis and discussed the investigation approach and hypothesis with the Global Fund. The Global Fund used this information to inform the QC processes for the batches of the product that they procured.

As the chair of the LLINs Quality Assurance Group (LQAG), GHSC-PSM works with a global working group of procurers focused on LLIN QA and QC to foster discussions and activities related to LLIN quality and quality management system (QMS). The LQAG discussed feedback from the Raising the Floor Nets: ITN Quality Convening in a webinar hosted by BMGF, the Clinton Health Access Initiative (CHAI), and Innovation to Impact (i2i). The LQAG harmonized the QC processes among procurers by outlining procedural differences. The LQAG also discussed activities and participation in the 2nd Convening on ITN Quality that is scheduled for Q3. The convening gathers industry stakeholders, including procurers, suppliers, regulators, and end-users, to discuss LLIN quality.

The project collaborated with the Rwandan government and LLIN suppliers to establish quality agreements that reconciled the differences between country-level QC requirements and methodology, specifically for the post-shipment inspection of LLINs, with WHO and PMI/GHSC-PSM QC requirements. The completion of the quality agreements was critical to the project's placement of purchase orders for the country and subsequent procurement of LLINs. Upon arrival of the LLINs in Rwanda, GHSC-PSM QA and its QC partner managed in-country post-shipment inspections and QC activities. The project ensured that QC activities were executed according to the agreements. This resulted in inspection and QC results that conformed to and met Rwanda QC requirements. Rwanda accepted the LLINs and included them in their countrywide distribution.

Key performance indicators

GHSC-PSM reports on three key performance indicators for quality assurance:

- The project exceeded the 80 percent QA lead time target with an on-time completion rate of percent for QA activities in Q2.
- There were 0 batches of products showing nonconformity in Q2 (target is less than 1.0 percent).
- 100 percent of investigation reports from prior OOS findings were finalized within 30 days of the completion of the investigation.

Cost savings

- In Q2, continuation of risk-based testing along with the adjusted QA/QC protocol resulted in cost savings of \$102,761.76 due to the implementation of randomized testing.

Adoption of standards-based identification, barcoding, and data sharing

In Q2, GHSC-PSM saw a positive trend in compliance of in-scope malaria suppliers with identification, barcoding, and data-sharing requirements of products procured. These requirements involve a phased implementation grounded in GS1 Healthcare Standards, with the objective of creating an enabling environment for data exchange and visibility. Highlights and milestones associated with these standards in Q2 are included in Section C.

Prioritizing and redirecting orders

To address country needs and market constraints, GHSC-PSM works with USAID to prioritize orders based on need and conducts commodity order transfers to improve stock status. Below are Q2 examples of how these strategies ensure that countries avoid stockouts.

The project created an Artesunate Injectable Fulfillment Plan in response to closing the quality investigation with one of the project's primary artesunate injectable suppliers due to a preliminary sterility OOS of their product. As a result of the fulfillment plan, 720,000 kits of artesunate injectable 60mg production will be redirected from Mali to fill a portion of the needs in Cameroon, Ethiopia, Guinea, Kenya, and Uganda. Also, the remainder of the goods that were produced and were previously placed on hold during the investigation that the project has agreed to accept pending pre-shipment testing will be redirected to service Cameroon, Ethiopia, Guinea, Kenya, and Thailand. GHSC-PSM deprioritized Madagascar and Tanzania's orders to support this fulfillment

plan as both countries had sufficient stock on hand and in the pipeline of orders being received to avoid stockouts. Completion of the fulfillment plan is slated for early Q3, with deliveries starting in Q2 FY 2022 through Q1 FY 2023.

Cameroon agreed to receive disbursement from the ALu emergency stockpile to mitigate a stockout. These orders were placed with the RDC for delivery in Q3.

Mali and Nigeria agreed to receive SPAQ from the RDC stockpile to meet SMC campaign dates in response to additional demand.

In Q2, 29 countries submitted data to the PPMRm. The PPMRm collects and reports information on stock status and on host governments' and other donors' shipments. Visibility into stock status and shipment information enables PMI, the project, and countries to make decisions on prioritizing, expediting, or delaying procurements or shipments, and facilitates the review of forecasts and supply plans to optimize procurements. Q2 examples are as follow:

- In Niger, artesunate suppository 100mg was out of stock in Q2. The project expedited a shipment and shifted it from ocean to air; it is now expected to arrive in May instead of June 2022.
- In Nigeria, the ALu 6x3 was nearly out of stock at the end of Q2. The project expedited a shipment that will arrive in April instead of late May 2022.
- In Rwanda, all four presentations of ALu were overstocked. To prevent expiries, GHSC-PSM postponed shipments and split a shipment into two to space deliveries.
- In Malawi, the project is working with the Mission to address understocks of mRDTs and SP and exploring the possibility of an additional procurement to mitigate the stockout risk in FY 2022.

Stockout Reduction Initiative

The project implemented a stockout reduction initiative in 21 countries in FY 2021 following a playbook through four stages:

1. Reviewing baseline and targets based on available data
2. Reviewing root causes using supporting evidence
3. Validating proposed solutions
4. Developing investment plans and incorporating prioritized investments into FY 2022 work plans

In Q2, GHSC-PSM developed an Excel-based budget template for investment planning (stage 4). The template incorporates the investment plan with cost drivers and malaria operational plan (MOP) categories, and includes partners' contributions for three years (2003–2005), along with guidance for use.

The budget template guides the budgeting process through four steps:

1. Review existing investment plan outputs
2. Define current state of each investment and expected impact
3. Provide costing details for each investment activity
4. Assess outputs to make decisions

The project shared the template with three country offices and will refine the template based on their feedback. This template will be introduced to the country offices for FY 2023 work planning and should inform future MOP planning.

LLIN distribution support

In Q2, GHSC-PSM delivered 13.5 million LLINs to countries for onward distribution as a malaria prevention measure (Exhibit 14). Many countries deliver LLINs from the central level to health facilities for continuous distribution. Other countries plan, launch, or continue large-scale LLIN distribution campaigns as a key malaria prevention strategy. These massive initiatives ensure beneficiaries receive the nets they need, particularly in high-impact areas. While the actual distributions take just a few weeks, logistics, supply planning, procurement, and pre-positioning the nets can take months. In addition to procurement, planning, and capacity building, GHSC-PSM provides in-country logistics support, including warehousing and transportation of LLINs to lower-level warehouses or health facilities. In some countries, GHSC-PSM also supports distribution to recipients.

Exhibit 11. Quantity of LLINs Delivered to Countries in FY2022 Q2

Country	Number of LLINs delivered
Angola	1,963,040
Burkina Faso	1,181,321
Congo DRC	761,122
Côte d'Ivoire	346,374
Ghana	891,865
Laos	220,314
Niger	100,000
Nigeria	3,158,800
Rwanda	1,142,263
Senegal	786,522
Sierra Leone	333,000
Tanzania	1,615,812
Thailand	50,000
Zimbabwe	995,000
Total	13,545,433

In Q2, GHSC-PSM supported LLIN distribution activities, including:

- **Zambia:** GHSC-PSM is working with the National Malaria Elimination Center (NMEC) and other key implementing partners to develop the activity plan for the 2023 LLIN mass campaign. NMEC, in the recently developed strategy, adopted universal coverage with LLINs

as the major vector control intervention rather than indoor residual spraying. This would require 15 million LLINs for the campaign, but committed funds will cover only the procurement of 5 million. The NMEC and global partners are looking at possibilities for the Against Malaria Foundation (AMF) to fill the gap. In addition to the mass distribution campaign, GHSC-PSM also supported the continuous distribution in Q2. The project quantified in-country costs for delivering the LLINs directly to health facilities. GHSC-PSM procured 600,000 LLINs in Q1 and delivered them in Q2 based on the malaria burdens per facilities' catchment areas in accordance with NMEC guidance.

- **Guinea:** To improve the management of LLIN mass distribution campaigns, the MOH through the National Malaria Control Program (NMCP) decided to digitalize the mass campaign by developing apps to optimize the distribution activities. GHSC-PSM worked with the NMCP, Catholic Relief Service (CRS), with funding from Global Fund), Stop-Palu+, and a local telecommunication infrastructure provider to execute this strategy. CRS provided the support for developing the apps and Internet access, Stop Palu+ supported the purchase of the server, and GHSC-PSM provided technical assistance, through a local subcontractor, in the installation and configuration of the server in the MoH data center as well as to ensure regular maintenance. These collaborative efforts have allowed the mutualization of resources between these partners by sharing the cost of Internet provision, application configuration and hosting/maintenance of the server. Digitalization of the LLIN mass distribution campaign is expected to improve planning, implementation, data collection and visibility, and better coverage of LLINs for beneficiaries.

Country Support

GHSC-PSM is providing supply chain systems strengthening support for malaria medicines and commodities in 22 countries in FY 2022,¹⁶ including:

- **Zambia:** In collaboration with the Zambian government, GHSC-PSM leveraged analysis from QAT to advocate for funding to fill a commodity funding gap. By continuously sharing QAT funding gap analyses at all monthly supply chain meetings with NMEC and USAID/PMI, this platform served as a vehicle for resource mobilization. This resulted in reducing the gap by 43 percent to \$2.6 million, as opposed to the previous gap, which stood at \$6 million.
- **Sierra Leone:** GHSC-PSM revised the template of the central to district malaria commodities distribution matrix to fully use facility-level stock data and take into account adjustments for stockout periods and under-reporting. The revised matrix was used in Q2 and proved effective in allocating quantities to each district or hospital when compared to the previous allocation matrix, which reflected less quantities to re-supply. The revised

¹⁶ GHSC-PSM provides technical assistance to countries with malaria funding: AFRICA: Angola, Burkina Faso, Burundi, Cameroon, Ethiopia, Ghana, Guinea, Liberia, Malawi, Mali, Mozambique, Niger, Nigeria, Rwanda, Sierra Leone, Uganda, Zambia, and Zimbabwe; ASIA: Burma, Cambodia, Laos, Thailand.

matrix is available through Google Sheets and the responsible district/hospital staff can easily access the template to populate their physical stock counts on a quarterly basis.

- **Rwanda:** Rwanda Medical Supply (RMS) Ltd was established in 2020 with a clear mandate: to ensure quality, affordable health products, and medical technologies are readily available to the public through a cost-efficient, sustainable, and effective supply chain. The commodities are procured, stored, and distributed through an economical and financially sustainable supply chain that meets current and future needs and manages increasing complexity. To achieve its mission, RMS needs a dedicated team of supply chain professionals who are fully equipped with updated working tools and procedure manuals. To meet these goals, GHSC-PSM trained RMS departmental teams in Q2 on using monitoring tools to track supply chain key performance indicators and in implementing standard operating procedures (SOPs) for RMS operations to foster greater efficiency. The expected outcome of this training is to have skilled RMS staff who properly understand the operational processes and key performance indicators and can develop and monitor tools to track supply chain performance, malaria supply chain included.

B3. Family Planning and Reproductive Health



To date, the GHSC-PSM project has delivered enough contraceptives that, when combined with proper counseling and correct use, are estimated to provide **99.6 million couple-years of protection**, including **5.08 million in Q2**.



Procured FP/RH commodities¹⁷ for 18 countries¹⁸ in Q2, and provides **health supply chain systems-strengthening support to 20¹⁹ countries in FY 2022** with FP/RH funding.



Continued to successfully fulfill USAID-supported countries' orders in a timely manner, **achieving 95 percent (95 percent COVID-impacted) OTD** in Q2.



Hosted a webinar on the innovative stock-alert Drugs out of Range (DOOR) system and the pilot implemented in Angola. Discussed was a mixed-methods evaluation focused on assessing the effectiveness, viability, and acceptability of the system for three contraceptive commodities and one antimalarial product.



Submitted 11 abstracts in advance of the International Conference on Family Planning (ICFP) taking place in Q1 FY 2023. Seven came **from country offices in Angola, Ghana, Liberia, Pakistan, and Rwanda**.

The FP/RH task order 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

¹⁷ Per USAID guidance, all condom procurements are counted under the HIV/AIDS task order.

¹⁸ GHSC-PSM procured FP/RH commodities for the following countries: Angola, DRC, Côte d'Ivoire, Haiti, Kenya, Madagascar, Malawi, Mali, Mozambique, Niger, Rwanda, Senegal, Tanzania, Togo, Uganda, Zambia; ASIA: Bangladesh; MIDDLE EAST: Afghanistan

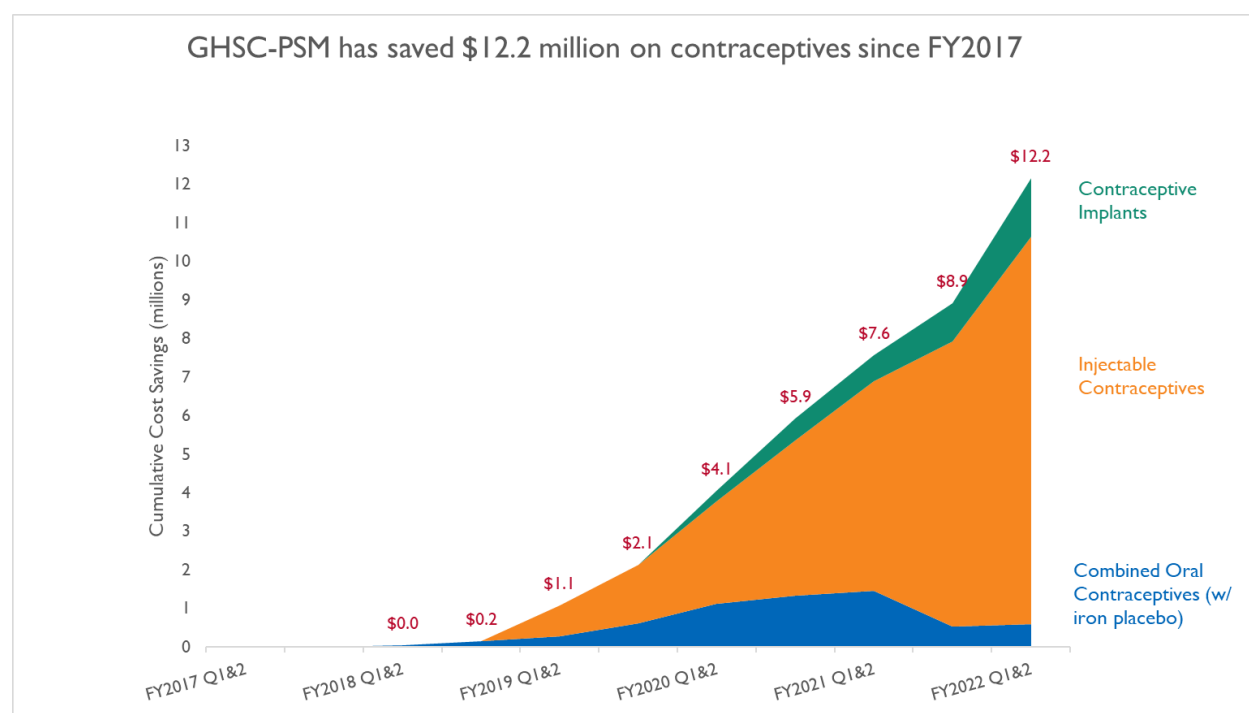
¹⁹ GHSC-PSM is providing technical assistance with FP/RH funding to the following countries in FY 2022: AFRICA: Angola, Burkina Faso, Burundi, Ethiopia, Ghana, Guinea, Liberia, Malawi, Mali, Mozambique, Nigeria, Rwanda, South Sudan, Uganda, Zambia; LAC: El Salvador, Republic of Guatemala, Haiti, Republic of Honduras, Nicaragua, Panama; ASIA/NEAR EAST: Nepal, Pakistan.

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 on core FP products has reached \$12.2 million over the life of the project, including nearly \$3.3 million in savings in the first half of this fiscal year. This represents 24 percent of the total FY 2022 procurement value for these core commodities so far, and 12 percent of total procurement value for all family planning products.

Exhibit 12. Life-of-Project Savings on Contraceptives



The greatest savings driver is intramuscular depot-medroxyprogesterone acetate (DMPA-IM), where procurement of generics continues to yield savings over baseline prices.²⁰ All DMPA-IM procurements this period were for generic products. Two-rod implants continued to add savings, with a high volume of purchasing this period. While average costs still remain below the baseline, most order volume this period was allocated to a higher-priced supplier that can fulfill orders within a shorter lead time. Given the lead time benefits, demand for the higher-priced product is expected to remain strong, which will in turn slow the rate of cost savings. Finally, cost savings on combined oral contraceptives (COCs) with iron placebos increased marginally this period, after price hikes in the last fiscal year erased much of the previously accrued savings. The project is

²⁰ Please note that reported savings in previous periods have increased. This is because the project is now including generic DMPA-IM orders for Bangladesh for the last several years. Previously, these had been excluded because of the DDP Incoterms of these deliveries, which are typically assumed to have shipping costs included in the commodity unit price. However, the Bangladesh orders are a unique case in which shipping costs are paid separately and do not impact the price of the commodity. Given the high unit volume and low generic price of these orders, significant savings on DMPA-IM have now been added to all periods beginning from Q4 FY 2020.

balancing its portfolio across suppliers to mitigate the impact of these price increases. Also, procurement of COCs with iron placebos is expected to phase out this fiscal year, in favor of COCs with non-iron placebos. Non-iron procurements began this period. Savings on these commodities are not reported yet, but weighted average prices are expected to be lower compared to current average prices for iron placebo COCs.

Addressing FP/RH priorities

Considering 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

Despite persistent and severe global supply shortages of injectable and implantable contraceptives, in Q2, GHSC-PSM maximized its strategic sourcing strategy to reduce supply risk and ensure countries had access to a continuous and reliable supply of FP/RH commodities. To mitigate the impact of COVID-19, the project continued to leverage stock at the RDCs and regularly analyze allocation of production to ensure countries receive adequate supply to avoid any stockouts. The pandemic continues to impact logistics, including reduced global shipping capacity, difficulty in confirming bookings and moving cargo, a global container shortage, and decreased availability of air freight capacity.

Timeliness of GHSC-PSM deliveries remained strong for standard OTD in Q2 for FP/RH commodities at 95 percent (95 percent COVID-impacted). OTIF numbers were the same, at 95 percent for both standard and COVID-impacted measures. During FY 2020, the number of COVID-impacted orders started to increase significantly and, as predicted in previous reports, has since continued to challenge OTD performance. Freight costs in global supply chains remain highly volatile and the degree of unpredictability caused by the ongoing pandemic continued to impact orders in Q2. This impact is expected to continue throughout FY 2022.

Commodities Procured for FP/RH Programs

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

Exhibit 13. FP/RH commodities, OTD

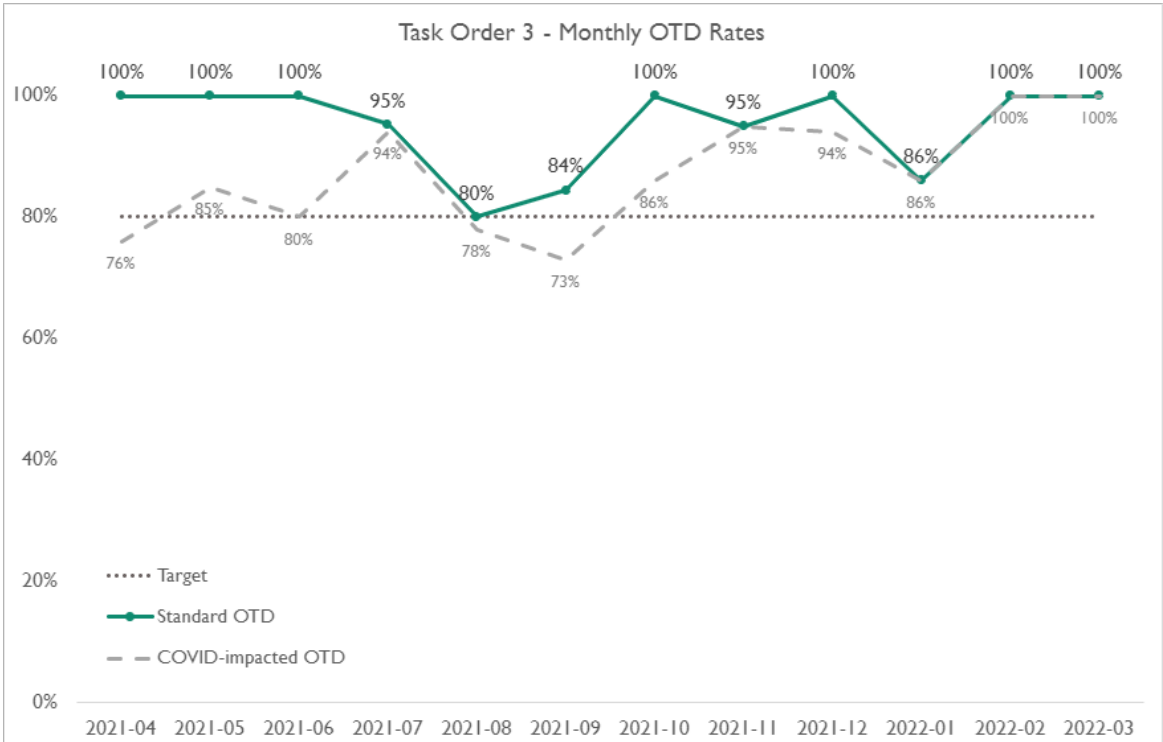
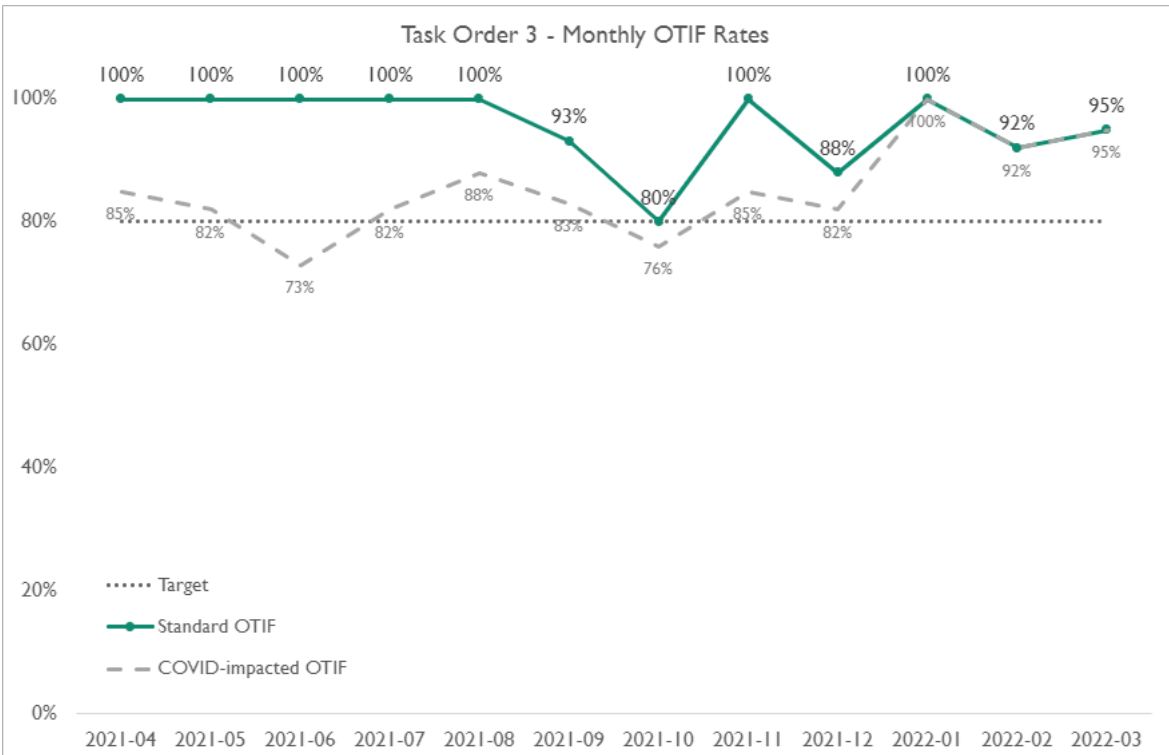


Exhibit 14. FP/RH Commodities, OTIF



Increasing accessibility of the hormonal intrauterine device (IUD)

GHSC-PSM actively participates in the Hormonal IUD Access Group and sub-working groups, including the Steering Committee, Partners Exchange, and Operations Group. In Q2, this participation focused on developing initiatives to mitigate the risk of product leakage to protect the opportunity this new product offering represents in increasing contraceptive choice for women and girls. In Q3, GHSC-PSM will support the Hormonal IUD Access Group to implement these initiatives in coordination with hormonal IUD suppliers.

Supporting social marketing engagement activities

In Q2, GHSC-PSM supported social marketing organizations (SMOs) that have shown interest in and commitment to transitioning from iron-based combined oral contraceptives (COCs) to non-ferrous (Fe) fumarate placebo products. SMOs in Benin, Ghana, and Tanzania are actively revising their current brand artwork (for overbranding purposes) to facilitate the transition and accommodate supplier feedback as well as reviewing regulations to ensure that they remain compliant with local requirements. As part of this transition, GHSC-PSM held discussions with suppliers to ensure in-country overbranding remained acceptable and to continuously monitor in-country stock levels to ensure continuous product availability.

GHSC-PSM also monitors social marketing activities to support strategic and operational discussions aimed at stabilizing the social marketing supply chain. In Q2, this included monitoring SMO contracts. In Zambia, social marketing activities resumed under the new USAID Zambia Accessible Markets for Health Activity (Zam-Health). GHSC-PSM is supporting the procurement of specialty condoms for this SMO. In Benin and Nepal, the project is actively monitoring SMO program contract extensions. In Ghana, GHSC-PSM is monitoring the Total Family Health Organisation's plan to introduce long-lasting reversible contraceptives (LARC).

Documenting FP/RH global supply chain best practices

GHSC-PSM kicked off an activity to document key FP/RH global supply chain best practices and associated successes, challenges, and lessons learned. The goal of this activity is to support successful knowledge transfer from the GHSC-PSM project to USAID and/or future implementing partners as the project approaches closeout. In March 2022, GHSC-PSM facilitated a virtual brainstorming workshop with stakeholders from USAID, GHSC-PSM, and GHSC-QA to identify key best practices for inclusion in the report. GHSC-PSM will begin writing the report in Q3.

Coordinating with USAID implementing partners to better understand oral contraceptive market trends

GHSC-PSM engaged with the USAID-funded Sustaining Health Outcomes through the Private Sector (SHOPS) Plus initiative to identify opportunities to support a joint-analysis of oral contraceptive (OC) market trends in FP priority countries. The analysis will build on a previous OC demand analysis that GHSC-PSM conducted in 2020 to identify the rationale for declining USAID demand in OCs in select countries. In Q3, GHSC-PSM will begin deep-dive analyses in select countries.

Leveraging global market intelligence to inform supply planning

In Q2, GHSC-PSM kicked off an activity aimed at improving country-level supply planning and USAID mission commodity budgeting by incorporating market intelligence into supply planning and commodity budgeting processes. In Q3, the project will conduct outreach with FASP countries to understand if/how existing market intelligence communications are incorporated into supply planning processes and what additional market intelligence data might be helpful to better inform supply planning processes.

Continuing engagement with FP suppliers

GHSC-PSM routinely engages with strategic suppliers. In Q2, the project conducted a strategic business review with Bayer AG. Stakeholders from Bayer, GHSC-PSM, GHSC-QA, and USAID reviewed Bayer's supplier scorecard and discussed ordering trends for key products they supply, supply planning processes, QA updates, and key GHSC-PSM project updates and initiatives.

Modeling the case for hormonal contraceptive manufacturing in sub-Saharan Africa

GHSC-PSM submitted a presentation abstract titled "Modeling the Case for Hormonal Contraceptive Manufacturing in Sub-Saharan Africa" to ICFP 2022. The presentation highlights a 2021 modeling exercise conducted by IQVIA with funding from GHSC-PSM to build a business case for high-quality manufacturing of modern contraceptives in sub-Saharan Africa). The exercise identified a potential scenario in which manufacturing of hormonal injectable contraceptives in sub-Saharan Africa serving FP2030 sub-Saharan countries is economically feasible. However, further investigation is required to develop a more robust business case for a sustainable injectable contraceptive manufacturing facility in sub-Saharan Africa. Also in Q2, GHSC-PSM modified an existing indefinite quantity subcontract (IQS) with IQVIA. This modification establishes the contractual framework for the project to engage IQVIA in building on the 2021 modeling exercise to further investigate hormonal injectable contraceptive market trends vis a vis future changes in the contraceptive method mix.

Disseminating Drugs out of Range activity results

GHSC-PSM hosted a webinar on the innovative stock-alert tool Drugs out of Range (DOOR) and the pilot implemented in Angola. The team provided an overview of the DOOR system and shared [evaluation findings](#) and lessons learned from the activity that was implemented between 2019 and 2021. Key outcomes discussed during the webinar included how, in two dozen instances among the 20 sites (service delivery points) piloted, supply chain managers had immediate visibility into an understocked alert or stockout alert that otherwise would have gone undetected for weeks. Eighty percent of DOOR system alerts received a timely response (within 24 hours) from the municipal focal points.

Collaboration with global stakeholders

GHSC-PSM builds global partners' awareness of and support for the USG's FP/RH priorities and programs and supports USAID's leadership in contraceptive security through the following activities.

Preparing for ICFP2022

In advance of the November 2022 ICFP conference, GHSC-PSM submitted 11 abstracts for consideration. Of these, seven focused on country office-based activities in Angola, Ghana, Liberia, Pakistan, and Rwanda, and four abstracts related to TO3 Core activities. Abstract topics included the Contraceptive Security Indicators survey, innovations in contraceptive packaging, digital health, commodity deliveries to the last mile, and local manufacturing in SSA. ICFP has indicated plans to notify authors of abstract acceptances at the end of Q3.

Tracking contraceptive security

GHSC-PSM finalized data validation for the 2021 round of the Contraceptive Security (CS) Indicators survey and is preparing a technical report and an update to the interactive online dashboard. This year's survey includes several updates, including questions to assess the quantity of contraceptives purchased versus forecasted (measured in couple years of protection) to further gauge the visibility of contraceptive commodities within a country's LMIS, and to understand countries' plans to make an FP2030 commitment. The survey also includes a new section about COVID-19's impact on several aspects of contraceptive security and the mitigation measures countries are undertaking. Some initial key findings:

- Fifty-one percent of the countries had a funding gap between forecasted demand for contraceptives and actual spending, similar to the previous survey period in 2019 (49 percent).
- Thirty-four percent of reporting countries (14) reported that the COVID-19 pandemic had a medium or high impact on the amount of government spending for contraceptives, while 7 percent (3) said there was a low impact, and 59 percent (24) said there was no impact.
- In 51 percent of reporting countries (23), FP commodities are subject to import duties, down slightly from 55 percent (27) in the last survey period.

Full results from the 2021 CS Indicators survey in the form of an Excel database, including a summary tab, Contextual Measures, and detailed country surveys, are now available for download from the GHSC website. In Quarter 4, an updated online dashboard and 2021 survey report will be published.

Enhancing visibility of FP supply data

GHSC-PSM serves as a key contributor in supporting strategic development and scale-up of the Global Family Planning Visibility and Analytics Network (VAN) [platform and processes](#). VAN is the RH community's pioneering undertaking to increase supply chain visibility and improve collaboration across stakeholders. In Q2, GHSC-PSM continued to focus on enabling the project to realize the benefits of the tool by supporting and onboarding users; validating new features, processes, and data integrated with the VAN; and engaging in strategy sessions for use of the VAN in FY 2022.

Specifically, GHSC-PSM staff:

- Managed the ARTMIS-VAN data integration focusing on maintaining data quality following the integration of new data elements in Q1. Conducted regular integration reviews and data

quality process checks to ensure timely updates to the VAN while GHSC-PSM performs root-cause analysis and implements change requests.

- Identified countries that are good candidates to upgrade their VAN membership from a basic to premium subscription, to realize greater visibility into inbound shipment data, supply planning and forecasting features, data quality and action ticketing, and country-specific support from Control Tower analysts. GHSC-PSM is working with these countries to prepare them for premium membership readiness.
- Participated in the VAN Steering Committee (GHSC-PSM is a non-voting member) and provided input on the VAN capabilities matrix, including an analysis of business need versus current features to prioritize features and upgrades in CY 2023.
- Participated in regular VAN working groups, including the following task forces: Data Management, Technical Management, Data Sharing, and Super User and Analytics.

Conducting end-use verification surveys in project-supported countries

FP/RH 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 FP/RH 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.

In Q2, the project supported data collection on FP/RH commodities through EUV surveys in Ethiopia and completed and shared two countries' EUV reports with in-country partners, including USAID (Burkina Faso and Mali).

Country support

Below are examples of the technical assistance that GHSC-PSM provided to strengthen in-country supply chains for FP/RH commodities in Q2.

The VAN captures data from multiple sources so supply chain managers can assess supply needs, prioritize them, and act when supply imbalances loom to support cost-effective delivery of FP products. GHSC-PSM trained MOH senior management and other technical staff in **Malawi** on VAN data visibility and triangulation. The project also began pushing LMIS facility data each month to DHIS2; the data can then be seen through the interoperability layer programmed into the VAN's end-to-end platform.

Following the training, the MOH team can now visualize FP shipments, orders, and national stocks up to SDPs, and stakeholders with VAN credentials can view Malawi data globally.

GHSC-PSM works directly with Community Health Associations (ASACO) to make FP products available in remote areas of regions of **Mali** supported by USAID partners, including Kayes, Koulikoro, Ségou, Sikasso, and Mopti. To help improve contraceptive security, the project estimated six-month supply needs for each community health center (CSCOM) and developed a distribution plan for FP commodities to targeted regions.

For distribution from the central warehouse to districts in the Mopti, Ségou, and Sikasso regions, GHSC-PSM subcontracted with a third-party logistics (3PL) transport company to deliver contraceptives to the designated warehouse in each district where the commodities were handed over to the USAID-funded Health System Strengthening (Keneya Sinsi Wale), Governance, and Financing Activity (HSS) project. GHSC-PSM and the HSS project coordinated with the ASACOs to retrieve and deliver the commodities to the 573 CSCOMs in the three regions. For the Kayes region, GHSC-PSM handed the commodities over to the USAID-funded Momentum Private Healthcare Delivery (MPHD) project, which distributed them to 10 CSCOMs.

To monitor the delivery, GHSC-PSM implemented the Distribution Transportation Tool for the second time to track the shipped packages based on assigned routes, drivers, and vehicles.

Within five days, all the health facilities in the Kayes, Sikasso, Ségou, and Mopti regions had received their deliveries following the established distribution plan. Each box contained the list and the contraceptives needed at a particular health facility for six months of coverage of FP needs in the health area. Overall, 583 health facilities in four regions received the required quantity of contraceptives, and 624 boxes were delivered by the 3PL to the health facilities. The boxes in the Koulikoro region will be distributed in early Q3.

GHSC-PSM provided technical assistance through a forum to the Management Division of the Department of Health Services in **Nepal** in developing a quarterly review of the supply plans for 40 key commodities. The forum, which reviewed stock levels, orders, and shipment status of these products, found five FP commodities (condoms, DMPA-IM, OCs, implants, and IUDs) were overstocked. The forum recommended actions to postpone the shipment of Depo-Provera in the pipeline to align with the desired stock level and redistribute overstocked commodities to facilities with low stock.



The presidents of community health centers receiving FP products in Sikasso

The redistribution strategy is designed to ensure the commodities reach the health facilities where they are needed the most to serve the last mile while averting expiry and potential waste of resources.

During International Women's Day (March 8), GHSC-PSM **South Sudan** highlighted the work of its all-female country supply chain team. The project produced three videos that described the challenges and impact of increasing access to and awareness of contraception across South Sudan.

Betty Lejukole, monitoring and evaluation officer, talks about the challenges South Sudanese women face in getting contraceptives: [LinkedIn](#), [Twitter](#)

Mary Lomin, finance and operations officer, has seen first hand how valuable voluntary access to contraceptives is for women in South Sudan: [LinkedIn](#), [Twitter](#)

Mary Apayi, kitting and logistics officer, shares the experience of a friend who recently benefited from access to contraceptives: [LinkedIn](#), [Twitter](#)

Also, the USAID Mission invited the project to participate in an International Women's Day radio broadcast. Margaret Lejukole, M&E Officer, represented GHSC-PSM South Sudan. Listen to or watch the broadcast [here](#).

B4. Maternal, Newborn, and Child Health



14 countries received MNCH health supply chain strengthening support in Q2 FY 2022.



Eight countries procured MNCH medicines and commodities in Q2. Since its beginning, the project has procured a total of **\$23.8 million in MNCH commodities, including \$28 thousand in Q2.**



Trained 499 health and supply chain workers from **108 local-level governments** and **391 birthing centers in Nepal** on proper oxytocin management in Q2.



Planned a series of **technical working sessions with global partners**, including United Nations Children's Fund (UNICEF), BMGF, PATH, Promoting the Quality of Medicines Plus (PQM+), and Medicines, Technologies and Pharmaceutical Services (MTaPS) aimed to **avail key child health commodities** for treating pneumonia and possible serious bacterial infection (PSBI), the leading causes of childhood mortality in Q2.

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 quarterly report summarizes achievements under the MCH task order objectives in Q2, 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 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.

GHSC-PSM's Q2 activities and accomplishments under these MNCH objectives are detailed below.

Provide international MNCH supply chain leadership and guidance

Developing new commodity chapters for MNCH procurement and supply manual

In 2019, GHSC-PSM published the [Manual for Procurement and Supply of Quality Assured Maternal, Newborn and Child Health Commodities](#) for procurement agencies and specialists as they establish quality assurance systems for procuring MNCH products. The manual includes useful technical information on a subset of priority MNCH products, such as key considerations for procurement and product specifications. Since the guide was published, additional products have been prioritized for MNCH, prompting GHSC-PSM to update the manual. In FY 2022, the project will add detailed technical specifications for antihypertensives, tranexamic acid (TXA), and other commodities. In Q2, GHSC-PSM kicked off work with the partner organization that will assist in updating the guide. Once the update is complete, GHSC-PSM will promote and disseminate the manual through its country offices and globally.

Developing the MNCH Commodity Integration Playbook for country systems used to manage priority MNCH risks

In Q2, GHSC-PSM began developing a playbook that will assist countries as they establish systems and processes to improve the uptake of new or underutilized MNCH commodities and specific formulations of those commodities. The project has issued a Request For Proposals to identify an organization capable of supporting playbook development. The playbook will capture project expertise garnered through years of MNCH technical assistance to countries, guiding governments as they update and tailor their MNCH management strategies and supply chain operations. The playbook will address decision-making and process improvements for MNCH commodity management to increase availability of affordable, quality-assured MNCH commodities at health facilities and other service delivery points.

Improving the management of postpartum hemorrhage commodities

Postpartum hemorrhage (PPH) continues to be the global leading cause of maternal mortality in FY 2022. Since 2017, WHO and other global partners have updated clinical recommendations for the prevention and treatment of PPH, including heat-stable carbetocin to prevent PPH and to broaden the use of existing legacy health commodities, including oral misoprostol and TXA. In response, GHSC-PSM continues to engage project staff, local implementing partners and national government

stakeholders to call attention to updated PPH global guidance and improve procurement and supply chain management of context-appropriate PPH commodities. Specific Q2 activities are described below.

Developing the PPH compendium resource. In Q2, GHSC-PSM developed a white paper documenting its collective resources and lessons learned from its work as a technical leader in availing and addressing barriers to availing quality PPH commodities. The paper shares global learnings from years of work across technical bodies and many country contexts and updates on recommended commodities for managing PPH. It also dives into case studies that demonstrate how specific countries have managed enabling environments and different supply chain structures to improve availability of PPH commodities and save mothers' lives. The white paper will serve as a one-stop shop for these lessons and provide easy access to all of the resources GHSC-PSM has developed in its years working to improve PPH commodity quality, availability and management. The paper will be completed in Q3 and GHSC-PSM will disseminate broadly thereafter.

MNCH supportive supervision visits in Malawi. GHSC-PSM conducted an assessment of Malawi's public sector supply chain in FY 2021, to identify high-risk procurement and supply practices that may compromise PPH commodity quality and availability. The project made several recommendations following the assessment including around oxytocin labeling for the correct temperature range, expanding the use of misoprostol when refrigeration is not available, and adjusting PPH commodity inventory policies and distribution schedules.

In Q1, GHSC-PSM shared the assessment findings and held a capacity-building session on oxytocin and misoprostol quality issues for supply chain staff and maternal health officials. As a follow-up, GHSC-PSM worked with Malawi's Directorate of Reproductive Health (DRH) to incorporate oxytocin quality elements into MNCH-focused supportive supervision visits that took place in Q2. During these visits, GHSC-PSM and DRH assessed warehouses' MNCH commodity stock management and availability. The team held discussions with key personnel, encouraging warehouse staff to submit accurate stock data to the MOH and adhere to good storage management practices in accordance with WHO guidelines. The project also supported DRH to conduct a district-level assessment of how MNCH commodities are managed at pharmacy and maternity wards. The exercise, conducted in late Q2, involved interacting with Safe Motherhood Coordinators and district pharmacy charges in all 28 districts of Malawi. Results from these visits will shape PPH activities in the quarters to come.

Supporting domestic wholesalers to improve access to quality MNCH commodities in the private sector

To reach health goals in the countries it supports, GHSC-PSM works with governments to improve the availability of quality health products. Private sector domestic wholesalers are a central actor in health supply chains, and are often the connection between manufacturers and points of dispensation. Domestic wholesalers are particularly crucial for MNCH, as they are often relied upon to supply countries' essential MNCH commodities. Organizations—including GHSC-PSM—recently engaged domestic wholesalers to improve their ability to source and distribute affordable, quality health products, to ultimately improve health outcomes. The project acts as a leader in this space, previously convening global leaders to discuss the role and needs of wholesalers. GHSC-PSM's Q2 activities to support domestic wholesalers and improve health outcomes are detailed below.

Supporting domestic wholesalers in Zambia. In Q2, GHSC-PSM concluded its planned work with the Zambian Pharmaceutical Business Forum (ZPBF), a non-profit association of pharmaceutical wholesalers, manufacturers and retailers that aims to help members effectively supply health commodities. Following the conclusion of six project-supported workshops to build organizational capacity in Q1, GHSC-PSM worked with ZPBF to develop short- and long-term work plans and a communications strategy in Q2.

By the end of Q2, the project had assisted the board of directors to refine their vision, hone organizational objectives, and re-focus on the investments needed to realize those objectives. As a result of the workshops, ZPBF committed to equitable and transparent governance approaches and inclusivity. This will help ensure representation of a range of pharmaceutical suppliers in ZPBF, help limit competitive inclinations, and establish trust among the association members. The association also agreed to improve collaboration with national systems to ensure the quality of products and enable a supportive environment for these commercial pharmaceutical entities. ZPBF has renewed focus on teamwork and unity within ZPBF to further successful engagement with the Zambia Medicines Regulatory Authority, the MOH and other entities. GHSC-PSM will continue to monitor ZPBF's achievements and progress on the work plan and identify opportunities for continued support.

Documenting wholesaler engagement and lessons learned. In Q2, the project's MCH task order partnered with the FP/RH task order to finalize a paper on the role of domestic wholesalers in improving availability of quality and affordable FP and MCH commodities. This paper examines the opportunities for (1) investing in these key actors and providers of commodities and (2) increasing efficiencies in performance that could drive down costs and lead to savings for governments and clients seeking care through private sector service delivery points and pharmacies. The paper considers how partners can help develop tools and systems for national oversight of pharmaceutical wholesalers as they provide and properly manage quality commodities. Findings will be disseminated at appropriate global fora and with GHSC-PSM MCH countries and will inform future investments through the project and other partners.

Co-hosting global technical discussions with MTaPS and PQM+ to improve the availability of commodities to treat childhood pneumonia and PSBI

To improve child health outcomes, skilled health workers must receive the medical supplies they need. In 2010, a global call to action established the [U.N. Commission on Life-Saving Commodities for Women and Children](#). The commission identified 13 commodities that could save the lives of more than six million women and children if they were more widely accessed and properly used. Among them were amoxicillin dispersible tablets (DTs) and gentamicin to treat pneumonia and PSBI in children under five. Unfortunately, many countries have not yet adopted these commodities into their national supply chains.

In Q2, GHSC-PSM met with UNICEF, MTaPS, PQM+, BMGF and PATH, among other collaborators on the [Child Health Task Force \(CHTF\)](#), to plan a series of technical discussions and work sessions to improve access to amoxicillin DT and gentamicin. The group prioritized three barriers to availing these commodities: quantification, use, and quality. In addition to coordinating the partner meetings on this topic, the project conducted the following to support the meetings in Q2:

- Collected and analyzed information through peer reviewed publications, gray literature and other documentation related to quantification and financing of amoxicillin and gentamicin to inform the technical discussions.
- Surveyed project country offices on barriers and challenges to availing the commodities.
- Met with a range of stakeholders including WHO, the UNICEF Community Health Roadmap team, and other implementing partners to discuss the barriers and challenges.
- Developed a meeting methodology and material to be presented to a global audience in the series of working sessions scheduled for May 2022.

Following the meetings and work sessions, GHSC-PSM and other USAID supply chain projects will develop a call to action paper and extend support to country teams as they implement activities to increase uptake of pediatric amoxicillin and gentamicin.

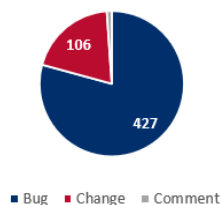
Support data-informed health supply chain decision making for MNCH commodities

Completed user acceptance training on the forecasting module of the QAT

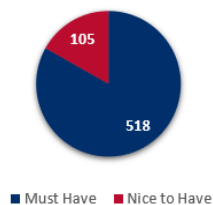
GHSC-PSM's QAT leverages new technologies—building on and replacing previous FASP tools PipeLine and Quantimed—to support countries as they forecast and supply plan for their health programs. In 2020, GHSC-PSM developed the QAT supply planning module and in 2021 rolled it out to 21 countries, six of which (Burkina Faso, Haiti, Liberia, Mali, Togo, and Zambia) are providing FASP technical assistance for MCH commodities. A key component of validating these modules before they can be widely used is user acceptance training (UAT). Critically, UAT helps verify that the software fulfills GHSC-PSM's business requirements. GHSC-PSM's UAT for the supply plan module was completed remotely due to the COVID-19 pandemic, which posed challenges; lessons from this initial UAT—such as how lack of coordination across testers in different locations can hinder testing—were applied when the project began developing the second module on forecasting, in Q2 FY 2022.

The project conducted the forecasting module UAT (UAT-1) from January 25 to February 3, 2022, using a hybrid testing approach. With funding from the MCH task order, GHSC-PSM traveled to India to work with the QAT development team in person. The remaining testers participated in UAT-1 remotely from the US and Benin. Teams tested 326 scenarios during UAT-1 and categorized them as “passed,” “failed,” or “on-hold.” The project tracked and classified all observations as either a bug, change, or comment. Testers made over 600 observations and caught over 400 bugs. A second UAT workshop will take place in early Q3, applying feedback from UAT-1 and validating the remaining functionalities.

Active Observations Classification-
539



QAT Mod2 UAT I Observations-
623



Given the success of UAT by the end of Q2, full module rollout is on track for May 2022. GHSC-PSM will train four MCH-task order-supported countries on the forecasting module in FY 2022: Burkina Faso, Haiti, Mali and Zambia.

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.

The table below depicts countries that collected EUV data and submitted EUV reports to USAID/W and in-country stakeholders in Q2.

Countries that collected EUV data	Ethiopia, Ghana, and Nigeria
Countries that submitted EUV reports*	Burkina Faso, Guinea, Liberia, Mali, and Zambia

**Reports have not been formally approved by USAID/W*

Global EUV leadership. GHSC-PSM held a series of EUV technical working group meetings in English and French in Q2 that provided guidance to countries on EUV data collection, data validation, and the report writing process in preparation for changes to the EUV, to be rolled out in April 2022, that will improve the usability of the data collected. The project also finalized the MNCH EUV report layout, in accordance with these EUV changes. This included providing feedback on how indicators should be presented visually and finalizing footnotes to ensure that EUV findings are presented with clarity and purpose for end users.

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 2020, GHSC-PSM conducted a data use survey in 15 countries, which indicated that countries often face the time-consuming challenge of manually entering, consolidating, and analyzing logistics data. In response to these countries' needs and desire to scale up use of data for MNCH commodity management, GHSC-PSM developed a catalog of robust analytics tools in FY 2021 that project-supported countries use to inform MNCH commodity management decisions. The catalog describes each tool, the platform it uses, the data it requires to function, and a point of contact for the tool. The catalog will be particularly helpful to countries with nascent eLMISs, providing a blueprint of analytics tools that already exist to support key supply chain decisions.

In Q1 FY 2022, GHSC-PSM began to operationalize the catalog in Nepal to improve MNCH commodity management through data analytics. The project is supporting Nepal to select, adopt, and adapt analytics tools from the catalog based on their supply chain needs. GHSC-PSM met with stakeholders to assess Nepal's eLMIS rollout and understand the MNCH supply chain challenges that the country faces. In Q2, the project temporarily paused its activity in Nepal due to competing priorities and resource limitations on the ground.

Despite the pause in Nepal, the project moved work forward with the data catalog in a different area. In Q2 the project refactored the Consumption Anomalies tool that is being used in Zambia to identify inaccurate and incomplete logistics data. Refactoring aims to generalize the software code associated with this tool, making it more robust and allowing it to function beyond the original scope. This process facilitates information sharing across the project because it allows the refactored analytics tools to be shared, reused, and integrated with different data systems across countries. In Q3, two additional analytics tools from the catalog will be refactored. The project will then collaborate with the Government of Nepal to implement the refactored tool(s) that meet the country's supply chain needs.

In addition to refactoring, the MCH task order continues to monitor and improve the data catalog through feedback from project teams across the globe. The team is further disseminating the data catalog within GHSC-PSM to enable information sharing and generate interest.

Improve 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 14 countries²¹ in FY 2022. Specific country achievements are described below.

²¹ GHSC-PSM is providing MNCH technical assistance to 14 countries in FY 2022 to: AFRICA: Burkina Faso, Ethiopia, Ghana, Guinea, Liberia, Malawi, Mali, Mozambique, Nepal, Nigeria, Pakistan, Rwanda, and Zambia; CARIBBEAN: Haiti

Assessing supply chain barriers to availing MNCH commodities in Nepal. Following a suite of MNCH supply chain assessments that the project conducted in Nepal in Q1 (at central, provincial, district and local levels), in Q2 GHSC-PSM began to address the assessment findings that oxytocin was not being stored appropriately and worked with seven provincial governments to conduct oxytocin management trainings. The project also led an orientation on the requirements for maintaining recommended temperature for oxytocin during procurement, storage, and distribution along with supply chain management for 499 people from 108 local level governments and 391 birthing centers. Lastly, GHSC-PSM began distributing education and communication materials with oxytocin messages to warehouses of all supply chain tiers and all birthing centers in Nepal.



Figure 1 Head Nurse at Surkhet Health Office in Nepal, Ms. Sangita Khadka, stores oxytocin in the refrigerator following the GHSC-PSM training. Photo Credit: Bijay Dhakal/GHSC-PSM

Strengthening the MNCH supply chain in Ghana. With funding from the MCH task order, GHSC-PSM provided technical assistance to the USAID Advancing Nutrition project in Q2. The project conducted a training of trainers for 53 nutrition focal persons from 17 districts in Northern, North East, Upper East, and Upper West regions of Ghana on nutrition commodity management. In the next phase, the now-trained focal persons will use the training plans they developed during GHSC-PSM's training to cascade their learnings to health facilities. The project also used the district-level training to address gaps in the trainees' capacity to use GHiLMIS so that they can support the system's rollout and use within their jurisdictions. GHSC-PSM will continue to collaborate with the USAID Advancing Nutrition project to strengthen the use of standardized LMIS and provide guidance to improve nutrition commodity management in beneficiary facilities.

Conduct ad hoc strategic procurement to increase availability of quality-assured MNCH commodities

Over the course of Q2, GHSC-PSM supported three countries²² in procuring priority newborn and child health products and started the process for a new large order of essential medicines for DRC.

²² GHSC-PSM procured newborn and child health commodities for three countries in Q2 FY 2022: DRC, Nigeria, and Rwanda.

PROGRESS BY OBJECTIVE

C1. Global Commodity Procurement and Logistics



Procured \$238.1 million in health commodities in Q2. Total values for the life of the project are over **\$4.4 billion**.



Delivered 1,231 line-item orders in Q2, with a value of **\$200 million**.



Delivered 88 percent (72 percent COVID-impacted) 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 87 percent (77 percent COVID-impacted) on-time and in-full**.

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

GHSC-PSM's procurement strategy focused on three primary objectives in Q2 to appropriately manage the impact of COVID-19 on global supply chains:

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 strong OTD and OTIF while operating the global supply chain within the context of the continuing impact of the COVID-19 pandemic and in the face of unforeseen challenges. The war in Ukraine, the closure of airspace, and sanctions imposed on Russia and Belarus had a marked impact on supply chains around the world. GHSC-PSM focused on performance and managed overall commodity and supply chain costs through the following initiatives:

Preventing country- and site-level shortages

The project mitigates potential shipping delays and shortage risks by prioritizing commodities based on the stockout risk and the depth of the programmatic impact in the event of shortages. GHSC-PSM's methodology to prevent shortages includes:

- Placing replenishment orders earlier than usual.
- Revising monthly forecasts while taking into account production capacity.
- Requesting GADs of existing orders sooner.
- Coordinating supply with other global partners to prioritize critical countries.
- Releasing orders from the RDCs for commodities with longer lead times.
- Working with countries to move stock closer to the facility level to liberate space higher in the supply chain.
- Reprioritizing order allocations.

Emergency ARV Procurements

In Q2, GHSC-PSM responded to several urgent orders for ARVs to support PEPFAR countries. A key delivery was to Ukraine. Immediately following the Russian invasion of Ukraine, GHSC-PSM delivered 209,600 90-tablet bottles of dolutegravir/lamivudine/tenofovir DF 50/300/300 mg tablet to Lviv to help ensure an uninterrupted supply of ARVs to PLHIV. This involved tremendous collaboration between the USAID/Ukraine Mission, 100% Life, the Ukrainian Center for Public Health, and multiple logistics partners. The project sourced 10 additional ARVs valued at \$1.2 million in Q2 and staged nine for delivery in Q3.

Also, the government of Dominican Republic's ARV orders were impacted by COVID-19. At PEPFAR's request, GHSC-PSM procured and delivered five emergency orders of adult ARVs and PREP products in Q2. GHSC-PSM also sourced and delivered Nevirapine 10 mg/mL Suspension and Darunavir 600 to Kenya in response to a reported stockout. GHSC-PSM delivered another emergency order for six ARVs to Trinidad and Tobago. This delivery included three low-volume pediatric ARVs that are often challenging to source. Lastly, 44,000 bottles of TLD were delivered to Nepal within eight weeks.

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 analysis, 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.

Supplier relationship management

In Q2, in addition to regular order status communications across the supplier base, GHSC-PSM conducted strategic business reviews with seven key suppliers. GHSC-PSM continues to proactively manage operations affected by the market, supply chain, and logistics factors, including the continuing impacts of COVID-19 and more recently the war in Ukraine. Supplier meetings update the project on the impact of regional shutdowns, logistical challenges, and other issues on production and delivery schedules, while commodity and supplier risk profiles inform performance assessments and order allocation strategies.

RDC operations

In Q2, GHSC-PSM leveraged the three RDCs to deliver more than \$32 million worth of commodities to 24 destination countries with a 95 percent OTD (93 percent COVID-impacted). As the COVID-19 pandemic continued to disrupt the global supply chain, the project's strategy to use RDCs and pre-position key commodities across task orders ensured continued access to commodities with minimal/no disruption. The project used RDCs in Q2 to deliver more than 36 percent of TLD while enabling HIV MMD rollout.

At the request of USAID, GHSC-PSM's Belgium RDC quickly implemented an arrangement to store export products for up to 90 days for another donor in cases where the manufacturer may have space constraints. In this case the manufacturer indicated that its facilities were becoming congested and it would have to stop production for all its clients if products for the other donor were not moved out. Demand for these products is high, and a drop in manufacturing output would have threatened global supply. The project was rapidly able to store the products procured by the other donor in the GHSC-PSM RDC, allowing manufacturing to continue and thereby avert a potential global shortage.

Decentralized procurement (DCP)

In Q2, GHSC-PSM managed a large volume of orders through DCP. The project achieved 91 percent OTD (63 percent COVID-impacted) for the quarter despite COVID-19 challenges, which caused shortages and logistics constraints that affected DCP commodities throughout the global supply chain. An example of issues and solutions include:

- **VL/EID supply:** GHSC-PSM monitors COVID-caused constraints on global supply of VL/EID reagents and consumables. This includes COVID-related logistics constraints, particularly affecting South African Development Community countries due to significant reductions in commercial air freight lanes, particularly for cold and frozen orders. As noted in Q1, some manufacturers of reagents continued to experience supply shortages in Q2. The project is actively taking measures to mitigate the impacts on affected countries and is distributing VL/EID demand across all available platforms until this constraint is relieved.

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 GS1 standards. These supplier requirements include:

- Assigning Global Trade Item Numbers (GTINs) to trade items and Global Location Numbers to business entities and locations.
- Labeling trade item packaging levels with GS1 barcodes encoding GTIN, batch/lot and expiration date.
- Labeling logistic units with GS1 barcodes encoding Serial Shipping Container Code (SSCC).
- Exchanging trade item master data through the Global Data Synchronization Network (GDSN).

In Q2, the project saw progress in supplier implementation of these requirements, thus laying the foundation for global and national supply chains to further enhance their processes and systems using GS1 standards. Advancing implementation 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 118 items to the GHSC-PSM catalog.
- Collected master data for 150 new items through the GDSN, and maintained data on existing items.
- Sent and received almost 2,000 messages in the GDSN.

Quality assurance

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

- Managed multiple quality incidents. There were 41 open incidents, including seven recalls across TO1/TO3/TO4. The project facilitated collaboration across internal and external teams to expedite activities, including product quarantines for patient safety and product replacement to avoid stockouts. The number of incidents does not necessarily reflect product rejection, as quality assessments are conducted based on the situation and recommendations are then made to USAID for concurrence to release or reject impacted products for distribution.
- Identified areas for process and communication improvements between the project, suppliers, and GHSC-QA in reporting of incidents related to temperature excursions by the suppliers and project staff.
- Conducted training on product quality incident procedures for GHSC-PSM staff (Burundi, Liberia, and GHSC-PSM HQ) to promote incident reporting and ensure processes are followed.
- Worked with GHSC-QA to streamline and optimize lab commodity procurement from local eligible suppliers.
- Worked with GHSC-QA to provide input and support toward COVID-19–related commodity procurement.

QA for malaria commodities

In Q2, GHSC-PSM completed three OOS investigations and provided PMI with recommendations that comply with product safety and efficacy while fostering a robust QMS for GHSC-PSM and its suppliers. These included:

- Sterility OOS for an artesunate product for which the project recommended rejection of the OOS batches due to enhanced patient safety risk.
- Mesh size for an LLIN product for which the project recommended acceptance of the batch due to low impact and safety and efficacy.
- Water content OOS for artesunate injectable for which the project recommended acceptance of the batch due to inconsistent results and data support no impact on product quality.

In Q2, GHSC-PSM managed the delivery of LLINs to Rwanda for countrywide distribution. GHSC-PSM worked with global partners including the Global Fund and UNICEF to enhance quality assurance for LLINs.

For more detail, see section B2. Malaria.

Procurement, transportation, and commissioning of four mobile BSL-2 laboratories and staff training

To strengthen Pakistan's capacity to diagnose COVID-19 cases, GHSC-PSM procured four mobile BSL-2 laboratories. These laboratories will strengthen the public sector diagnostic capacity, especially in remote and hard-to-reach areas. In Q2, the project, in close coordination with Air Filter Maintenance Service (AFMS, the lab vendor), worked meticulously to ensure successful handover of the mobile laboratories to the Government of Pakistan at the end of Q3. To that end, in preparation for deployment, the project coordinated with the National Institute of Health (NIH), AFMS, and lab experts to draft modalities for handover, operations, safety and security, staff training, development of a lab manual, guidelines, SOPs, and an Enterprise Lab Solution. The project also engaged consultants to develop biosafety and biosecurity guidelines and SOPs.

On March 28, the labs were shipped from South Africa and are expected to arrive in Karachi by mid-May. The project is in the process of acquiring no objection certificates (NOCs) and tax waivers from relevant government agencies to ensure smooth receipt into the country.

Impacts of COVID-19 on freight and logistics

Origin challenges

COVID-19 cases continue to impact the supply chain industry although the project saw an easing of restrictions in some countries. Rising infections and lockdowns in key, high-volume origin points, such as Hong Kong and Shanghai, affected shipping capacity and restricted the flow of shipments from air and ocean ports. China's zero-COVID policy and practice of locking down entire districts at the first sign of new infections is causing the most severe disruptions. COVID-19 impacts paired with restricted schedules and congestion tied to Chinese New Year impacted many international bookings in Q2.

Airfreight

Airlines added flights throughout Q2, but the Russian invasion of Ukraine had a marked impact on flight capacity as Ukraine, Russia, and the surrounding regions saw carriers adapt schedules due to flight re-routing. Damage to the world's largest aircraft AN-225 owned by Volga Dnepr and international sanctions on Russian aircraft have had a direct impact on Volga Dnepr. Along with its subsidiary, Airbridge, Volga Dnepr is one of the world's largest outsize and heavyweight charter airlines, and this, in conjunction with COVID-19 impacts on passenger flights, has led to a 10 percent deficit in air cargo capacity.

Both the historical COVID-19 impacts and Ukraine invasion led to schedule challenges and reduced air freight capacity and created unpredictable rate fluctuations. Airlines responded by focusing their routes on popular destinations and using various aircraft types to adjust to demand. While overall airline scheduling shows a rebound, one area of concern continues to be reduced capacity to already underserved locations, which could worsen as fewer freighter aircraft serve these routes. This has led to an imbalance, as more popular regions return to normal air freight operations, while service to underserved destinations remains slow.

Ocean freight

Space on ocean vessels and equipment remained tight due to frequent canceled sailings and some ports being omitted from the schedule at the last minute. Carriers are overcommitted and are limiting booking acceptance and rolling shipments. Vessel delays are creating unreliability in scheduling, which had a significant impact in Q2. Major ocean carriers such as Maersk, reacted to the Ukraine conflict by canceling services, both sailings and containers, to Russia. Oil prices and fuel surcharges increased dramatically at a time when rates had become somewhat stable, while at record high levels.

As mentioned earlier, lockdowns at origins, especially in China, and average wait time of over 18 days on the U.S. West Coast affected container availability albeit at reduced levels, as well as port congestion and erratic carrier scheduling. These port challenges are compounding scheduling unreliability and increasing transit times.

Destination challenges

Residual coup impacts, particularly in Mali, are affecting deliveries in destination services. Port congestion is most severe in Tanzania, where port infrastructure is being renovated. Weather also played a large role in negatively impacting delivery activities in Madagascar, Malawi, Mozambique, and Zambia, as cyclones and tropical storms damaged road infrastructure. COVID-19-related destination challenges were mostly in Uganda with driver testing leading to longer clearance delays.

C1b. Project Performance

In this section, we summarize findings on key indicators of 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

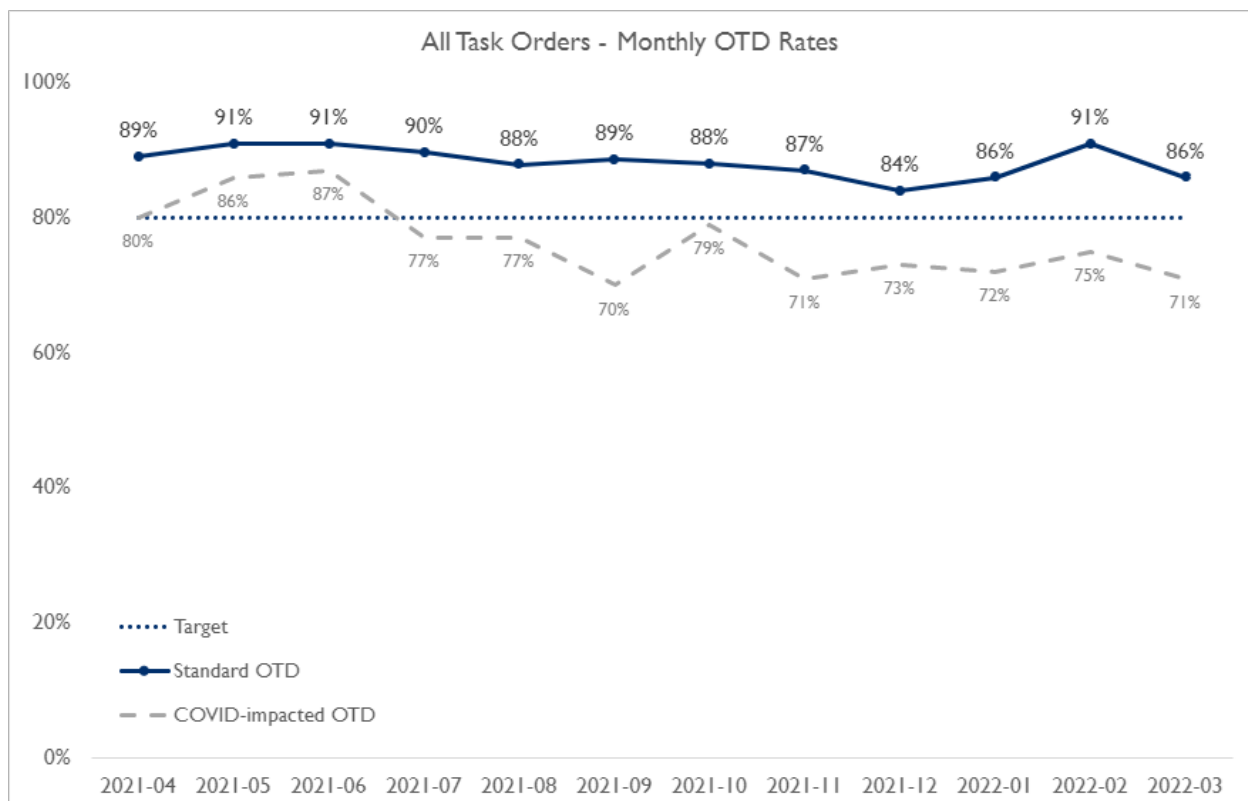
OTD is a more accurate reflection of recent performance, while OTIF is a lagging indicator as late orders due in prior periods get delivered.

In Q2, GHSC-PSM OTD was 88 percent (72 percent COVID-impacted) and OTIF 87 percent (77 percent COVID-impacted) for the quarter, the 12th successive quarter that OTD has been above 85 percent (see Exhibits 18 and 19).

During the COVID-19 pandemic, GHSC-PSM presents two versions of OTD indicators:

1. According to the indicator definition, the “standard” version is calculated as laid out in the [project’s monitoring and evaluation plan](#) and following all associated policies.
2. The “COVID-19-impacted” version follows the same rules and definitions as the standard indicator but removed the “control” for pandemic impacts to demonstrate the adverse effect of COVID-19 on OTD from Q3 FY 2020 to date on GHSC-PSM shipments.

Exhibit 15. January 2021 through March 2022 monthly OTD



At the end of Q2 FY 2020, the number of COVID-impacted orders increased significantly and continues to adversely affect OTD. The high degree of uncertainty and the extreme volatility in

global supply chains caused by the pandemic continues to impact orders. This impact is expected to continue through this FY 2022.

Exhibit 16. January 2021 through March 2022 monthly OTIF

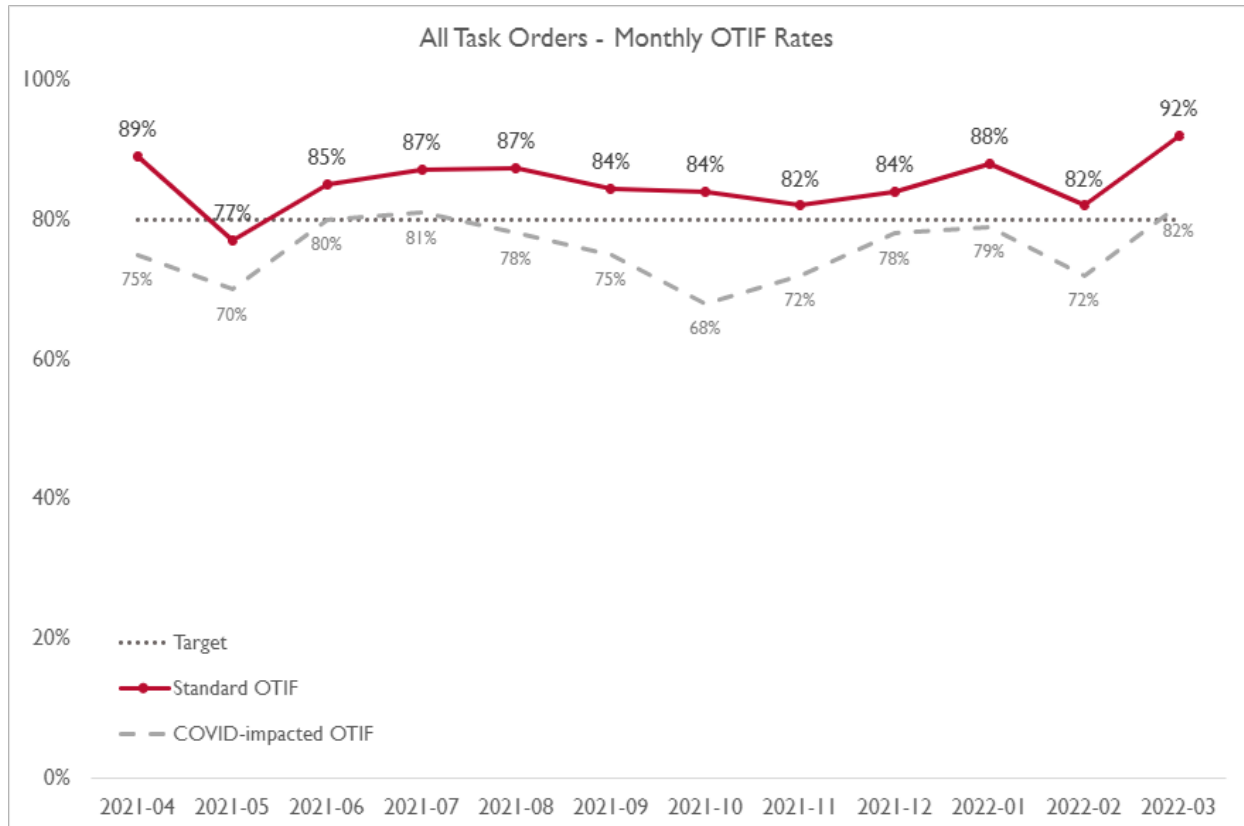


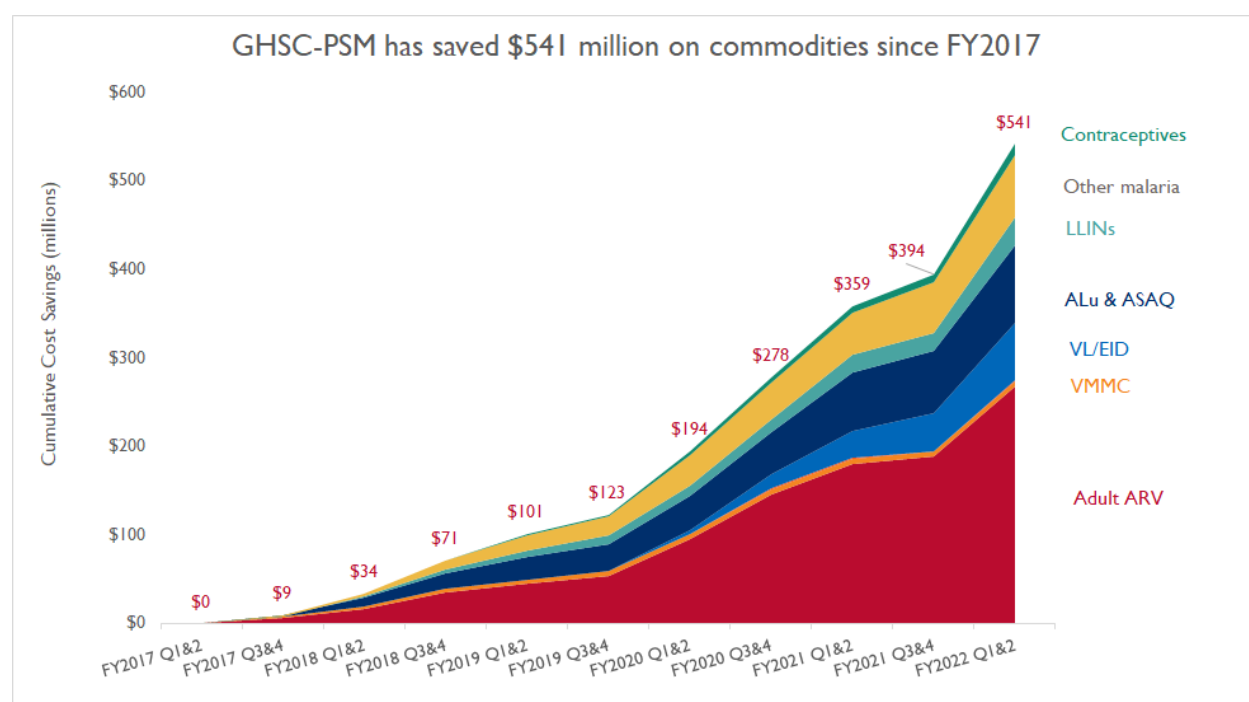
Exhibit 17. Quarter over Quarter Utilization of RDC

ORDER_FULFILMENT_METHOD	DCP	FY22 Q1		FY22 Q2	
		LINES	% of LINES	LINES	% of LINES
Direct Drop	N	778	53.3%	869	60.8%
RDC	N	78	5.3%	94	6.6%
Direct Drop	Y	604	41.4%	466	32.6%
Total		1460	100%	1429	100%

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 \$541 million on commodities over the life of the project, as shown in Exhibit 3.

Exhibit 18. 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, such as condoms and mRDTs, so the USG can benefit from a competitive supplier base. Additional savings have also accrued as prices for these commodities have risen slower than the general rate of inflation.

Cost Savings on Logistics

Open competition in freight lanes. GHSC-PSM saves money on logistics by managing through a fourth-party logistics (4PL) model that competes lanes between third-party logistics (3PL) shipping companies to improve service and reduce costs. This leads to cost savings on shipping rates versus an alternative approach wherein there is limited or no competition for shipping lanes (a simple 3PL approach) through scale and competition.

Exhibit 19. Cost Savings Through Open Competition in Freight Lanes

Task Order	Benefits of Competing Freight Lanes
Task Order 1	\$33,439,958
Task Order 2	\$8,234,910
Task Order 3	\$703,957
Task Order 4	\$34,542
Grand Total	\$42,413,367

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.

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 there would be nominal impact on that pricing. 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. For this 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 current market values. Using these adjusted rates, the final cost savings figures were calculated as the difference between the rates awarded to the selected 3PL and the average of the two most expensive 3PLs, similar to previous years.

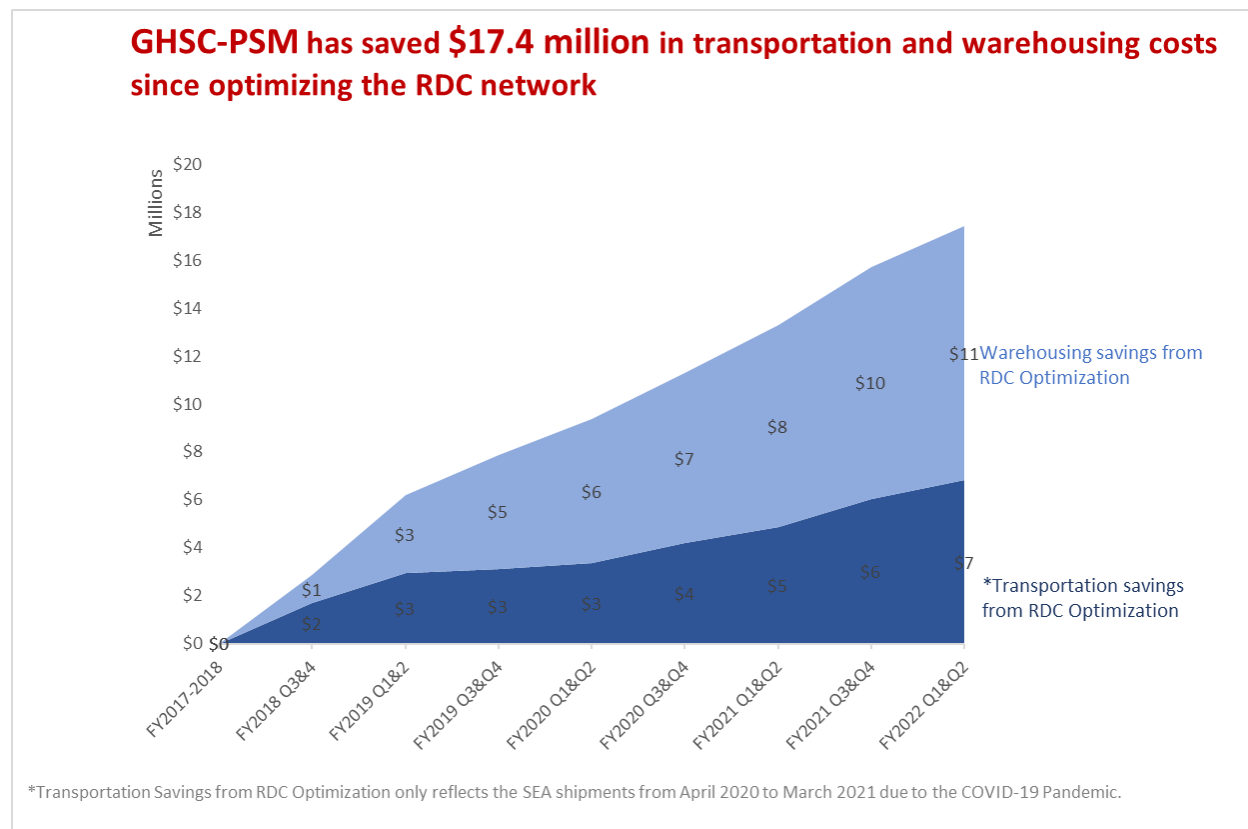
COVID-19 continues to impact the freight logistics market for air and sea shipments. Due to the fluctuations in logistics costs throughout the pandemic, 3PLs were unable to honor annual rates. The project employed spot bids on air and sea lanes to maintain competition among 3PLs while still meeting market demand. *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, Singapore, Netherlands, and South Africa). These savings are in addition to cost savings generated from negotiating lower shipping rates.

The project also saves money on freight by implementing a 4PL model, competing all lanes and actively managing four 3PLs that have serviced 27,098 lanes over the life of the project. The scale of the opportunity attracted many qualified freight forwarders, and this competition drove down prices. More information on this analysis appears in Section C1b.

GHSC-PSM saved \$17.4 million in transportation and warehousing costs since optimizing the RDC network. In Exhibit 5, the light blue represents warehousing savings from RDC optimization, and the dark blue represents transportation savings from RDC optimization.

Exhibit 20. RDC Optimization Cost Savings



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 currently used by global health procurement agents 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.



Discarded cartons of TLD bottles

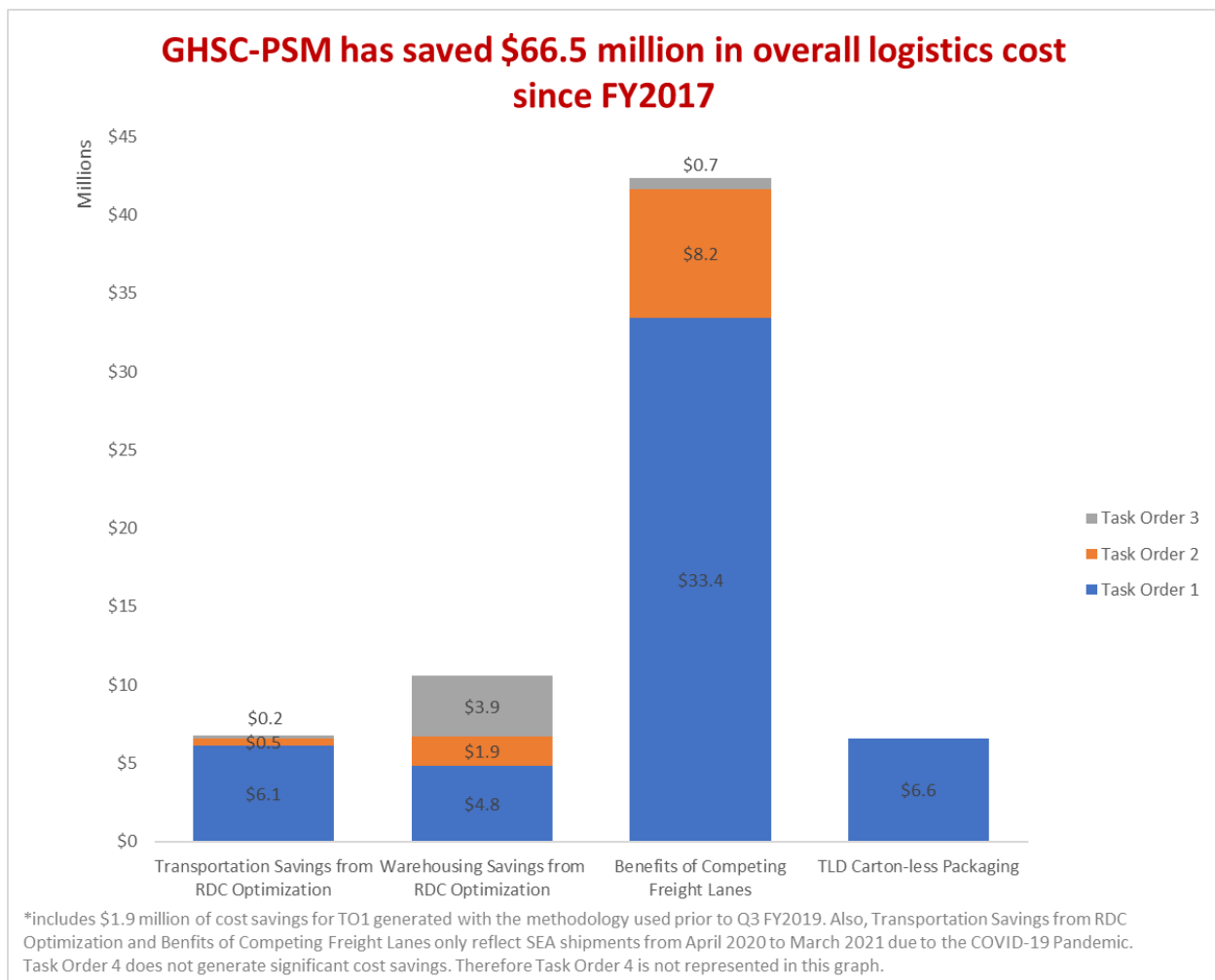


TLD carton-less packaging

Beginning in 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 \$2.3 million in logistics cost by sea. This also reduces total weight of shipments, saving \$4.3 million to date in logistics costs by air.

Total cost savings on logistics to date were \$66.5 million, which includes \$17.4 million in transportation and warehousing costs from optimizing the RDC network, \$6.6 million from strategic packaging in TLDs, and \$42.4 million from competing freight lanes. (See Exhibit 4.)

Exhibit 21. Logistics Cost Savings Breakdown



3C2. Systems Strengthening Technical Assistance



Assisted 51 countries with health supply chain systems strengthening over the life of the project.



Provided **technical feedback on 158 supply plans this quarter** to strengthen national supply planning capabilities.



Published the “Key Considerations for Traceability Models Quick Guide,” a resource for countries contemplating implementation of centralized approaches for pharmaceutical verification, tracking, and tracing.

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. To support this goal, headquarters-based technical specialists work with in-country teams to define systems strengthening strategies appropriate to the local context that can be realistically achieved. Emphasis is placed 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

GHSC-PSM is seeing continued growth in the demand, uptake, and use of existing analysis tools that were developed in other countries to be configured and adapted to new countries. This allows previous investments in management information systems to be increasingly leveraged, enabling countries to expand their use of data and facilitate improved decision making in their day-to-day operations and higher-level strategic development. The project continues to facilitate this process by designing and adapting proven analytic tools that automate analytic processes, so that analysis is timely, repeatable, and transparent, and creates a positive feedback loop for rapid data use.

GHSC-PSM is implementing a data science strategy across multiple countries to meet individual country needs and make these tools available to additional countries that may benefit from them. The project continues to develop advanced analytics tools that leverage open-source platforms, such as Python, or readily available software, such as Microsoft Excel, allowing local institutions to easily adopt, use, and maintain such tools with limited ongoing technical support.

The advanced analytics program is cross-cutting and, as such, works in close collaboration with other systems strengthening programs to support in-country stakeholders. In Q2, there were two such examples of this, with warehousing and distribution in **Burundi and Rwanda** and laboratory networks in **Burundi and Uganda**.

GHSC-PSM provided remote support to Angola, Burundi, Eswatini, Ethiopia, Haiti, Liberia, Malawi, Namibia, Niger, Rwanda, Uganda, Zambia, and Zimbabwe in Q2. Below are two examples of how the project worked in partnership with other HSS teams to provide analytic resources and strengthen the use of data for decision making and action:

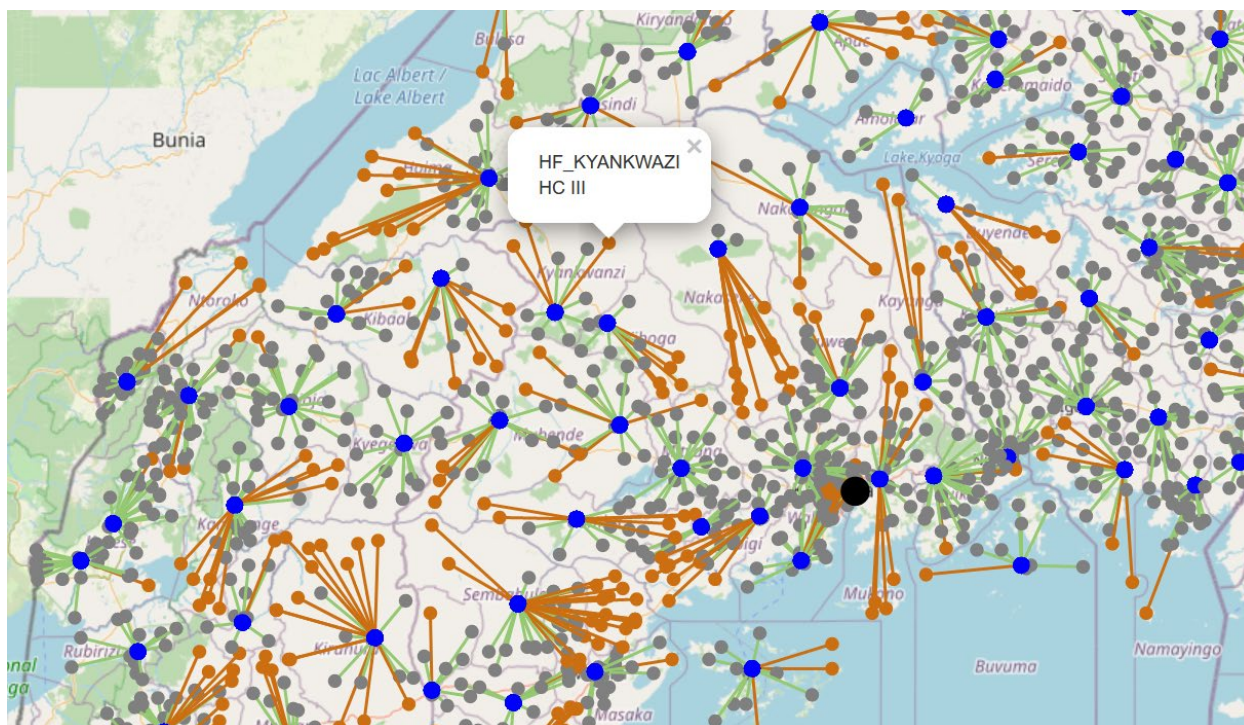
Rwanda: The project's Advanced Analytics and Warehousing and Distribution programs conducted a warehouse capacity assessment with local counterparts at the Regional Medical Store. The assessment identified the need to build capacity to use volumetric information to determine how much viable storage space is available to allow smooth and efficient movement of commodities. In general, the available space takes up about 30 percent of gross area in a storeroom. GHSC-PSM developed an interactive Excel-based tool to assist teams in determining and understanding the viable storage space within a storage area.

Exhibit 22. Storage Space Estimator

A	B	C	D	E	F	G	H	I
Storage Space Estimator								
Adjust on the YELLOW boxes						Gross Space m3	Estimate Storage Space m3	Percentage
	How much space available for storage?					1000	320	32%
Step 1.	Is this warehouse space or storeroom				Storeroom			
	What is Dimension of the room?							
	Length (metres)		10		Floor Space	250		
	Width (metres)		25		Cubic Space	1000		
	Height (metres)		4					
Step 2.								
Type	Storeroom							
Question								
	1 Are there shelves in storeroom?				Y	N/Y		
	2 Are the shelves just along the walls?				N	N/Y		
	3 What is the depth of shelves				0.7			
	4 What is the height of shelves				0.8			
	5 How many levels of shelves				5			
	6 What is aisle width?				1.2	Standard is 1.2m		
	7 What is width shelf units?				0.80			
	8 What is the % of non-storage (eg entry)				15%	Standard is 15%		
	9 What is pallet width?					Standard 1.2		
	10 What is pallet height?					Standard 1.8		

Helps teams estimate the available space for pharmaceutical storage.

Uganda's MOH requested a map showing all lab sites that were farther than 40 kilometers from hub locations, as these sites are considered at risk of having longer than desired turnaround times for receiving laboratory test results. Previously, the MOH had received only static maps, which made it difficult to identify at-risk sites among the more than 2,500 sites. GHSC-PSM generated interactive maps that can be used in web browsers and offline for the MOH to rapidly identify at-risk areas for discussion and action. With this new tool, the MOH, CDC, USAID, and other stakeholders can interact with available data to better understand and redesign the diagnostic network.



Uganda’s MOH uses interactive maps like this to identify sites at risk of delayed test results, helping redesign the diagnostic network.

Global standards and traceability

GHSC-PSM’s support for implementing GS1 standards aims to enable trading partners—including manufacturers and suppliers, logistics providers, regulatory agencies, medical stores, and health facilities—to operate from the same high quality master data.

GHSC-PSM provided technical support to eight countries in Q2 – Ghana, Malawi, Namibia, Nigeria, Rwanda, Uganda, Zambia, and Zimbabwe – to support their adoption of GS1 standards for product identification, location identification and data exchange. More information on standards implementation within the project can be found in Section C1. Global Supply Chain and in the Management Information Systems section below.

In Q2, GHSC-PSM published the “Key Considerations for Traceability Models Quick Guide,” a resource that provides key considerations for countries contemplating the implementation of centralized approaches for pharmaceutical verification, tracking, and tracing. The resource is included in the GHSC-PSM Traceability Planning Framework Toolkit.²³

Adopting global standards can enable countries to reduce costs, enhance efficiency, and improve the availability of health commodities in their public health supply chains.

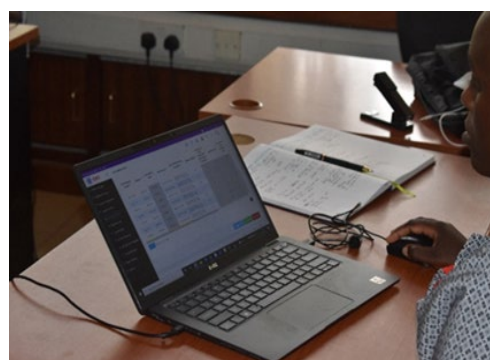
²³ <https://www.ghsupplychain.org/globalstandards>

- In **Ghana**, the project partnered with the MOH/Ghana Health Service to finalize the Ghana National Pharmaceutical Traceability Strategy. In Q2, the project facilitated a workshop to formalize a steering committee to oversee implementation of the traceability strategy.
- In **Malawi**, the Malawi MOH hosted a four-day workshop to review and advance traceability implementation in Malawi. GHSC-PSM delivered targeted training to key stakeholders, including the government, donor partners, and USAID, on concepts related to GS1 standards, product master data management, traceability governance, and traceability regulation and policies. The training was in response to high government staff turnover prompting the need to raise the knowledge base for traceability implementation. Also, GHSC-PSM provided guidance to workshop participants in finalizing the development regulations and guidelines for traceability initiatives.
- In **Rwanda**, the Rwanda FDA hosted a five-day workshop to finalize the development of the regulations and guidelines for implementing the traceability initiatives. The workshop included attendees from Rwanda FDA, USAID, UNICEF, UNFPA, private sector partners, and GS1 Global. GHSC-PSM delivered a training on traceability and facilitated discussion on how identifying, capturing, and sharing of GS1 Healthcare standards can be incorporated in these regulations.
- In **Zambia**, GHSC-PSM worked with the MOH to bolster national traceability objectives by implementing a National Product Catalog (NPC). In Q2 the NPC tool was deployed and GHSC-PSM conducted a user acceptance training to test the tool with MOH appointed data stewards. The project also developed SOPs and cleaned and finalized the final product master data file to be hosted in the tool. The tool establishes a single source of truth for product master data to be accessed by key government stakeholders, including the Zambia Medicines and Medical Supplies Agency. Furthermore, GHSC-PSM supported the Zambia Medicines Regulatory Agency by incorporating industry feedback on draft identification and labeling guidelines, thus making progress on policy and regulations to support traceability efforts.

Forecasting and supply planning

GHSC-PSM supported FASP assistance to help institutionalize processes so countries can move from relying on external technical support to developing their own fully integrated FASP capabilities. This included remote quantification assistance, training, and supply plan monitoring support.

The FASP team supported the **Burundi** project office in completing a quantification for HIV/AIDS commodities, including ARV, RTK, TPT, and essential medicines for the treatment of opportunistic infections, in preparation for its COP regional planning meetings (RPM) for FY 2023 (COP22).



A QAT user in Uganda. Credit: GHSC-PSM

GHSC-PSM continued rolling out the QAT. QAT's supply planning module is a modernized solution for country-led quantification that leverages new technologies and has enhanced features over the existing supply planning tool, PipeLine, and will eventually replace it. In Q2, the project facilitated

two training workshops for Guinea and Francophone Task Order (FTO) country staff from Burkina Faso, DRC, Niger, and Togo. The Guinea training took place in person, while the FTO cohort training was conducted through a remote workshop.

The project supported the automated transfer of FP/RH supply plans from QAT to the VAN (see section B1 FP/RH) and integration with GHSC-PSM's enterprise resource planning (ERP) platform. Integration allows program managers to link USAID-funded shipments in their supply plans to shipments in the ERP for automated shipment updates. By the end of Q2, 2,038 shipment lines had linked to 79 different supply plans from 21 countries. A total of 21 FP/condom QAT supply plans went directly to the VAN through the automated integration.

As GHSC-PSM's QAT users became more skilled, they began rollout to local stakeholders. In Q2, project country offices provided QAT training to government stakeholders in Eswatini, Nigeria, and Sierra Leone. GHSC-PSM also provided targeted, program-specific technical support to help countries transition country PipeLine supply plans to QAT. By the end of Q2 2022, 23 countries submitted 110 supply plans through QAT, with 35 additional supply plans in the process of being onboarded, and additional countries and supply plans to be added later in FY 2022. See more about supply planning submissions in C2a. Project Performance.

A key component of ensuring the sustainability of QAT is the wide user adoption of the tool. To this end, GHSC-PSM aims to engage multiple health supply chain partners and stakeholders to build a broader user base for QAT. In Q2, GHSC-PSM continued discussions with UNICEF, which is interested in using QAT for supply planning of nutrition products. At the end of Q2, QAT users numbered 511 worldwide.

Furthermore, GHSC-PSM:

- Continued to provide FASP support to USAID/W, USAID Missions, and GHSC-PSM country offices during the PEPFAR COP regional planning meetings for FY 2023 (COP22).
- Completed a key milestone in the development of the upcoming QAT forecasting module (module 2) to be launched by Q3 FY 2022. GHSC-PSM staff participated in the first of two user acceptance testing (UAT) workshops.
- Completed development of online, self-directed training for QAT supply plan viewers to be launched in early Q3 and posted on the GHSC-PSM website.

In **Ethiopia**, the use of a new Excel-based TB lab quantification tool has reduced the quantification of TB lab commodities from one or two months to two to three days. Management of TB lab commodities has been challenging because of the lack of a standard list of related products and a reliable tool to forecast TB lab commodities. As a result, quantification was implemented based on supply chain managers' judgment. The introduction of this new tool, which GHSC-PSM helped develop, aims to reduce wastage and frequent stockouts of TB lab commodities.

In **Guinea**, GHSC-PSM collaborated with the NMCP and the National Directorate of Pharmacy and Medicine (DNPM) to organize a training workshop for 15 QAT trainers from various local partners.

After the training of trainers, they provided training to 22 QAT users and supply managers from national health programs and implementing partners.

For the first time ever, **Kenya** has a full picture of its financial requirements for health products and technologies to adequately meet the health care needs of its people. The MOH, through the Division of Health Products and Technologies (DHPT), realized the need for a harmonized quantification for the whole country as available data from counties revealed disparities due to the different approaches used in each county. With the technical support of GHSC-PSM and the oversight of the MOH/DHPT, county Departments of Health undertook a national quantification exercise to determine commodity requirements for the counties, national referral hospitals (NRHs), and strategic health programs (SHPs) covering FY 2021/2022 to FY 2023/2024. The national and county quantification reports revealed gaps, reinforcing Health Product and Technology (HPT) needs and have become an excellent advocacy tool for resource mobilization.

In **Malawi**, with support from GHSC-PSM, the Health Technical Support Services (HTSS) directorate of MOH led the 2022 annual quantification, covering all categories of health commodities. The activity helped determine funding requirements and gaps for various commodities. The exercise will help the MOH to plan for procurement of commodities and advocate for more funding from Treasury and development partners to fill the project gaps.

Management information systems (MIS)

GHSC-PSM has implemented various MIS solutions in many countries to improve the efficiency and effectiveness of operations. The GHSC-PSM team supports requests for proposals, proposal development, proposal evaluation, project planning, and monitoring throughout the project life cycle. Also, GHSC-PSM supports contract negotiation and vendor management to outline standard contract clauses for deliverable acceptance.

GHSC-PSM continues to focus on improving data accuracy and quality as a key priority for management information system implementation, including implementation of GS1-compliant standardized product data to build master datasets for end-to-end data visibility. Establishing methods and plans for managing master data sets across information systems helps avoid redundant data entry and ensures data accuracy and quality. GHSC-PSM supports countries in evaluating the data captured in information systems (e.g., eLMISs and warehouse management systems) for standardization.

The project promotes operational uniformity through NPCs, the Supply Chain Information System Maturity Model, and other approaches. GHSC-PSM also invites external and country office experts to present new technologies and lessons learned for further knowledge sharing.

In Q2, GHSC-PSM conducted webinars, presented to various working groups, made recommendations for system interoperability, and introduced standardized approaches to achieve data visualization through innovative tools to improve processes and efficiency.

In **Burma**, as part of efforts to improve health commodity data visibility and availability, GHSC-PSM provided mSupply super-user LMIS training to Defeat Malaria (DM) and CHAI. mSupply is the national LMIS, supporting inventory management across a variety of health areas, including

HIV/AIDS, tuberculosis (TB), and malaria. Due to the difficulty in supporting the national program following the coup d'état on February 1, 2021, the project pivoted its technical assistance toward development partners such as GHSC-PSM's service delivery implementing partner, DM. The project also coordinates with partners such as CHAI, which plans to implement mSupply for the expanded program on immunization, to strengthen the mSupply ecosystem. The two-day training, attended by six DM and three CHAI staff, equipped participants with the skills needed to troubleshoot the software and create/edit customers, suppliers, commodities, and reports. The training also covered use of the tender, purchase order, location management, and tablet module applications and how to customize the project-developed mSupply dashboard.

In **Cameroon**, a new dynamic online dashboard tool serves as a main source of information for the monthly HIV and malaria inventory for the Department of Pharmacy, Medicine, and Laboratory (DPML), which serves as the administrator of the tool. GHSC-PSM developed this reporting tool on Google Drive to allow data entry and quality checks by the supply chain focal points in 10 regions. Subsequently, the inventory databases connected to a dynamic online dashboard using Google Data Studio. This dashboard allowed users to visualize inventory data in real-time (completeness, stock status, etc.) and provided analysis for decision making.

In **Colombia**, following the assessment of the national information system, PAIWEB, GHSC-PSM began improving the software by hiring a team of local technical experts to improve priority functional areas and create a timeline for the remaining updates. Also, GHSC-PSM helped the MOH to update the central-level warehouse management system (WMS) and establish new information systems and synchronize them with the existing systems, including PAIWEB.

In **Malawi**, GHSC-PSM supported the Digital Health Division of the MOH on stock status data exchange, working to resolve interoperability layer issues related to firewalls that complicate seamless but secure data sharing between OpenLMIS and DHIS 2. (Based on the request from MOH, GHSC-PSM configured OpenLMIS to track vaccines and made it ready by the end of Sept 2021.) Also, GHSC-PSM organized the training of 64 cold chain technicians in using OpenLMIS, resulting in an official notification by Expanded Programme on Immunization to users to track vaccine data in OpenLMIS and an increase in reporting rates from 40 percent to more than 80 percent over four weeks. Lastly, the mobile versions of the NPC are complete on the Android version, with the release on the Apple store pending final approval.

In **Mozambique**, SIGLUS is a health facility logistics Information and management system (Sistema de Informação e Gestão de Logística das Unidades Sanitárias) deployed for data collection at health facilities. Because the system was developed using Microsoft Access, it had limited capabilities. To enhance the system functionality, GHSC-PSM helped finalize the development of SIGLUS v3 (based on the latest version of OpenLMIS²⁴) to allow full functionality and alignment with the requirements of the Government of Mozambique and interoperability between SIGLUS Web and the SIGLUS Desktop applications.

²⁴ OpenLMIS is an open-source eLMIS application for data collection and reporting from the health facilities and data analysis at districts, regions, and the central level for decision making for national supply chain operations.

Laboratory networks

GHSC-PSM continues to promote the development of efficient and well-planned laboratory networks and support high-quality service delivery through data-driven optimization and geographic information system-based visualization applications as well as quantification to ensure appropriate and timely commodity planning.

In the past, GHSC-PSM worked with PEPFAR-supported countries to use ForLab and ForLab+ desktop and web-based tools for laboratory forecasting. However, these tools were no longer as accurate or efficient enough for laboratory forecasting, and many countries found themselves reverting back to Excel-based forecasting tools instead. To address this challenge, in Q2, GHSC-PSM worked on the forecasting module of the QAT to ensure its structure can function for lab forecasting and cover that need. The team finished the demo phases and initial user acceptance testing (UAT), and began working on the second UAT, which will extend into Q3. While the tool is in development, GHSC-PSM has offered analytic support to PEPFAR-supported countries that did not have a strong Excel forecasting file available. The project provided this support to **Malawi** in Q2.

GHSC-PSM continues to promote the development of efficient and well-planned laboratory networks and support high-quality service delivery through data-driven optimization and geographic information system-based visualization applications. The use of modern software applications like OptiDx—developed by GHSC-PSM and FIND²⁵ in collaboration with USAID—can increase coverage and reduce costs by providing models and potential scenarios that improve visibility into network performance and costs and create opportunities to optimize laboratory equipment placement.

GHSC-PSM supported **Burundi** and **Uganda** to improve their understanding of their diagnostic networks through detailed analysis as introduced in the Advanced Analytics section of this report. This detailed diagnostic network review will prepare the countries for a diagnostic network optimization (DNO) activity. DNO is an activity in which multiple stakeholders—including MOH, GHSC-PSM, USAID, other implementing partners, and donors—review models and propose scenarios for the laboratory network to determine potential changes that would improve a key objective, such as optimizing cost or the distance between facilities and labs. Stakeholders review the scenarios that may inform an optimal mix (type and number) of laboratory equipment, an appropriate location for each instrument and/or an efficient specimen referral system to connect testing demand with point of care (POC), near-POC, or conventional laboratory-based testing sites. At the conclusion of a DNO workshop, partners develop an operational plan, taking into account how implementing the proposed changes to the lab network affects the program's budget, operations, human resources, and logistics. GHSC-PSM supports cost-efficient and sustainable procurement and placement of laboratory instruments.

After a workshop in **Eswatini** in early Q1, GHSC-PSM finalized the DNO report, began preparing the operational plan, and began implementing action items agreed to during the workshop. Eswatini continued implementing the operational plan in Q2.

²⁵ See <https://www.finddx.org/about/>

In preparing for the **Uganda** DNO, the project paused the analysis to realign stakeholders in early Q2. After reconnection, the project decided further review and understanding of the diagnostic network were needed before completing an optimization exercise. In Q2, the project divided the network into individual components for review, analysis, and correction and began filling gaps in data and identifying potential opportunities for improvement. **In Burundi**, GHSC-PSM prepared for DNO implementation with data collation and data wrangling and clarified the scope with appropriate stakeholders. Burundi will follow a process similar to Uganda's, focusing on understanding the entire diagnostic network and ensuring accurate and complete data before beginning the optimization portion of the activity.

GHSC-PSM revised the Instrument Procurement Questionnaire that includes 12 questions that country teams answer to demonstrate sufficient need and preparation for purchasing laboratory equipment. The revised questionnaire provides country teams with greater clarity on expectations for completion and reduces the need for follow-up questions. **Burundi, Mozambique, and Uganda** were the first to complete the questionnaires using the updated format in Q1, and more countries began using the new questionnaire in Q2, including **Kenya, Namibia, Zambia, and Zimbabwe**. Early engagement with countries on this questionnaire is especially important this year as one of the instrument suppliers is retiring their CAP/CTM instruments, and countries must replace them in the next year.

Warehousing and distribution

GHSC-PSM continues to improve warehousing and distribution systems in more than 25 countries. As part of this work, the project aims to move countries from a warehousing mid-/long-term storage facility to a distribution center model that promotes more frequent stock turnover (inventory turns). This requires changes in infrastructure and processes to keep abreast of improved warehouse speed and shorter order cycle times. Interventions include improving data-driven decision making across the supply chain, optimizing distribution networks, and increasing efficiencies in warehousing and distribution operations.

GHSC-PSM is also implementing private sector approaches, such as activity-based costing (ABC), that recognize that warehousing and distribution are part of a larger strategy. Effective supply chain management requires integrating procurement, transportation, storage, picking and packing, delivery and other activities; doing so results in increased velocity, improved orchestration, high performance, low risk of expiry, and lower costs.

In Q2, the project continued to support **Kenya** with ABC implementation at the Mission for Essential Drugs and Supplies (MEDS). Working closely with MEDS and USAID, GHSC-PSM developed a new profit and loss statement. This new format will provide USAID with the actual cost MEDS is incurring for the project and will provide MEDS with significant and detailed visibility into its own expenses and enable better planning. The implementation and adoption of this profit and loss statement is the final stage of ABC. GHSC-PSM will continue to support MEDS with monthly and quarterly reviews to ensure a smooth transition to this new financial tool.

The project produced a draft template for vaccine distributions that includes cold chain, freezer, and ultra-cold chain requirements, per manufacturer guidelines, to ensure that COVID-19 vaccines

are transported at appropriate temperature ranges. Botswana, Ghana, and Nigeria have used the template for the COVID-19 vaccine distributions.

GHSC-PSM also continued to review and update the distribution template's contractual language to ensure the project is measuring appropriate activities to minimize risk when contracting with 3PL providers. The draft contract template includes commercial supply chain key performance indicators (KPIs) to measure and monitor 3PL performance. Countries that included KPIs in their request for proposals for upcoming contract modifications or renewals are Botswana, Ghana, Kenya, Mali, Niger, and Uganda. GHSC-PSM is also developing a KPI tool and dashboard for each country, aiming to establish a robust mechanism and record of 3PL performance in each country that will allow comparison of KPI results across countries. Angola and DRC began a pilot of the KPI dashboard.

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

GHSC-PSM is working with the Government of **Guinea**, the Global Fund, and Gavi, the Vaccine Alliance (GAVI), to provide technical assistance to this multi-donor effort to build a prefabricated warehouse (PFW) at the Coyah site in Guinea. In collaboration with the project's structural engineer and architectural subcontractor, ASD Consulting Engineer, in Q2 the project presented architectural, civil engineering, electric, firefighting, ventilation, information and technology, surveillance, and access control plans to the PFW Steering Committee. Also, the project developed bills of quantities associated with the various components of the PFW to cost out the construction of the prefabricated warehouse.

Notably, GHSC-PSM Guinea developed a Memorandum of Understanding (MoU) and Terms of Reference (TOR) between the PFW project donors and stakeholders, which defined and documented the roles and responsibilities of each party involved in terms of the financing and management of the different phases of the construction and implementation of the PFW project. The MoU and TOR are being reviewed by the relevant parties; signature of the document will authorize the next phase of construction. GHSC-PSM also held technical assistance meetings with Pharmacie Centrale de Guinée (PCG) and Unité d'Appui à la Gestion et à la Coordination des Programmes (UAGCP) to review study deliverables and to guide preparation of a call for tender for identifying a qualified firm to complete construction of the PFW and a quality assurance contractor to oversee the work.

In **Nigeria**, the Bauchi State government managed the last-mile distribution (LMD) of essential health commodities to 525 public health facilities at the end of Q2, using the project's supply chain model. LMD is a critical step in the supply chain process that ensures clients access essential medicines, medical supplies, and commodities when and where they need them. The project supported the state in facilitating a bidder's conference for 3PL companies and assisted the bid evaluation process in preparing for the state-led LMD. The project also built the capacity of state

health officials in use of the mSupply software and in quantification of commodities. "The state-led LMD will help in ensuring commodity security and tackling issues like pilferages, diversions, and proxy deliveries," said Abdulkadir Ahmed, Managing Director, Bauchi State Drug and Medical Management Agency. States showing the capacity to lead LMD of health commodities bode well for the future of Nigeria's health supply chain system. When replicated by other states, this will contribute to reducing the burden on the federal government and reliance on international donor funding.

Workforce development

GHSC-PSM strengthens public health supply chain workforces through the project's country offices. These interventions build sustainable workforces through professionalization and systematic approaches to workforce development. GHSC-PSM provided remote support in Q2 to Angola, Botswana, Burkina Faso, Ethiopia, Liberia, Rwanda, Sierra Leone, Zambia, and Zimbabwe.

GHSC-PSM annually offers USAID personnel the opportunity to partake in an Introduction to Supply Chain Management course. In May 2021, due to the COVID-19 pandemic, the course was held entirely virtually and consisted of a series of lectures over 10 days. That course, while largely successful, was not unanimously well-received by all participants. In February 2022, the project relaunched the course through a low-cost learning management system, re-purposing the entire, original, 40-hour course as a hybrid learning course. The new course employs self-learning offered in pre-recorded video lectures, discussion boards, pre-recorded interviews, and six synchronous live sessions over three weeks. Of the 37 participants who enrolled in the course, 35 completed it; two participants were unable to complete the course within the three-week period even after receiving a three-week extension.

Based on lessons learned from February, GHSC-PSM will make modifications for the next offering, tentatively scheduled for May 2022. Because the course is now mandatory for those who will be assigned to health offices within USAID, levels of interest and experience in the supply chain are varied, increasing the need for foundational information for some participants. GHSC-PSM is working on how to address this need.

In **Zambia**, GHSC-PSM enrolled 24 nursing students from Kafue and St Luke College of Nursing and Midwifery in the Health Supply Chain Management in Zambia e-learning course for three weeks. WhatsApp and Google Meet served as communication platforms between facilitators and students during the course. Of the 24 students who enrolled, 21 completed the course. GHSC-PSM will implement the course for students at five additional nursing schools.

Leadership and Governance

GHSC-PSM continues to support strategy, planning, and standards-setting activities:

In **Malawi**, in continuation of an activity started in October 2021, GHSC-PSM facilitated a supply chain sub-group of participants attending a five-day workshop to develop the Health Sector Strategic Plan (HSSP) III, a follow-on to HSSP II that is anticipated to run from 2022 to 2030. The previous plan was thought to not have sufficient emphasis on the supply chain, leading the counterpart Health Technical Support Services (HTSS) in the MOH to ask the health donor partners

group to fund a consultant who would explicitly represent the supply chain. The project led a group of approximately 20 MOH staff, primarily from the districts, through a bottleneck analysis, selection of strategies, and identification of activities required to improve the supply chain. The framework of the logistics cycle assisted in designating 11 areas of concern.

National Supply Chain Assessments

The National Supply Chain Assessment (NSCA) is a series of activities that are conducted jointly as part of an overall assessment process. In Q2, the project conducted field-based activities for a NSCA in Rwanda through a supply chain mapping workshop and primary data collection across the country to inform Capability Maturity Model and Key Performance Indicators. For the supply chain mapping workshop, stakeholders were brought together from across the supply chain to map out exactly how the supply chain operates. Participants also conducted a strengths, weaknesses, opportunities, and threats (SWOT) analysis of various supply chain functional areas. The insights drawn from this workshop will be critical to informing the final report. During primary data collection, a total of 17 teams were deployed to collect data from over 200 sites in less than three weeks' time. The project has now pivoted to conducting joint analysis with MOH staff and will produce a joint report in Q3.

In Q2, the project also conducted a French-language webinar on the NSCA. The webinar detailed the components of the NSCA, why choose the NSCA for assessment, and strategies on how to deploy the toolkit in a particular context. The event enjoyed strong participation with well over 50 people in attendance and a lively question-and-answer session.

End-use verification surveys

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 malaria 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 (SDPs). 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.

In Q2, the project supported data collection on malaria commodities through EUV surveys in three countries (Angola, Ethiopia, and Nigeria) and completed and shared two countries' EUV reports with partners, including USAID (Burkina Faso and Niger).

Environmental compliance

In accordance with USAID's Environmental Procedures (22 CFR 216), the project supports implementation of the GHSC-PSM Initial Environmental Examination and the Environmental Mitigation and Monitoring Plan. Implementation includes multi-faceted services to staff globally, such as 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 completed the FY21 Environmental Mitigation and Monitoring Report (EMMR) and received initial comments from USAID. Once completed, the FY21 EMMR will go to the USAID Global Health Bureau Environmental Officer.

GHSC-PSM issued the second sub-Task Order to one of four health care waste management indefinite quantity subcontract (IQS) holders. The work to be performed will support Angola's MOH with developing new SOPs on waste management, reverse logistics, and environmental compliance. The SOPs will support the country's processing of health care waste generated by COVID-19 vaccine campaigns.

GHSC-PSM developed three additional sub-Task Orders for the disposal of expired and damaged products located at the Belgium, Dubai, and South Africa RDCs, to likely be awarded in early Q3.

C2a. Project Performance

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

Supply plans

GHSC-PSM drives the adoption of the quarterly supply planning paradigm. In Q2, the project received 158 supply plans from 36 different countries. Of those, 150 were Priority 1 (required by USAID) supply plans, keeping the submission rate for this category over 90 percent (150 submitted out of 162 expected, or 93 percent). In Q2, 110 of the 158 supply plans were submitted through QAT, which is 70 percent of all supply plans submitted to GHSC-PSM home office.

Capacity building

The number of people trained is an indicator that the project focuses its capacity-building resources on and identifies areas to improve related supply chain outcomes. GHSC-PSM trained 6,221 individuals in Q2 (2,776 women and 3,445 men).

Most trainings were cross-cutting and addressed topics relevant to multiple health areas. By funding source, 46 percent were trained with HIV/AIDS funding; 11 percent with malaria funding; 9 percent with FP/RH funding; and 34 percent with MCH funding. Trainings focused on warehousing and inventory management, LMIS, governance and finance, transportation and distribution, and human resources capacity development.

C3. Global Collaboration



Submitted 11 abstracts for consideration to the **International Conference on Family Planning (ICFP) 2022** in Q2, with abstracts from Angola, Ghana, Liberia, Pakistan, and Rwanda.



Implemented the Introduction to Supply Chain Management (SCM) and Emerging Trends Course for USAID staff. Over two weeks, GHSC-PSM led the virtual training course for 40 participants through presentations and interactive sessions.



Coordinating with AMF on the procurement and distribution of long-lasting insecticide-treated nets in Nigeria and Guinea.



Published a new technical report titled, “[Using a Data Science Approach to Build Timely, Sustainable, Repeatable and User-centered Analysis to Drive Actions.](#)”

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 actively with other global players to promote the availability of medicines and commodities. The project does this by providing supply chain expertise and working with global partners to allocate scarce supply, promoting harmonization of standards and practices and managing commodity stock information as a global good. Highlights of groups the project participates in are recapped below.

- Host monthly **Proactive Stock Risk Management (ProStock)** meetings with USAID as a forum to build on the project’s HIV/AIDS data collection and analysis and discuss gaps in HIV commodity access and implement action plans to address them. (For more details, see section B1.)

- Participate in the **KSM/API sub-working group**²⁶ of the **Malaria Pharma Task Force**:²⁷ In Q2, the working group focused on discussing, tracking, and validating activity in the artemisinin market. As suppliers communicated higher costs and challenges in sourcing vegetal artemisinin, the working group analyzed the cost implications of potential increased use of SSA. (For more details, see section B2.)
- Chair the **LQAG**, a global working group of procurers focused on LLIN QA and QC. The LQAG discussed feedback from the Raising the Floor Nets: ITN Quality Convening in a webinar hosted by BMGF, CHAI, and i2i. (For more details, see section B2.)
- 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.
- Participated in the Global Family Planning Visibility and Analytics Network (**VAN**) **Steering Committee** (GHSC-PSM is a non-voting member) and provided input on the VAN capabilities matrix. Also participated in regular VAN working groups, including the Data Management, Technical Management, Data Sharing, and Super User and Analytics task forces.
- Participate in the **Maternal Health Supplies Caucus** through technical presentations, participation in ongoing meetings and long-term work planning.
- Participate in USAID and BMGF-funded Child Health Taskforce (CHTF) meetings and contribute to ad hoc CHTF activities. In Q2, the project began collaborating with partners from the CHTF on a series of technical meetings to discuss barriers to availing key commodities for **treating childhood pneumonia and PSBI** and identify actions for national governments to take to ensure these commodities are accessible for families. (For more details, see section B4.)

Knowledge sharing

To ensure that the critical lessons learned, adaptations, and best practices can be repurposed by Ministries of Health, supply chain managers, donors, and other supply chain stakeholders, GHSC-PSM documented and shared project activities, technical research, and success stories. Details can be found in sections throughout the report, but below are some highlights from Q2:

- Submitted 11 abstracts for consideration for the **International Conference on Family Planning (ICFP) 2022**, taking place in November. Of these, seven focused on country office-based activities in Angola, Ghana, Liberia, Pakistan, and Rwanda, and four abstracts related to TO3 Core activities. ICFP has indicated plans to notify authors of abstract acceptances at the end of Q3.

²⁶ KSM/API Working Group members include CHAI, BMGF, GHSC-PSM, the Global Fund, Medicines for All Institute (M4ALL), Medicines for Malaria Venture (MMV), Maisha Meds, PATH, Unitaid, PMI and WHO.

²⁷ Pharma Task Force members include the Asia Pacific Leaders Malaria Alliance Secretariat, CHAI, BMGF, GHSC-PSM, the Global Fund, Impact Malaria, the Malaria Consortium, MMV, MSF, Pan-American Health Organization, PATH, PMI, UNICEF and WHO.

- Submitted three abstracts to the **International AIDS Society conference (AIDS 2022)** from project offices in Ethiopia and Ghana. Two of these were accepted for poster presentation at the conference, taking place July–August 2022.
- Prepared five abstracts for submission to the **American Society of Tropical Medicine and Hygiene (ASTMH) 2022 conference** from project offices in Cameroon and Ethiopia with case studies representing the HIV/AIDS, malaria, and MNCH streams of work. These were submitted to the conference for consideration in early April 2022.
- Submitted one abstract from the Ghana project office to the 2022 **Center for Applied Research and Innovation in Supply Chain – Africa (CARISCA) Supply Chain Research Conference**. This abstract was accepted for presentation at the conference in June 2022.
- Implemented the two-week **Intro to SCM and Emerging Trends Course for USAID staff**. The training aimed to prepare USAID staff for their role in supporting commodity security and to increase staff knowledge and understanding of SCM as it contributes to commodity availability in the field.
- Hosted a **webinar on the innovative DOOR stock-alert tool** and the pilot implemented in Angola. The team provided an overview of the DOOR system and shared evaluation findings and lessons learned from the activity.
- Published the quick guide, “[Key Considerations for Centralized National Pharmaceutical Traceability Approaches](#),” which provides a summary of information in existing resources to highlight key considerations for countries contemplating the implementation of centralized traceability approaches.
- Published a new technical report titled, “[Using a Data Science Approach to Build Timely, Sustainable, Repeatable and User-centered Analysis to Drive Actions](#).” This technical brief explores how to strengthen monitoring and evaluation (M&E) processes through a data science approach to analytics that enables supply chain decision makers to act based on timely, transparent, and repeatable analysis.

Other Global Collaboration

Strengthening the supply chain management workforce GHSC-PSM implemented the Intro to Supply Chain Management (SCM) and Emerging Trends Course for USAID staff. GHSC-PSM led the two-week virtual training course for 40 participants through presentations and interactive sessions. Of these, 38 participants completed the course and received certificates. The training aimed to prepare USAID staff for their role in supporting commodity security and to increase staff knowledge and understanding of SCM as it contributes to commodity availability in the field. The course included information on all GHSC-PSM health areas, including FP/RH.

Country collaboration

In Q4 FY 2021, GHSC-PSM began discussions with AMF regarding the delivery of 3.7 million pyrethroid-piperonyl butoxide (PBO) LLINs procured by AMF to support Nigeria’s LLIN distribution campaign in the Akwa Ibom Province. GHSC-PSM, AMF, and PMI developed a memorandum of understanding that outlined the roles and responsibilities of all parties: namely,

that AMF would procure the LLINs from the supplier and GHSC-PSM would be responsible for the QA/QC activities (inclusive of inspection, sampling, and testing at one of the project's third-party QC laboratories) and for the logistics activities (inclusive of pickup, shipping, and delivery of the goods to Akwa Ibom). The MOU was executed in Q4 FY 2021, QA activities were undertaken in Q1 FY 2022, and net delivery was completed in eight staggered shipments to the Akwa Ibom Central Medical Store in Q2 FY 2022.

In Q2 FY 2022, GHSC-PSM also managed a similar arrangement with AMF for the shipment of 3.1 million LLINs to support Guinea's LLIN distribution campaign. The MOU with AMF was executed in Q1 FY 2022, QA/QC activities took place in Q1 and Q2, and delivery of the goods to the Central Medical Store in Conakry is expected in seven staggered shipments in Q3.

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.

- Identified areas for process and communication improvements between the project, suppliers, and GHSC-QA in reporting quality incidents, more specifically, related to transport of temperature-controlled products and reporting of incidents related to temperature excursions.
- Worked with GHSC-QA to streamline and optimize lab commodity procurement from local eligible suppliers.
- Worked with GHSC-QA to provide input and support toward COVID-19–related commodity procurement.

Annex A. COVID-19 Response



Delivered nearly **seven million** COVID-19 commodities to **four countries** approved for American Rescue Plan Act (ARPA) funding, including COVID-19 **rapid-test kits, hypodermic syringes, and disposable syringes**. Placed orders for COVID-19 commodities for **three countries**, including more than **31.3 million line items of oxygen equipment, vaccine administration supplies, and personal protective equipment (PPE)**.



Delivered **two GE Vivid IQ cardiovascular ultrasound systems** to **Policlinico Umberto I Hospital in Rome, Italy**.



Installed **and commissioned one containerized PSA plant** in **Mozambique** and delivered and installed three pressure swing absorption (PSA) plants in Tajikistan. By the end of Q2, GHSC-PSM delivered **23 order lines of oxygen consumables and durables** to **Ghana, Haiti, Mozambique, and Tajikistan** and issued a total of 609,756 cubic feet of oxygen to 10 medical facilities in Haiti.

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

- Established a stockpile of a COVID rapid diagnostic test kits (RTKs) and a predefined list of PPE commodities
- Supported country procurement of COVID-19 commodities from a list of 332 USAID and GHSC-QA-approved products through ARPA
- Procuring respiratory and cardiac supply for Italy
- Procurement of consumables and durables for ventilator support
- Procurement of oxygen-related commodities and provision of technical assistance for their management

GHSC-PSM also worked across several country offices to plan for and implement **COVID-19 case management and vaccination-related technical assistance**. Efforts are underway to ensure supply chains can support large-scale vaccine distribution and the project has specifically ramped up its work assessing cold chain capacity in the countries it supports and identifying opportunities to strengthen the global supply chain for vaccine distribution.

More on these activities is provided below.

Supporting the global COVID-19 vaccine rollout

In Q2, GHSC-PSM continued to work across several country offices to plan for and implement **COVID-19 case management and vaccination-related technical assistance in 23 countries** that received COVID-related funding in FY 2021 and FY 2022. Technical support varies from country to country and includes providing cold chain and ultra-cold chain (UCC) storage and distribution, developing waste management plans to manage vaccine-related waste and coordinating vaccine rollout activities through participation in various technical working groups.

- In **Angola**, GHSC-PSM collaborated with the MOH to develop training guides for the surveillance of adverse events post vaccination. The project trained 23 master trainers on pharmacovigilance and COVID-19-related topics. The 23 national-level master trainers further went on to train 338 technicians across 17 provinces. As a result of the training, the notification system has seen an increase in technicians notifying of adverse events following immunizations (AEFIs). Technicians gained confidence in filling out the notification form and responding to AEFI concerns. To ensure that surveillance sites are operational, the GHSC-PSM team also assisted the MOH in supervising vaccination points. The supervision aimed to ensure that the vaccination points were adequately staffed and operational, and that established procedures at the vaccination centers were followed.
- In **Malawi**, GHSC-PSM provided support to MOH to distribute COVID-19 vaccines and COVID-19 PPEs to all districts in the country. The project also assisted the MOH through the Expanded Programme on Immunization (EPI) to build capacity of cold chain technicians and EPI coordinators in managing UCC requirements of the Pfizer vaccine and operation of UCC equipment.
- In **Ethiopia**, GHSC-PSM conducted supportive supervision at 240 vaccination centers. This activity sought to accelerate vaccine uptake, ensure good cold chain management and vaccine handling, and recommend the proper waste management of COVID-19 vaccine and ancillary commodities after the completion of the vaccination campaign. In addition, the project encouraged stock monitoring and commodity redistributions to effectively utilize near expiry vaccines and advised on the implementation of Mix and Match guidelines.

Presenting COVID-19 successes

In Q2, GHSC-PSM continued to support vaccine distribution activities in Angola, Ghana, Namibia, and Nigeria. The project also contributed to a **USAID Fact Sheet on COVID-19 support in Sub-Saharan Africa** that highlights the project's work in Angola, Ghana, Mozambique, Namibia and Nigeria. These include:

- **Angola:** Distributed 343,650 doses of COVID-19 vaccine, 349,400 syringes, 4,875 vials of diluent, 636 safety boxes, and 196,000 cartons for registration to five provinces.
- **Ghana:** Distributed 5,662,832 doses of COVID-19 vaccines from central to regional distribution centers in 15 Regional Health Directorates. GHSC-PSM also supported the distribution of 655,900 doses of COVID-19 vaccines from the international airport to the Greater Accra Ghana Health Service EPI cold room.
- **Mozambique:** Preparing for the distribution of 9,000,000 doses of World Bank-donated COVID-19 vaccines in five rounds from the central warehouse to one regional warehouse

and 11 provincial warehouses, and procured 100 cold boxes and 100 temperature monitoring devices to support vaccine distribution.

- **Namibia:** Supported Nampost, a parastatal organization, to distribute 711,718 doses of COVID-19 vaccines from the central medical store and the Namibian Institute of Pathology (NIP) to 35 district hospitals, NIP sites, and two regional medical stores.
- **Nigeria:** Provided technical support for logistics to the NPHCDA to increase access to COVID-19 vaccines across the states of Nigeria. As of Q2, GHSC-PSM had distributed around 14,463,015 doses of COVID-19 vaccines across the 36 states plus the Federal Capital Territory (FCT). The project is currently in the process of completing distribution for 8.99 million COVID-19 vaccines to all 36 states and 859,600 doses of COVID-19 vaccines from the National Strategic Cold Stores to 19 states and the FCT. GHSC-PSM also procured 74 scanners and other supporting equipment to be handed over to the GoN to facilitate vaccine related serialization efforts in Nigeria.

Activities under COVID-19 ARPA

GHSC-PSM received \$11.5 million in funding under ARPA to procure cold chain supplies, cold chain equipment, bulk liquid oxygen, diagnostic tests, general patient care commodities, laboratory consumables, essential medicines, and PPE; \$18 million for GHSC-PSM's newly established Rapid Response Mechanism to procure a limited range of critical COVID-19 commodities for countries requiring emergency supplies; and \$3M to establish a virtual stockpile of COVID-19 commodities and provide related technical assistance.

Establishing a COVID stockpile

In Q2, GHSC-PSM established stockpiles for COVID RTKs and PPE. The purpose of the stockpiles is to provide rapid access to quality-assured RTKs and PPE for countries in response to COVID-19 emergency by reducing lead time from issuance of order to goods availability date.

RTK Stockpile. GHSC-PSM inaugurated COVID-19 RTK stockpiles with two suppliers valued at \$2,000,000. The RTKs have a 24-month shelf-life. By the end of Q2, the project placed orders from the stockpile for 39,875 RTKs for Botswana and 99,750 RTKs for Madagascar.

PPE Stockpile. GHSC-PSM awarded two wholesalers to manage inventory, remaining shelf-life (RSL), and process orders within seven calendar days from purchase order (PO) issuance for a max 12 month storage period. Products available in the PPE stockpile include surgical gowns, barrier gowns, coveralls, examination gloves, face shields, and face masks.

In Q2, the project briefed GHSC-PSM country offices on the stockpile and developed materials for USAID to disseminate to Missions informing them how to rapidly access the RTKs and PPE.

Procurement

In Q2, GHSC-PSM delivered 67,500 COVID-19 RTKs to Benin, 275,000 RTKs to Zimbabwe, 1,350,000 hypodermic syringes to Rwanda, and 5,000,000 disposable syringes to Guatemala.

The project also placed orders for the following countries following a comprehensive analysis and quantification process conducted by the respective GHSC-PSM country teams, to meet in-country needs within country-specific ARPA funding envelopes:

- **Lesotho:** 900 infrared thermometers, 50 air-oxygen blenders, 16,000 bag valve masks, 2,000 flowmeters, 3,000 nasogastric tube holders, 70 oxygen analyzers, 2,000 pulse oximeters, 900 resuscitation masks, 2,500 bag valve masks, 100 laryngoscopes, 20,000 nasal cannulas, 40,000 nasal catheters, 200 nebulizers, and 45 intravenous infusion pumps
- **Malawi:** 12,000 barrier gowns, 510,000 bouffant caps, 5,662,500 examination gloves, 14,000,000 surgical face masks, 40,000 N95 masks, 60,000 plastic face shields, 43,200 protective goggles, 200,000 disposable shoe covers, 730,000 surgical gloves, and 330,000 biohazard bags
- **Zimbabwe:** 4,000,000 surgical face masks, 660,000 N95 face masks, and 5,000,000 examination gloves

GHSC-PSM supported bulk liquid oxygen (LOX) projects in Botswana and Namibia. GHSC-QA is finalizing a review of supplier eligibility to facilitate the supply of bulk LOX to eight hospitals in Namibia. The project is establishing a project charter with the Mission and MOH in Botswana for three hospitals located in Masunga and Francistown.

Other USAID-Funded Procurement and Technical Assistance

Procuring COVID-19 equipment for Italy

In Q2, GHSC-PSM completed the first of two deliveries of imaging equipment, shipped directly to Policlinico Umberto I Hospital. The final delivery of imaging and ultrasound equipment is awaiting customs clearance and will close out this activity in support of Italy.

Ventilator support

In Q2, GHSC-PSM continued work on the ventilator program, issuing supplementary purchase orders and coordinating with ventilator manufacturers and local service providers on service agreements. USAID approved four requisition orders in support of recipient countries: Ghana, Mozambique, Rwanda, and Uzbekistan. These requisition orders enabled the purchase of bacterial filters, reusable ventilator circuits, and continuous positive airway pressure masks, totaling approximately \$664,000.

Oxygen Procurement

Supplemental oxygen is an essential, life-saving 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. By the end of Q2, GHSC-PSM placed orders for a total of 297 oxygen commodity order lines, that include pressure swing adsorption (PSA) and vacuum swing adsorption (VSA) plants, oxygen concentrators and cylinders, oxygen disaster manifolds, durable items, and consumables.

In Q2, the project processed orders for five PSA plants for Kenya that are in the process of being fabricated. The first unit is scheduled to be ready to ship in early Q3. GHSC-PSM installed and commissioned one containerized PSA in Mozambique, installed three PSA plants in Tajikistan and delivered 23 order lines of consumables and durables (including pulse oximeters, oxygen cylinders, oxygen masks, oxygen manifold systems, oxygen cylinder mounts and oxygen wrenches) to Ghana, Haiti, Mozambique, and Tajikistan.

As of March 31, 2022, the project also issued a total of 609,756 cubic feet of oxygen equivalent to ~2,541 H-type cylinders, to 10 medical facilities in Haiti (additional details are included in the table below).

No.	Facility Name	Total Quantity (CF) Issued 3/31
1	HC Police Nationale de Bon Repos	26,800
2	Hôpital Immaculé Conception de Port de Paix	33,520
3	Hôpital de Fort Liberté	12,320
4	CSL Caracol	10,120
5	Centre Médico-Social de Ouanaminthe	8,360
6	Hôpital Notre Dame de la Paix de Jean Rabel	16,720
7	Hôpital La Providence des Gonaïves	56,440
8	Hopital de l'Universite d'Etat d'Haiti	141,820
9	Hôpital Saint Luc	288,756
10	Hopital Arcachon	14,900
Grand Total		609,756

Health systems strengthening: COVID-19 and emergency preparedness and response

In addition to global support, country teams engaged with national government stakeholders in Q2 to assist them in responding to the COVID-19 pandemic.

GHSC-PSM provided clinical and non-clinical technical assistance to improve the oxygen ecosystem for the COVID-19 response in Ghana, Guatemala, Haiti, Honduras, Kenya, Mozambique, and Tajikistan.

All clinical technical assistance (TA) activities ended on March 31, 2022. GHSC-PSM will work with implementing partners to collect completion reports and finalize the invoicing process in Q3. Ghana, Haiti, Honduras, Kenya, Mozambique, and Tajikistan all received no-cost extensions to wrap up non-clinical activities in Q3 or Q4, depending on the country and implementation timelines.

In **Kenya**, the non-clinical TA team finished site visits to all identified facilities that will receive PSAs to gauge site readiness and training needs. GHSC-PSM is finalizing a report that will be presented to USAID in Q3 and will inform the full work plan.

In **Guatemala**, during Q4 FY 2021 the project's clinical partner, Jhpiego, developed a virtual course that will be uploaded to the MOH's training department website and accessible to MOH employees. The course is titled "Management of COVID-19 and Oxygen Therapy" and addresses topics such as

prevention and triage for COVID-19, outpatient and inpatient management of COVID-19, and oxygen therapy to improve oxygenation in COVID-19 patients. In Q2, GHSC-PSM completed the distribution of consumables and durables to 21 hospital facilities throughout the country. The period of performance for activities in Guatemala ended on March 31, 2022.

In **Mozambique**, GHSC-PSM finalized and submitted a sustainability plan to USAID, which outlines the strategy and action plan to ensure operations, maintenance, and continued use of the PSA plant and fifteen concentrators following the closeout of the Oxygen Ecosystem Activity. With the support of the project's clinical TA partner, Jhpiego, 163 health professionals were trained in primary care interventions and oxygen therapy. Several discussion sessions were also led through a community of practice online training, including training on new therapies for COVID-19, and HIV/COVID-19 co-infection.

A community of practice was also established in **Haiti** through the clinical TA partner, FHI 360. The focus of the community of practice is the provision of ongoing technical assistance on case management, including intensive care and critical use of ventilators and oxygen therapy. In Q2, FHI 360 and Partners in Health facilitated a clinical and non-clinical TA training dissemination meeting with participants from USAID, Zanmi Lasante, and GHSC-PSM. The objective of the meeting was to share lessons learned and recommendations for the delivery of future clinical training and the community of practice.

GHSC-PSM conducted assessments and monitoring visits to regional medical stores and health facilities that received PSA oxygen plants and oxygen-related equipment in **Ghana**. The purpose of the visits was to monitor the operations and usage of the equipment and to determine any needs for additional support. To ensure the sustainability of the Oxygen Ecosystem Activity after the end of the project, GHSC-PSM trained senior administrative management staff at the regional district levels who are responsible for institutional care and regional resource management. In partnership with RikAir and Ghana Health Service engineers, GHSC-PSM's clinical TA partner, Jhpiego, completed joint clinical and non-clinical training at the four PSA sites with a special focus on respirator support for clinicians and biomedical engineers and technicians.

In **Honduras**, the project's implementing partner, Palladium, concluded clinical TA activities with a lessons learned session with key stakeholders to discuss the results of the clinical interventions. Palladium also submitted their final completion report which was reviewed and approved by GHSC-PSM and shared with USAID. For non-clinical TA, GHSC-PSM trained 13 technicians and biomedical engineers in a training of trainers for non-clinical oxygen management in January. In March, the team led a virtual cascade training to reach more participants across Honduras, training 50 people from 19 hospitals on non-clinical oxygen management topics. GHSC-PSM also received approval from USAID and the MOH on two deliverables: 1) SOPs and guidelines for oxygen management, and 2) protocols for quantification and procurement. These two deliverables will be adopted by the MOH and integrated into their standards and procedures.

Managing oxygen systems requires robust systems and technical knowledge to make sure the systems are safe and reliable. In **Tajikistan**, health workers and facilities had experienced accidents

with the handling of oxygen as well as problems with inadequate quality control of the oxygen supply, leading to suboptimal clinical outcomes. GHSC-PSM conducted a non-clinical oxygen training of trainers program in Tajikistan in January. Twenty biomedical technicians, engineers, and professors from the central level government, hospitals, medical service providers, and universities attended the training which aimed to increase understanding and awareness of oxygen safety and introduced essential practices for the safe handling of oxygen and hospital operations. The training at Istiqol Medical Health Center consisted of lectures, discussion, and practical experiences. In March, GHSC-PSM kicked off a series of six cascade trainings on non-clinical oxygen management that will run through April 2022. Two cascade trainings were completed in Q2 with a total of 48 participants trained. For clinical TA, FHI 360 completed all activities in Q2 with the conclusion of three mentorship visits to the PSA facility sites in Bokhtar, Panjikent, and Konibodom. As part of the mentorship visits, the team assessed the effectiveness of the clinical training and mentored 115 medical staff by providing technical support to fill gaps identified during the visits.

GLOBAL HEALTH SUPPLY CHAIN PROGRAM

Procurement and Supply Management

Global Supply Chain M&E Indicator Performance

FY2022 Quarter 2, January - March 2022

Current Reporting Period

2022-Q2

Delivery Impact to Date



Number of ACT treatments delivered

426,714,069



Number of Couple Years Protection delivered

99,573,979



Person-years of ARV treatment delivered

17,783,386

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)



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



Delivery Performance

Current Reporting Period

2022-Q2

▼

A1a. On-time, In-Full Delivery

Task Order	Total # of Line Items Delivered	OTIF	OTIF Target
TO1 - COVID19	36	56%	80%
TO1 - HIV	931	89%	80%
TO2 - Malaria	214	81%	80%
TO3 - FP/RH	44	95%	80%
TO4 - MNCH	6	83%	80%
Total	1,231	87%	80%

A1b. On-time Delivery

Task Order	Total # of Line Items with ADDs in the quarter	OTD	OTD Target
TO1 - COVID19	27	78%	80%
TO1 - HIV	945	89%	80%
TO2 - Malaria	223	81%	80%
TO3 - FP/RH	39	95%	80%
TO4 - MNCH	5	100%	80%
Total	1,239	88%	80%

A16. Backlog Percentage

Task Order	Total # of line items with ADDs in the last 12 months	Backlog	Backlog target
TO1 - COVID19	403	3.5%	5%
TO1 - HIV	4,042	6.2%	5%
TO2 - Malaria	929	2.0%	5%
TO3 - FP/RH	199	1.5%	5%
TO4 - MNCH	131	0.0%	5%
Total	5,704	5.0%	5%

TO Analysis

Crosscutting	Overall delivery performance has remained strong and generally consistent with the previous quarter. OTIF results increased to 87 percent, and OTD increased to 88 percent for the quarter. The backlog remained consistent with last quarter, at 5 percent of line items. Overall delivery volume has also decreased slightly from last quarter, following the trend of the previous four quarters. The OTD and OTIF results shown here include all applicable reason codes and illustrate performance within GHSC-PSM's manageable control. "COVID-impacted" versions of these metrics are available in the main narrative of the report, showing how pandemic factors outside of project influence continue to impact supply chain outcomes. COVID-impacted OTD for the quarter was 72 percent, and COVID-impacted OTIF was 77 percent. In the case of the OTIF, the gap between the standard result and the COVID-impacted result has narrowed, however the gap between the standard result for OTD and the COVID-impacted result has widened, suggesting that many items that were originally planned for delivery in Q2 have been adjusted out of this period due to COVID-related delays. For further discussion of global supply chain dynamics during the pandemic, please see the main narrative of this report.
TO1 - HIV	Overall delivery performance for HIV has remained strong. OTIF results increased from the previous quarter, from 83 percent to 89 percent, and OTD from 86 to 89 percent. The backlog has increased to 6.2 percent of line items, just slightly above the goal of 5 percent. Overall delivery volume has decreased slightly this quarter. The OTD and OTIF results shown here include all applicable reason codes and illustrate performance within GHSC-PSM's manageable control. "COVID-impacted" versions of these metrics are available in the main narrative of the report, showing how pandemic factors outside of project influence continue to impact supply chain outcomes. COVID-impacted OTD for the quarter was 72 percent, and COVID-impacted OTIF was 79 percent. In the case of OTIF, the gap between the standard result and the COVID-impacted result has increased slightly, indicating that the line items actually delivered this quarter had slightly more COVID-related delays. At the same time, for OTD, there is a difference of 17 percentage points, suggesting that COVID impacts continue to be a significant factor for items that were originally planned for delivery in Q2. For further discussion of global supply chain dynamics during the pandemic, please see the main narrative of this report.
TO2 - Malaria	Overall delivery performance for malaria commodities has remained strong but has fallen slightly from the previous quarter. OTIF and OTD results were both at 81 percent this quarter, above the goal of 80 percent. The backlog increased slightly to 2 percent, well below the 5 percent target. Overall delivery volume has also increased this quarter, with 214 line items delivered in the period. The OTD and OTIF results shown here include all applicable reason codes and illustrate performance within GHSC-PSM's manageable control. "COVID-impacted" versions of these metrics are available in the main narrative of the report, showing how pandemic factors outside of project influence continue to impact supply chain outcomes. COVID-impacted OTD for the quarter was 68 percent, and COVID-impacted OTIF was 71 percent. In both cases, the gap between the standard result and the COVID-impacted result has widened, indicating more COVID-related impacts for line items promised during this period. For further discussion of global supply chain dynamics during the pandemic, please see the main narrative of this report.
TO3 - FP/RH	Overall delivery performance for family planning commodities was very strong for the period, with OTIF increasing from 89 percent to 95 percent and OTD decreasing slightly from 98 percent to 95 percent. The backlog stood at just 1.5 percent. Delivery volume overall was lower this period, with 44 line items delivered to countries. The OTD and OTIF results shown here include all applicable reason codes and illustrate performance within GHSC-PSM's manageable control. "COVID-impacted" versions of these metrics are available in the main narrative of the report, showing how pandemic factors outside of project influence continue to impact supply chain outcomes. COVID-impacted OTD was 95 percent this quarter, and OTIF was 95 percent, indicating that COVID-related delays were not prevalent during this period, since the OTIF and OTD results with and without COVID-impact reason codes were the same. For further discussion of global supply chain dynamics during the pandemic, please see the main narrative of this report.
TO4 - MNCH	Delivery performance for maternal and child health product remained strong for the period, at 83 percent OTIF and 100 percent OTD. Overall delivery volume was much lower this quarter, with only six items delivered. Backlogged items decreased significantly this quarter to 0 percent. The OTD and OTIF results shown here include all applicable reason codes and illustrate performance within GHSC-PSM's manageable control. "COVID-impacted" versions of these metrics are available in the main narrative of the report, showing how pandemic factors outside of project influence continue to impact supply chain outcomes. COVID-impacted OTD for the quarter was 60 percent, indicating the COVID-related factors impacted slightly less than half of the line items initially promised for this period. COVID-impacted OTIF was 50 percent, suggesting that several lines delivered this period originally had agreed delivery dates in earlier periods, but were delayed due to COVID. Please note, there are very few line items for TO4 this quarter, which helps create this variation in results. For further discussion of global supply chain dynamics during the pandemic, please see the main narrative of this report.

Delivery Performance

Current Reporting Period

2022-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
TO1 - COVID19	56%	36	78%	27	3.5%	403
COVID19	56%	36	78%	27	3.5%	403
TO1 - HIV	89%	931	89%	945	6.2%	4,042
Adult ARV	92%	87	96%	92	2.3%	389
Condoms	85%	41	83%	48	2.5%	163
Laboratory	89%	579	88%	579	8.0%	2,688
Other Non-Pharma	86%	64	89%	70	11.3%	186
Other Pharma	86%	36	91%	35	0.0%	218
Other RTK	100%	3	100%	3	0.0%	27
Pediatric ARV	89%	46	91%	45	0.0%	166
TB HIV	96%	45	98%	43	0.0%	110
Vehicles and Other Equipment	100%	9	100%	9	0.0%	9
VMMC	95%	21	95%	21	1.2%	86
TO2 - Malaria	81%	214	81%	223	2.0%	929
ACTs	68%	95	71%	100	0.0%	396
Laboratory	79%	19	83%	18	2.8%	72
LLINs	90%	42	88%	42	5.4%	149
mRDTs	92%	13	92%	13	1.1%	95
Other Non-Pharma	100%	1	50%	2	3.8%	26
Other Pharma	100%	1	100%	2	0.0%	5
Other RTK					0.0%	1
Severe Malaria Meds	95%	21	91%	22	5.0%	101
SMC	100%	16	100%	16	0.0%	45
SP	100%	6	75%	8	5.1%	39

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
TO3 - FP/RH	95%	44	95%	39	1.5%	199
Combined Oral Contraceptives	100%	2	67%	3	0.0%	28
Copper-Bearing Intrauterine Devices	100%	3	100%	3	0.0%	18
Emergency Oral Contraceptives	100%	1	100%	1	0.0%	11
Implantable Contraceptives	92%	12	92%	13	5.0%	40
Injectable Contraceptives	91%	11	100%	12	0.0%	70
Other Non-Pharma			100%	1	0.0%	17
Progestin Only Pills	100%	7	100%	6	8.3%	12
Standard Days Method	100%	8			0.0%	3
TO4 - MNCH	83%	6	100%	5	0.0%	131
Other Non-Pharma	100%	2	100%	2	0.0%	1
Other Pharma	75%	4	100%	3	0.0%	130

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

2022-Q2

▼

A3. Average overall cycle time

Task Order	# of line items delivered	Average Cycle Time	Cycle time target	Average dwell-adjusted cycle time
TO1 - COVID19	36	244	250	244
TO1 - HIV	931	238	250	224
TO2 - Malaria	214	346	340	311
TO3 - FP/RH	44	306		291
TO4 - MNCH	6	295	350	295
Total	1231	260		243

A3. Average overall cycle time (with TO3 Targets)

Task Order	# of line items delivered	Average Cycle Time	Cycle time target	Average dwell-adjusted cycle time
TO3 - FP/RH	44	306		291
Direct drop fulfillment	26	340	300	329
Warehouse fulfillment	18	256	250	236

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 238 days. Dwell-adjusted cycle time was 224 days. Both of these numbers fall below the target of 250 days. Holds had been applied to 102 delivered orders, averaging 68 days in duration. Order processing segment cycle times were an improvement from the previous quarter, with each segment being slightly shorter except for Process PO/DO, which is 3 days longer. At the logistics end, average pick up and delivery cycle times both decreased by a few days.
TO2 - Malaria	End-to-end cycle time for malaria commodities improved slightly upon last quarter, decreasing from 358 days to 346 days. Dwell-adjusted cycle times varied from those that are not dwell-adjusted, for a cycle time of 311 days. Holds were applied to 63 delivered orders, with an average hold time of 64 days. Average cycle times decreased by 26 days in Sourcing and Planning, and slightly in Manufacture/Prepare and Pick up segment, but increased in Deliver and Clarify.
TO3 - FP/RH	End-to-end cycle times for warehouse fulfillments for family planning increased this quarter, to 256 days from last quarter's 245, with a dwell-adjusted result of 236 days. Last quarter, the time spent on Process PO/DO was more than double the amount of time for the previous quarter, but this quarter, the time spent on Process PO/DO has started to recover to a time of 53 days. However, Clarify and Source has taken longer this period, with a cycle time of 86 days. Cycle times for direct drop fulfillments increased to an average of 340 days, from last quarter's 311 days, with a dwell-adjusted cycle time of 329 days. Three orders were placed on hold this quarter, averaging 129 days in hold duration. In general, there were fewer TO3 orders this quarter than last quarter, so each of the orders placed on hold had a greater impact on the overall cycle time. Multiple purchase orders of implantable contraceptives had very long cycle times this quarter, which greatly impacted the overall cycle time for especially warehouse fulfilments, but also slightly impacted direct drop fulfilment cycle times. Warehouse fulfilments for combined oral contraceptives also had a particularly long cycle time this quarter, impacting the overall warehouse fulfilment cycle time, while standard days method and progestin only pills for direct drop fulfilments had a longer cycle time, impacting the overall cycle time for this type of fulfilment.
TO4 - MNCH	Cycle times for maternal and child health decreased to an average of 295 days this quarter, with a dwell-adjusted cycle time also 295. There were no holds on TO4 products delivered this quarter. Manufacturing time this quarter dropped after last quarter's lengthy time, down to 113 days. The Process PO/DO, Clarify, and Sourcing and Planning sections also decreased significantly this quarter, while there was an increase toward the end of the cycle with Pick up and Deliver.

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 end-to-end cycle times. Targets are not set for individual segments or dwell-adjusted cycle time.

Cycle Time Performance

Current Reporting Period

2022-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	
TO1 - COVID19	219	178		290				244
COVID19	219	178		290				244
TO1 - HIV	228	246		284	207	228	206	238
Adult ARV	172			192	322	228	180	200
Condoms	166			342	147		232	303
Laboratory	221	254		329				234
Other Non-Pharma	256	225						233
Other Pharma	322	541		391				342
Other RTK	270							270
Pediatric ARV	205			218	170			199
TB HIV	313			344	256			316
Vehicles and Other Equipment		123						123
VMMC	144			237				171
TO2 - Malaria	222	455	562	375	103		197	346
ACTs	220			435	136		200	399
Laboratory	225		562	457				279
LLINs		455		311				338
mRDTs				317				317
Other Non-Pharma	197							197
Other Pharma	422							422
Severe Malaria Meds	189			315				279
SMC				256	92		185	221
SP				406				406
TO3 - FP/RH	267	210		375	189		299	306
Combined Oral Contraceptives	282						517	400
Copper-Bearing Intrauterine Devices					235			235
Emergency Oral Contraceptives	174							174
Implantable Contraceptives	283			982	166		323	377
Injectable Contraceptives		210		323			297	301
Progestin Only Pills				218	120		215	203
Standard Days Method				315				315

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

Fulfillment Channel Product Category	Direct Drop Fulfillment		Total
	Multiple	Sea	
Other Non-Pharma		233	233
Other Pharma	323	329	326
Total	323	281	295

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 end-to-end cycle times. Targets are not set for individual segments or dwell-adjusted cycle time.

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
Direct drop fulfillment	73	3	45		77	45	42
TO1 - COVID19	41	11	48		57	52	32
TO1 - HIV	65	3	47		80	40	25
TO2 - Malaria		1	41		63	58	81
TO3 - FP/RH		4	27		103	37	84
TO4 - MNCH	34	5	37		113	61	59
Warehouse fulfillment	65	2	61	55	11	44	35
TO1 - HIV	59	2	73	55	11	43	27
TO2 - Malaria		0	6	41	13	31	46
TO3 - FP/RH		1	53	61	12	49	54
Total	72	3	46	95			41

Quality Assurance Performance (TO2 only)

A2. QA processes completed within required lead times

Task Order	Total # of QA processes completed	% QA Processes On Time	A2 Target
TO2 - Malaria	94	96%	80%
ACTs	40	100%	80%
LLINs	16	100%	80%
mRDTs	12	83%	80%
Other Pharma	0		80%
Severe Malaria Meds	10	100%	80%
SMC	6	100%	80%
SP	10	80%	80%

A13. Out-of-specification percentage

Task Order	Total # of batches tested	Out-of-specification percentage	A13 Target
TO2 - Malaria	264	0.0%	1%
ACTs	127	0.0%	1%
LLINs	20	0.0%	1%
mRDTs	46	0.0%	1%
Other Pharma	0		1%
Severe Malaria Meds	20	0.0%	1%
SMC	37	0.0%	1%
SP	14	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
TO2 - Malaria	2	100%	90%
ACTs	0		90%
LLINs	1	100%	90%
mRDTs	0		90%
Other Non-Pharma			
Other Pharma	0		90%
Severe Malaria Meds	1	100%	90%
SMC	0		90%
SP	0		90%

Ref Analysis

- A02

A total of 96 percent of QA/QC processes were completed within the required lead times. This quarter is an improvement from previous quarters, specifically for the pharma product groups, leading to an overall strong result which surpasses the target of 80 percent. This was achieved by the proactive update to the target lead time for the SMC product SPAQ and improvement in the lab turnaround time. With COVID-19 transactions included, the result is 92 percent, with the impacted transactions increasing the denominator by four QA processes.
- A13

There were no out-of-specification findings this quarter.
- A14b

The vendor scorecard rating for lab service providers this quarter was 95 percent, an improvement of 11 percentage points from the previous quarter. Scores were consistent across the board, with invoice accuracy and responsiveness both scoring 100 percent, while completeness of documentation scored 98 percent, reliability scored 94, and service scored 84 percent, each an improvement from last quarter.
- A15

Two reports were due for issuance and both were submitted on time.

Warehouse Performance and Product Losses

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	Kenya	Damage	HIV/AIDS pharmaceuticals	\$3,311	\$65,279,222	0.01%
TO2 - Malaria	RDC	Damage	Malaria Pharmaceuticals	\$2,262	\$1,049,970	0.22%
TO1 - HIV	Kenya	Expiry	Laboratory Reagents	\$2,610	\$32,639,611	0.01%

A8. Shelf life remaining

Task Order	Inventory Balance	% Shelf Life Remaining	Shelf life target
TO1 - HIV	\$12,301,182	92%	80%
TO2 - Malaria	\$317,423	69%	70%
TO3 - FP/RH	\$5,548,428	73%	80%
Total	\$18,167,033	76%	

Ref	Task Order	Analysis
A08	TO1 - HIV	At the close of the quarter, the weighted average shelf life remaining for HIV/AIDS commodities at the RDC was 92 percent, with all product categories except pediatric ARVs exceeding 80 percent. Pediatric ARVs have a weighted average shelf life remaining of 76 percent, primarily impacted by the low shelf life of Darunavir 75. The demand for the pediatric ARV Darunavir 75 is very low. The project has offered the stock as a donation to countries to mitigate product wastage, but is set to expire in July 2022 and is not expected to be allocated to countries.
A08	TO2 - Malaria	Average shelf life remaining for the ALu stockpile was 62 percent at the close of this quarter. There is low stock risk for ACTs as firm orders have materialized from two countries. GHSC-PSM anticipates more emergency demand over the next two quarters, which will consume the current stockpile.
A08	TO3 - FP/RH	Family planning commodities dipped to 73 percent weighted average shelf life remaining. This was driven primarily by implantable contraceptives, which make up a larger portion of family planning inventory by value and which stood at 69 percent shelf life remaining at the end of the quarter. This was due primarily to reductions in demand and order cancelations for two-rod implants in Nigeria and Uganda. Orders were canceled due to overstocks in country, which led to the RDC holding greater buffer stock than expected. The demand has been low across all countries generally, but the majority of the low demand can be attributed to especially Nigeria and Uganda. However, in FY22, demand has materialized and GHSC-PSM is working to process these orders. Combined oral contraceptives also had a lower shelf life, at 71 percent. This is a comparatively small quantity, however, and has already been allocated to accepting countries. All other stocked products (injectables, copper-bearing IUDs, and progestin-only pills) had at least 80 percent shelf life remaining at the end of the quarter.
C07a	TO1 - HIV	There were no expiries of HIV/AIDS commodities at the regional distribution center this quarter.
C07a	TO2 - Malaria	There were no expiries of malaria commodities at the regional distribution center this quarter.
C07a	TO3 - FP/RH	There were no expiries of family planning commodities at the regional distribution center this quarter.
C07b	Crosscutting	There were three instances of product loss due to damage of over \$500 reported this quarter. Kenya had two damaged shipments of HIV/AIDS pharma. In both cases, the pallets were compressed or damaged. The Belgium RDC also reported a damaged shipment this quarter of malaria pharmaceuticals due to compression and damage to the pallets. Each of the losses represent less than 1 percent of the value of task order commodities delivered to the country or the RDC.

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.

Procurement Performance

Current Reporting Period

2022-Q2

A10. Framework contract percentage

Task Order	Procurement total	Framework contract percentage	Framework contract target
TO1 - COVID19	\$6,130,037	99%	
TO1 - HIV	\$150,443,078	87%	90%
TO2 - Malaria	\$61,855,120	96%	90%
TO3 - FP/RH	\$19,674,067	100%	95%
TO4 - MNCH	\$28,068	0%	85%
Total	\$238,130,370	91%	NA

A10. Product-level detail

Task Order	Framework contract percentage	Procurement total
TO1 - COVID19	99%	\$6,130,037
COVID19	99%	\$6,130,037
TO1 - HIV	87%	\$150,443,078
Adult ARV	96%	\$73,514,190
Condoms	100%	\$6,062,967
Laboratory	73%	\$54,329,731
Other Non-Pharma	47%	\$849,533
Other Pharma	100%	\$2,696,783
Other RTK	0%	\$1,234,123
Pediatric ARV	100%	\$2,922,909
TB HIV	100%	\$4,178,104
Vehicles and Other Equipment	0%	\$105,513
VMMC	100%	\$4,549,223
TO2 - Malaria	96%	\$61,855,120
ACTs	100%	\$7,059,091
Laboratory	98%	\$514,082
LLINs	93%	\$39,926,556
mRDTs	100%	\$10,508,763
Other Non-Pharma	100%	\$43,869
Other Pharma	100%	\$9,500
Severe Malaria Meds	100%	\$3,106,406
SP	100%	\$686,852

A10. Product-level detail

Task Order	Framework contract percentage	Procurement total
TO3 - FP/RH	100%	\$19,674,067
Combined Oral Contraceptives	100%	\$2,259,253
Emergency Oral Contraceptives	100%	\$65,772
Implantable Contraceptives	100%	\$10,507,020
Injectable Contraceptives	100%	\$6,231,710
Other Non-Pharma	100%	\$210,000
Progestin Only Pills	100%	\$384,912
Standard Days Method	100%	\$15,400
TO4 - MNCH	0%	\$28,068
Other Non-Pharma	0%	\$28,068

Task Order Analysis

TO1 - HIV	Use of framework agreements for HIV/AIDS products fell slightly to 87 percent in FY 2022 Q2. This was driven by a reduction in use of framework contracts for laboratory commodities, as well as one instance of non-framework procurement for adult ARVs. In the ARVs case, the project was tasked with fulfilling an order for the use of Venezuelan refugees in Colombia. The order was sourced from a local supplier in Colombia and required a number unique of regulatory clearances and approvals. As a result, the project used a one-off firm fixed price contract instead of its usual framework contracts. Other major product groups, including condoms, other pharma, pediatric ARVs, TB HIV, and VMMC products each had framework contract percentages of 100 percent.
TO2 - Malaria	Malaria procurements remained above the target, at 96 percent utilization of framework contracts this quarter. This slight decline is primarily due to LLINs, which used framework contracts for 93 percent of procurement value. This is due to orders placed for a country with additional stringent quality requirements, which necessitate additional risk to the suppliers and often prices exceeding those in the project's usual long-term agreements. The orders were fulfilled using a one-off contract. ACTs, mRDTs, other pharma and non-pharma, severe malaria medicines, and SP all have made full use of framework agreements this quarter.
TO3 - FP/RH	Family planning continues to procure all items under framework contracts, per the sourcing strategy for these commodities. The increase in procurement totals in Q2 from Q1 is due primarily to the inclusion of 3 products that had not been procured in Q1, and an increase in the procurement of both Levonorgestrel + Placebo and Medroxyprogesterone Acetate 150mg/mL injections.
TO4 - MNCH	There were only two orders for maternal, child and newborn health commodities released this quarter: both non-pharma supplies for Nigeria. Both orders were non-framework contract orders, but accounted for less than \$30,000 combined. An additional purchase order for oxytocin was released for DRC, but this was a replacement for a previous order. There was no cost for the commodity, so it does not impact this indicator.

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
TO2 - Malaria	10.3%	214
ACTs	3.2%	95
LLINs	21.4%	42
Severe Malaria Meds	9.5%	21
Laboratory	0.0%	19
SMC	0.0%	16
mRDTs	38.5%	13
SP	33.3%	6
Other Non-Pharma	0.0%	1
Other Pharma	100.0%	1
TO3 - FP/RH	18.2%	44
Implantable Contraceptives	25.0%	12
Injectable Contraceptives	9.1%	11
Standard Days Method	0.0%	8
Progestin Only Pills	57.1%	7
Copper-Bearing Intrauterine Devices	0.0%	3
Combined Oral Contraceptives	0.0%	2
Emergency Oral Contraceptives	0.0%	1
Total	11.6%	258

Task Order	Analysis
TO2 - Malaria	The need for registration waivers to import malaria items fell to 10.3 percent this quarter, marginally above the target. Waivers were used across commodity groups and countries this quarter, but were more prevalent for LLINs, RDTs, and orders destined for Nigeria, Burundi, and Angola.
TO3 - FP/RH	The use of registration waivers for family planning products rose to 18.2 percent of deliveries this quarter, or eight line items. Three of these were progestin-only pills for Mozambique. Three waivers were also required for implantable contraceptives in three countries, as well as one use for injectables and one additional country for progestin-only pills.

Supply Plan Submissions

Current Reporting Period

2022-Q2

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

Product Group	# of supply plans required	Supply plan submission rate	Submission target
ARVs	20	95%	95%
Condoms	21	90%	90%
FP commodities	22	91%	95%
Lab (HIV diagnostics)	15	93%	90%
Malaria commodities	28	93%	90%
RTKs	20	95%	90%
TPT	15	100%	85%
VMMC	5	80%	80%
Total	146		

Task Order	Analysis
TO1 - HIV	Supply plan submissions for key HIV/AIDS commodity groups remained strong in FY2022 Q2, with a 100 percent submission rate for TPTs, 95 percent for ARVs and RTKs, 93 percent for lab products, and 90 percent for condoms. The submission rate for VMMC increased to 80 percent, from last quarter's 67.
TO2 - Malaria	All but two required malaria supply plans were submitted as expected this quarter.
TO3 - FP/RH	All but two family planning supply plans were submitted as expected this quarter, decreasing the submission rate to just below the target at 91 percent. All but two condom supply plans were submitted this quarter, with the supply plan submission rate decreasing slightly to 90 percent, exactly at the target. The two countries that did not submit the supply plans as expected this quarter are Guinea and Angola. Guinea was unable to submit these plans due to political strife. Angola struggled to submit plans this quarter due to a transition from Pipeline to OAT.

Supply Plan and Forecast Performance

Current Reporting Period

2022-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	4%	-4%	16%	22%	-16%
Condoms	42%	42%	31%	25%	31%
Laboratory	21%	21%	1%	25%	-1%
Pediatric ARV	7%	-7%	6%	30%	-6%

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	23%	23%	10%	35%	10%
mRDTs	66%	66%	25%	25%	25%

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	5%	-5%	45%	35%	45%
Copper-bearing Intrauterine Devices	0%	-0%	29%	35%	-29%
Implantable Contraceptives	16%	-16%	11%	25%	-11%
Injectable Contraceptives	27%	-27%	1%	25%	-1%
Progestin Only Pills	8%	8%	17%	25%	17%

Task Order Analysis

TO1 - HIV	Forecast error for condoms decreased slightly to 42 percent for the quarter and 31 percent for the last four quarters. Requested quantities have consistently exceeded forecasts, with two countries placing male condom emergency orders with very short lead times this quarter. One country also placed a short order for lubricants. Female condoms performed well. The GHSC-PSM team will work to remind countries of standard lead times and ask them to abide by them if possible.
TO1 - HIV	Supply plan error for adult ARVs has maintained steady performance for several quarters. In Q2, requested quantities were only slightly less than supply plans, for an error rate of 4 percent. The entire variance can be accounted for by one large order that was not placed. On the four-quarter rolling metric, supply plan error is 16 percent. For pediatric ARVs, supply plan error decreased to 7 percent for the quarter. Again, this error can be accounted for by a single large order that was not placed. The four-quarter error rate remains consistent at 6 percent.
TO1 - HIV	Supply plan error for lab commodities widened slightly in Q2 compared to Q1, from 14 percent to 21 percent. While CD4, EID, molecular products, and VL test products were over-ordered compared to supply plans, other lab products were under-ordered, resulting in an overall positive bias. On the four-quarter rolling metric, performance has narrowed to just one percent, as over-ordering this period has balanced out under-ordering in previous quarters.
TO2 - Malaria	Supply plan error for ACTs decreased this quarter to 23 percent. Some countries struggled with planning in Q2, as some needed to conduct new quantification exercises to adjust their plans to current trends, with some placing sizable emergency orders. The rolling four quarters metric rose slightly to 10 percent, still well within the target range. Among ACT products, ASAQ remains a challenging commodity as countries adjust to changing consumption trends. A larger quantity of ASAQ products had been planned but were not ordered. AL and mRDTs faced the opposite problem, with more products ordered than had been planned. The GHSC-PSM TO2 team will encourage revisions to supply plans as soon as new quantification results become available. Additionally, the team will request that field offices alert them as new consumption trends that are contrary to what was estimated are observed
TO3 - FP/RH	Forecast errors for implants decreased slightly and for injectables increased slightly from the previous quarter, though both remain relatively low, at 16 percent and 27 percent, respectively. Insufficient funding in one country led to several cancellations this quarter, accounting for the overplanning. Performance on the rolling four-quarter metric is within the target range, at 11 percent for implants and only 1 percent for injectables. The error rate for combined orals was much lower, at only 5 percent for the quarter. In the four-quarter metric, the large order increase for Ghana in FY21 continues to push the results out of the targeted range but is slowly being recovered. This is expected to fully recover in the latter half of FY22. Progestin-only pills saw a low error this quarter at 8 percent. Lastly copper-bearing IUDs saw an almost perfect quarter

Total Landed Cost

Current Reporting Period

2022-Q2

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	7.1%	10%	\$622,604,943	11.3%
TO2 - Malaria	15.2%	18%	\$226,855,418	18.4%
TO3 - FP/RH	15.0%	22%	\$34,792,737	29.5%
TO4 - MNCH	5.0%	14%	\$12,133,124	11.7%
Total	9.4%	12%	\$896,386,223	13.8%

A5. Cost Breakdown

Cost Type	TO1 - HIV	TO2 - Malaria	TO3 - FP/RH	TO4 - MNCH	Total
Freight and Logistics	\$44,189,983	\$34,487,992	\$5,222,781	\$608,441	\$84,509,197
Country-specific Logistics	\$1,897,908	\$621,469	\$55,141	\$4,264	\$2,578,782
Demurrage	\$166,630	\$459,398	\$121,966	\$660	\$748,653
Drop Ship Freight	\$29,027,609	\$31,366,267	\$3,451,362	\$603,518	\$64,448,757
Inbound Freight	\$2,523,532	\$118,313	\$95,902	\$0	\$2,737,747
Insurance	\$932,529	\$419,954	\$140,272	\$0	\$1,492,756
Loss	\$603	\$0	\$1,714	\$0	\$2,317
Outbound Freight	\$7,864,333	\$1,281,075	\$1,181,841	\$0	\$10,327,248
Security	\$359,326	\$95,131	\$5,260	\$0	\$459,717
Warehousing	\$1,417,512	\$126,385	\$169,322	\$0	\$1,713,220
HQ Operations	\$26,115,268	\$7,289,391	\$5,039,170	\$812,977	\$39,256,805
Forecasting and Supply Planning	\$1,838,359	\$822,548	\$603,015	\$11,018	\$3,274,940
GS1	\$999,925	\$369,738	\$35,802	\$35,414	\$1,440,878
MIS	\$3,911,226	\$763,400	\$1,392,528	\$94,118	\$6,161,271
Monitoring and Evaluation	\$5,120,479	\$1,029,128	\$778,283	\$121,001	\$7,048,891
Procurement	\$12,736,371	\$4,223,211	\$2,163,864	\$527,919	\$19,651,365
Warehousing and Distribution	\$1,508,909	\$81,366	\$65,677	\$23,508	\$1,679,459
Total	\$70,305,250	\$41,777,383	\$10,261,951	\$1,421,418	\$123,766,002

Task Order Analysis

- TO1 - HIV

This period, freight and logistics costs as a percentage of dollar value delivered for HIV and COVID-19 commodities remained consistent, at 7.1 percent. The value of commodities delivered was similar to the previous period, with some declines in expenditures on all categories of freight (drop ship, inbound, and outbound). When headquarters supply chain operations costs are factored in, the total landed cost result has remained flat, at just above 11 percent. Headquarters expenditures have increased this period, most notably in Procurement.
- TO2 - Malaria

Data for the current period shows total landed costs rising slightly, to just over 15 percent. Expenditures in drop ship freight increased from the previous period, while the total value of commodities delivered slightly declined. Total landed cost including headquarters operations expenditures also showed an increase, rising to 18.4 percent. Decreased spending on M&E was offset by increases in spending on Procurement and FASP.

Per agreement with USAID, quality assurance costs are not included in this indicator, since GHSC-PSM does not manage QA across all TOs. For TO2, where QA is managed by the project, the total landed cost (freight and logistics) with QA included increases to 16.2 percent. Total landed cost including HQ operations is 20.0 percent with QA included.
- TO3 - FP/RH

This period, freight and logistics costs as a percentage of family planning commodities delivered declined to 15 percent. This was driven by a reduction in outbound freight expenditures and an increase in the value of commodities delivered. When headquarters supply chain operations cost are factored in, the total landed cost result is 29.5 percent. Headquarters expenditures have remained roughly consistent this period. Increases in Procurement and M&E expenditures were offset by a reduction in MIS spending.
- TO4 - MNCH

Data for the current period shows that freight and logistics costs as a percentage of MNCH commodities delivered continues to fall, reaching 5 percent. Expenditures in freight and logistics categories have fallen, while the total value of commodities delivered increased by 70 percent. This delivery surge included high-value deliveries to DRC and Zambia in the first quarter of FY22. Invoices and payments for deliveries at this time may still be pending at the time of reporting, which may mean costs associated with these higher volumes are underrepresented in this data. It should be noted that costs for these deliveries may be high, as freight rates remained elevated throughout calendar year 2021 during the Delta and Omicron COVID-19 surges. Total landed cost with headquarters operations expenses included also fell this period, to 11.7 percent. Headquarters expenditure increased this period, but were offset in the results due to the more pronounced increase in delivery volume.

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

2022-Q2



A14a-c. Average vendor rating score

Vendor Type	Average vendor rating
Commodity Supplier	70%
Freight Forwarder	89%
QA Lab	95%

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?	94%	48%	45%
2 - Responsiveness	Does the lab provide prompt response after receipt of GHSC-PSM request for testing	100%	15%	15%
3 - Completeness of Documentation	Frequency of modification to Certificates of Analysis (CoA)	98%	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)	82%	10%	8%
Total			100%	95%

Analysis

The vendor scorecard rating for lab service providers this quarter was 95 percent, an improvement of 11 percentage points from the previous quarter. Scores were consistent across the board, with invoice accuracy and responsiveness both scoring 100 percent, while completeness of documentation scored 98 percent, reliability scored 94, and service scored 84 percent, each an improvement from last quarter.

On-time performance (OTP) for high-risk, high-value suppliers was 70 percent this quarter, roughly consistent over the last few quarters. This is in large part due to continued lower performance from lab suppliers, which accounted for 63 percent of lines from this past quarter, and which had an OTP score of 61 percent. In many cases, the delays recorded for lab suppliers stem from one delayed line causing an entire shipment to count as late, since all items in that order must be shipped together because the products need to be used together. Some other commodity groups such as ARVs and Malaria continue to perform at a high level, nearing or surpassing the internal benchmark of 90 percent. During this quarter, the project implemented a composite scoring system for C/D term orders. C/D terms orders will now be tracked with a supplier delivery date (SDD) in addition to the goods available date (GAD) used previously. SDD timeliness accounts for 75 percent of the score and GAD timeliness accounts for 25% for these orders. For E/F term shipments the scoring is the same as it was previously.

Complete data for freight forwarder vendor scorecards was available this quarter, showing a result of 89 percent for average 3PL performance. Performance within the most heavily weighted components, including on-time performance, spot quote turnaround, and rate of deliveries without NCRs, was strong, exceeding 90 percent on all indicators. Invoicing accuracy has continued to improve, rising to 84 percent overall (although timeliness remains a challenge, with only 52 percent of invoices received within 30 days of delivery). Delivery accuracy to stated ETAs has also been a challenge during the pandemic, with scores slowly slipping over time. This quarter, one fourth of shipments arrived more than five days off from the ETA provided at the time of booking confirmation, an improvement from last quarter's one third.

Data notes

Per the GHSC-PSM M&E plan, targets are not required for vendor performance indicators.

Global Advocacy Engagements



HIV/AIDS

2

Name of Engagement	Description
International Conference on AIDS and STIs in Africa (ICASA)	The project presented three poster presentations, sharing successes and lessons learned at ICASA in December 2021: 1) Strengthening HIV Viral Load Laboratory Supply Chains and Network Performance through a Sustainable, Replicable, Data-driven Approach, 2) Quality Management Improvement Approach in Rwanda, and 3) Approaches applied to ensure essential HIV services during COVID-19 in Ethiopia.
African Society for Laboratory Medicine (ASLM) 2021 Conference	The project hosted a satellite session in November 2021 in partnership with USAID at ASLM 2021, entitled: Beyond DNO: The Changing Landscape of Laboratory Medicines. The session was also held as a webinar for all USAID staff in December 2021.



Malaria

5

Name of Engagement	Description
Vector Control Supply Access Task Force meeting	As operations somewhat normalized in the current phase of the pandemic, the task force finalized a terms of reference in Q1 to establish a longer-term structure. The terms of reference included the objectives, membership, call structure, and modus operandi of the Vector Control Supply Access Task Force. The project provided updates 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.
GF, AMF, PSM, PMI ITN Coordination Call	Coordination call between key procurers of ITNs that involves collaboration around upcoming next-gen ITN orders; sharing of intel regarding market conditions and logistics challenges, as well as a forum for alignment on key strategic initiatives.
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. The reduced frequency is due to the stabilization of the market, which was initially disrupted by the onset of the pandemic in 2020, as some suppliers dropped out of the RDT market to pursue manufacturing of COVID-19 tests. During the current period, the task force explored the state of the RDT market based on a market landscape assessment conducted by UNITAID, and examined 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 CY2022, given the evolving dynamics, particularly in the artemisinin market.
Pharma Task Force Meetings	Pharma Task Force meetings shifted from bi-weekly to monthly meetings in Q1. Meetings in Q1 and Q2 focused on upstream and downstream supply; price increases on finished pharmaceutical product (FPP) due to price volatility in the vegetal artemisinin market; and a out-of-specification quality control investigation on artesunate injectable for a key supplier.

Global Advocacy Engagements

Current Reporting Period

2022-Q2



Family Planning and Reproductive Health

8

Continued on next page

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 terms of use (ToUs); and review and discuss market-level demand forecasts produced by the CPG/GFPVAN to align on outputs and methodology.
FP2030 Performance Monitoring and Evidence Working Group	This group provides technical advice and support for monitoring progress towards the FP2030 goal; to promote the use of data for knowledge sharing and to inform decision-making; and to contribute to the understanding of quantitative and qualitative evidence in key dimensions of family planning, such as quality of care and human rights. At the most recent meeting (on March 16, 2022, held remotely), the PME working group discussed: Early Career Fellows, mentorships, and planning for upcoming annual meetings for the Population Association of America and the International Conference on Family Planning. The group also prepared for the upcoming PME Summer Meetings to be held in June 2022.
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 terms of use (ToUs); 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 Management Task Force: Operational management of data feeds with UNFPA and ARTMIS; master and transactional data management</p> <p>Tech Management Task Force: Overview of integration statuses with donors and with country eLMIS's; overview of VAN releases and progress</p> <p>GHSC-PSM User Engagement meeting: Review of GHSC-PSM's 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> <p>In FY22 Q1, GHSC-PSM engagement with RHSC through these meetings focused on enhancing the ARTMIS data feed to GFPVAN by adding requisition orders and solutioning, designing and mapping this new data in Data and Tech Management Task Force meetings. The project also participated in the regular GFPVAN Steering Committees, which sought to identify strategic priorities for the VAN across member organizations for the upcoming year in spite of funding and resource constraints. GHSC-PSM also participated in country-specific integration discussions as Malawi worked toward integrating the VAN with its interoperability layer.</p> <p>In FY22 Q1, PSM engagement with RHSC through these meetings focused on enhancing the ARTMIS data feed to GFPVAN by adding requisition orders and solutioning, and designing and mapping this new data in Data and Tech Management Task Force meetings. PSM also participated in the regular GFPVAN Steering Committees, which sought to identify strategic priorities for the VAN across member organizations for the upcoming year in spite of funding and resource constraints. PSM also participated in country-specific integration discussions as Malawi worked toward integrating the VAN with its interoperability layer.</p>
Hormonal Intrauterine Device (IUD) Steering Committee and Hormonal IUD Access Group	<p>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.</p> <p>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.</p>

Global Advocacy Engagements

Current Reporting Period

2022-Q2



Family Planning and Reproductive Health

8

See more on previous page

Name of Engagement	Description
IAWG Supplies Sub-Working Group	GHSC-PSM participates in the monthly meetings for the Inter-Agency Working Group (IAWG) on Reproductive Health in Crises, 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 U.S., as well as the draft Emergency Supply Pre-Positioning Strategy led by UNFPA.
Market Development Approaches Working Group	GHSC-PSM regularly participates in the MDAWG meetings held by the RHSC. The working group provides a forum for those in the RH community working on market dynamics to convene and discuss common challenges and issues. In Q2, GHSC-PSM participated in a webinar focused on Harmonizing Product Labeling. This webinar shared recent efforts led by Impact RH360/Medicines360, WCG Cares, and FHI 360 to develop a strategy for harmonizing labeling for Impact RH360's hormonal IUD product, Avibela.
Packaging Harmonization	In December 2021, GHSC-PSM presented to USAID and UNFPA the results of the FY 2021 MPA-IM focused packaging harmonization and green packaging efforts to explore opportunities for optimum packaging of MPA-IM that can benefit in-country supply chains, reduce environmental impact, and provide potential cost savings. The presentation also included recommendations for donor logo usage across all product categories with a focus on environmental impact. In FY 2022, GHSC-PSM is working to implement these recommendations.
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 on 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 (CS) Indicators survey.

Global Advocacy Engagements



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 2022. 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 2022, 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. The focus of the workshops will be designing evidence-based interventions to improve access to these essential commodities for the treatment of pneumonia and possible severe bacterial infection (PSBI) in infants.
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, PSM staff attended and engaged in sessions around the COMPASS initiative, which seeks to improve local ownership of supply chains.



Crosscutting

4

Name of Engagement	Description
American Society of Tropical Medicine and Hygiene, virtual, November 17-21, 2021	Two posters were presented on the project's malaria and data visibility work from GHSC-PSM's Zambia project office.
Association for Supply Chain Management (ASCM) CONNECT Conference	The project gave two presentations from the NFO Managing Director, HSS Warehousing and Distribution Team Lead, and TO4 Task Order Director on last-mile delivery and COVID-19 support at the Association for Supply Chain Management CONNECT Conference.
Global Health Supply Chain Summit, virtual, December 7-9, 2021	The project gave eight crosscutting presentations from staff representing the FP/RH task order and project offices in Angola, Rwanda, Malawi, Ethiopia, and Kenya. GHSC-PSM's Malawi vaccine team was one of three finalists for the Global Health Supply Chain Summit grand prize.
Health Informatics in Africa (Helina)	GHSC-PSM's MIS Subject Matter Specialist represented the FP/RH task order and presented on emergency supply chain preparedness.

Complete Quarterly Results (TO1)

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
TO1 - COVID19	56%	36	78%	27	3.5%	403	99%	\$6,130,037
COVID19	56%	36	78%	27	3.5%	403	99%	\$6,130,037
TO1 - HIV	89%	931	89%	945	6.2%	4,042	87%	\$150,443,078
Adult ARV	92%	87	96%	92	2.3%	389	96%	\$73,514,190
Condoms	85%	41	83%	48	2.5%	163	100%	\$6,062,967
Laboratory	89%	579	88%	579	8.0%	2,688	73%	\$54,329,731
Other Non-Pharma	86%	64	89%	70	11.3%	186	47%	\$849,533
Other Pharma	86%	36	91%	35	0.0%	218	100%	\$2,696,783
Other RTK	100%	3	100%	3	0.0%	27	0%	\$1,234,123
Pediatric ARV	89%	46	91%	45	0.0%	166	100%	\$2,922,909
TB HIV	96%	45	98%	43	0.0%	110	100%	\$4,178,104
Vehicles and Other Equipment	100%	9	100%	9	0.0%	9	0%	\$105,513
VMMC	95%	21	95%	21	1.2%	86	100%	\$4,549,223
Total	88%	967	89%	972	5.9%	4,445	88%	\$156,573,115

A3. Cycle time (average)

Fulfillment Channel Task Order	Direct Drop Fulfillment			Warehouse Fulfillment			Total
	Air	Land	Sea	Air	Land	Sea	
TO1 - COVID19	219	178	290				244
COVID19	219	178	290				244
TO1 - HIV	228	246	284	207	228	206	238
Adult ARV	172		192	322	228	180	200
Condoms	166		342	147		232	303
Laboratory	221	254	329				234
Other Non-Pharma	256	225					233
Other Pharma	322	541	391				342
Other RTK	270						270
Pediatric ARV	205		218	170			199
TB HIV	313		344	256			316
Vehicles and Other Equipment		123					123
VMMC	144		237				171
Total	228	246	285	207	228	206	238

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	HIV/AIDS pharmaceuticals	\$3,311	\$65,279,222	0.01%
Kenya	Expiry	Laboratory Reagents	\$2,610	\$32,639,611	0.01%

A8. Shelf life remaining

% Shelf Life Remaining	Inventory Balance
92%	\$12,301,182

Crosscutting indicators

A14. Average vendor ratings

Vendor Type	Average vendor rating
Commodity Supplier	70%
Freight Forwarder	89%

Reporting Period

2022-Q2

A6a and A6b. Absolute percent supply plan or forecast error

A6 Indicator	Supply plan/forecast error	Supply plan/forecast bias	4-quarter error	4-quarter bias
A6a - Supply plan error				
Adult ARV	4%	-4%	16%	-16%
Laboratory	21%	21%	1%	-1%
Pediatric ARV	7%	-7%	6%	-6%
A6b - Forecast Error				
Condoms	42%	42%	31%	31%

B6. Quarterly supply plan submissions

Product Group	Supply plan submission rate	# of supply plans required
ARVs	95%	20
Condoms	90%	21
Lab (HIV diagnostics)	93%	15
RTKs	95%	20
VMMC	80%	5

Complete Quarterly Results (TO2)

Reporting Period

2022-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
TO2 - Malaria	81%	214	81%	223	2.0%	929	10.3%	214	96%	\$61,855,120	96%	94	0.0%	264	100%	2
ACTs	68%	95	71%	100	0.0%	396	3.2%	95	100%	\$7,059,091	100%	40	0.0%	127		0
Laboratory	79%	19	83%	18	2.8%	72	0.0%	19	98%	\$514,082						
LLINs	90%	42	88%	42	5.4%	149	21.4%	42	93%	\$39,926,556	100%	16	0.0%	20	100%	1
mRDTs	92%	13	92%	13	1.1%	95	38.5%	13	100%	\$10,508,763	83%	12	0.0%	46		0
Other Non-Pharma	100%	1	50%	2	3.8%	26	0.0%	1	100%	\$43,869						
Other Pharma	100%	1	100%	2	0.0%	5	100.0%	1	100%	\$9,500		0		0		0
Other RTK					0.0%	1										
Severe Malaria Meds	95%	21	91%	22	5.0%	101	9.5%	21	100%	\$3,106,406	100%	10	0.0%	20	100%	1
SMC	100%	16	100%	16	0.0%	45	0.0%	16			100%	6	0.0%	37		0
SP	100%	6	75%	8	5.1%	39	33.3%	6	100%	\$686,852	80%	10	0.0%	14		0
Total	81%	214	81%	223	2.0%	929	10.3%	214	96%	\$61,855,120	96%	94	0.0%	264	100%	2

A3. Cycle time (average)

Fulfillment Channel Task Order	Direct Drop Fulfillment				Warehouse Fulfillment		Total
	Air	Land	Multiple	Sea	Air	Sea	
TO2 - Malaria	222	455	562	375	103	197	346
ACTs	220			435	136	200	399
Laboratory	225		562	457			279
LLINs		455		311			338
mRDTs				317			317
Other Non-Pharma	197						197
Other Pharma	422						422
Severe Malaria Meds	189			315			279
SMC				256	92	185	221
SP				406			406
Total	222	455	562	375	103	197	346

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

Country	Type of Loss	Product Group	Loss Value	Loss Denominator	% Loss
RDC	Damage	Malaria Pharmaceutica Is	\$2,262	\$1,049,970	0.22%

B6. Quarterly supply plan submissions

Product Group	Supply plan submission rate	# of supply plans required
Malaria commodities	93%	28

A8. Shelf life remaining

% Shelf Life Remaining	Inventory Balance
62%	\$317,423

A14. Average vendor rating - QA labs

Average vendor rating
95%

A6a. Absolute percent supply plan error

A6 Indicator	Supply plan/ forecast error	Supply plan/ forecast bias	4-quarter error	4-quarter bias
A6a - Supply plan error				
ACTs	23%	23%	10%	10%
mRDTs	66%	66%	25%	25%

Crosscutting indicators

A14. Average vendor ratings

Vendor Type	Average vendor rating
Commodity Supplier	70%
Freight Forwarder	89%

Complete Quarterly Results (TO3)

Reporting Period

2022-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
TO3 - FP/RH	95%	44	95%	39	1.5%	199	100%	\$19,674,067
Combined Oral Contraceptives	100%	2	67%	3	0.0%	28	100%	\$2,259,253
Copper-Bearing Intrauterine Devices	100%	3	100%	3	0.0%	18		
Emergency Oral Contraceptives	100%	1	100%	1	0.0%	11	100%	\$65,772
Implantable Contraceptives	92%	12	92%	13	5.0%	40	100%	\$10,507,020
Injectable Contraceptives	91%	11	100%	12	0.0%	70	100%	\$6,231,710
Other Non-Pharma			100%	1	0.0%	17	100%	\$210,000
Progestin Only Pills	100%	7	100%	6	8.3%	12	100%	\$384,912
Standard Days Method	100%	8			0.0%	3	100%	\$15,400
Total	95%	44	95%	39	1.5%	199	100%	\$19,674,067

Task Order	Temporary registration waiver percentage	Total # of line items delivered
TO3 - FP/RH	18.2%	44
Progestin Only Pills	57.1%	7
Implantable Contraceptives	25.0%	12
Injectable Contraceptives	9.1%	11
Combined Oral Contraceptives	0.0%	2
Copper-Bearing Intrauterine Devices	0.0%	3
Emergency Oral Contraceptives	0.0%	1
Standard Days Method	0.0%	8
Total	18.2%	44

A3. Cycle time (average)

Fulfillment Channel Task Order	Direct Drop Fulfillment			Warehouse Fulfillment		Total
	Air	Land	Sea	Air	Sea	
TO3 - FP/RH	267	210	375	189	299	306
Combined Oral Contraceptives	282				517	400
Copper-Bearing Intrauterine Devices				235		235
Emergency Oral Contraceptives	174					174
Implantable Contraceptives	283		982	166	323	377
Injectable Contraceptives		210	323		297	301
Progestin Only Pills			218	120	215	203
Standard Days Method			315			315
Total	267	210	375	189	299	306

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

Country	Type of Loss	Product Group	Loss Value	Loss Denominator	% Loss
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A6b. Absolute percent forecast error

A6 Indicator	Supply plan/ forecast error	Supply plan/ forecast bias	4-quarter error	4-quarter bias
A6b - Forecast Error				
Combined Oral Contraceptives	5%	-5%	45%	45%
Condoms	42%	42%	31%	31%
Copper-bearing Intrauterine Devices	0%	-0%	29%	-29%
Implantable Contraceptives	16%	-16%	11%	-11%
Injectable Contraceptives	27%	-27%	1%	-1%
Progestin Only Pills	8%	8%	17%	17%

B6. Quarterly supply plan submissions

Product Group	Supply plan submission rate	# of supply plans required
Condoms	90%	21
FP commodities	91%	22

A8. Shelf life remaining

% Shelf Life Remaining	Inventory Balance
73%	\$5,548,428

Crosscutting indicators	A14. Average vendor ratings	
	Vendor Type	Average vendor rating
	Commodity Supplier	70%
	Freight Forwarder	89%

Complete Quarterly Results (TO4)

Task Order	OTIF	A1a. OTIF rate	A1b. OTD rate	A16. Backlog perentage		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
TO4 - MNCH	83%	6	100%	5	0.0%	131	0%	\$28,068
Other Non-Pharma	100%	2	100%	2	0.0%	1	0%	\$28,068
Other Pharma	75%	4	100%	3	0.0%	130		
Total	83%	6	100%	5	0.0%	131	0%	\$28,068

Reporting Period

2022-Q2

Crosscutting indicators

A14. Average vendor ratings

Vendor Type	Average vendor rating
Commodity Supplier	70%
Freight Forwarder	89%

A3. Cycle time (average)

Task Order	Direct Drop Fulfillment	Total
TO4 - MNCH	295	295
Other Non-Pharma	233	233
Other Pharma	326	326
Total	295	295

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
A03	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. The project is implementing new dwell tracking procedures, with the intent of reporting dwell-adjusted cycle time by FY2021.

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 (RDCS) 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.

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 Engagments

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 Artesunate/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 https://www.usaid.gov/what-we-do/global-health/family-planning/couple-years-protection-cyp 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.