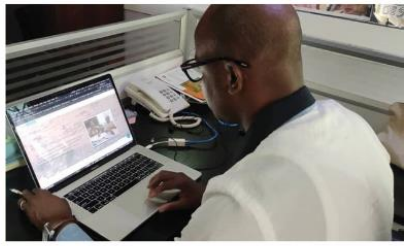
USAID GLOBAL HEALTH SUPPLY CHAIN PROGRAM
Procurement and Supply Management




FISCAL YEAR 2021

QUARTERLY REPORT | QUARTER 3

APRIL 1, 2021 TO JUNE 30, 2021

USAID FROM THE AMERICAN PEOPLE

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

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

FISCAL YEAR 2021

QUARTERLY REPORT

April 1, 2021, to June 30, 2021

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

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.

Contents

ACRONYMS

3HP	isoniazid/rifapentine (combination treatment for tuberculosis)
3PL	third-party logistics
ABC	Activity-Based Costing
ALu	artemether-lumefantrine
API	active pharmaceutical ingredient
APWG	ARV Procurement Working Group
ART	antiretroviral therapy
ARV	antiretroviral
CPG	Consensus Planning Group
COP20	Country Operational Plan 2020
DCP	decentralized procurement
DDD	Decentralized Drug Distribution
DMPA	depot-medroxyprogesterone acetate
DOOR	Drugs Out of Range
DRC	Democratic Republic of the Congo
DRF	Drug Revolving Fund

EID	early infant diagnosis
eLMIS	electronic logistics management information system
ESC	Emergency Supply Chain
FASP	forecasting and supply planning
FDA	Food and Drug Administration
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
GLN	Global Location Number
GFPVAN	Global Family-Planning Visibility and Analytics Network
GTIN	global trade item number
IAR	inter-action review

IM	intramuscular
INH	isoniazid
IUD	intrauterine device
JMS	Joint Medical Stores (Uganda)
KPI	key performance indicator
KSM	key starting materials
LLIN	long-lasting insecticide-treated net
LMIS	logistics management information system
LZN	lamivudine/zidovudine/nevirapine
MCH	maternal and child health
MNCH	maternal, newborn, and child health
MOH	Ministry of Health
MOQ	Minimum Order Quantity
MTS	made to stock
NPC	National Product Catalog
NMCP	National Malaria Control Program
NQC	National Quantification Committee

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
PPH	postpartum hemorrhage
PPMR	Procurement Planning and Monitoring Report
PPMRm	Procurement Planning and Monitoring Report-malaria
PrEP	pre-exposure prophylaxis
Q	quarter
QA	quality assurance
QAT	Quantification Analytics Tool
QC	quality control
RDC	regional distribution center
RDT	rapid diagnostic test
RFQ	request for quotation

RHSC	Reproductive Health Supplies Coalition
RTK	rapid test kit
SC	subcutaneous
SDP	service delivery point
SMC	seasonal malaria chemoprevention
SMO	social marketing organization
SOP	standard operating procedure
SPAQ	sulphadoxine-pyrimethamine + amodiaquine
TB	tuberculosis
TLD	tenofovir/lamivudine/dolutegravir
TO	task order
TPT	TB preventive treatment
TransIT	transportation information tool
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USG	U.S. Government

VMMC	voluntary medical male circumcision
Warehouse ADVISER	Warehouse AIDS Data Visibility, Evaluation and Reporting
WHO	World Health Organization

EXECUTIVE SUMMARY

USAID's Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project is pleased to present this report to summarize our work and performance for the third quarter (Q3) of Fiscal Year 2021 (FY 2021). 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.

In Q3, GHSC-PSM monitored the impact of new COVID-19 outbreaks as a second wave of the pandemic hit India, greatly affecting production capacity at several supplier manufacturing locations across the country. The supply chain, however, had already adapted due to improved practices and lessons learned from the first wave of the pandemic, and suppliers in India maintained most of their committed goods availability dates (GADs). Manufacturers increased their safety stock for raw materials, diversified sources of supply, and intensified communications throughout the supply chain. Commodity risk profiles identified supplier delays to inform decision-making and minimize or avoid further delays. The project liaised with potentially impacted suppliers to proactively identify and manage delays, obtain products as quickly as possible, and identify alternate fulfillment mechanisms to meet the most urgent needs. These methods combined helped to mitigate many potential delays.

GHSC-PSM Fast Facts

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

- Delivered more than **56.7 million bottles of TLD** to **29 countries**
- Delivered enough antimalarials to treat **345.9 million infections**
- Delivered contraceptives to provide **86.5 million couple-years** of protection
- Procured a total of nearly **$23.7 million in MNCH commodities**
- Delivered a total of **476,930 lab commodity items** valued at over **$7 million** to 16 countries
- Supported **50 countries** with technical assistance

In Q3, GHSC-PSM received $6.11M to implement COVAX technical assistance activities in 12 countries, with a particular focus on the supply chain for the Pfizer vaccine. Information about each country's capacity to manage cold and ultra-cold chain supply is essential as the pace of vaccine deliveries through COVAX increases. In Q3, GHSC-PSM supported USAID in planning for the distribution of COVID-19 vaccines by conducting research into the existing cold chain and ultra cold chain capabilities in the public and private sectors for 92 COVAX-supported countries. The project also conducted an assessment of cold chain and ultra cold chain capabilities in 36 GHSC-PSM–supported countries and issued a request for proposals from third-party logistics (3PL) providers to support vaccine delivery and distribution after COVAX vaccines arrive at destination points. Due to the amount of increased waste that the massive COVID-19 vaccine effort will result in, GHSC-PSM prepared a COVAX Waste Management technical brief to answer frequently asked questions and clarify the type of waste management technical support that the project can offer partner governments in managing these increased levels of waste.

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. The project developed a new guide for using third-party logistics (3PL) private-sector contracts. The guide examines the reasons for these contracts, describes options and their potential benefits and challenges, and provides templates and examples for working with the private sector, including short case studies from Angola, Cambodia, Ghana, Malawi, Mozambique and South Africa. To share resources from over a decade of global supply chain standards, the project developed a Global Standards Toolkit. GHSC-PSM published a four-part series on the way GHSC-PSM has adapted technical assistance during the pandemic, including case studies from several countries. The series examined advanced analytics and how COVID-19 is accelerating trends toward the use of analytical tools, the shift to remote online activities for forecasting and supply planning and training and workforce development and supportive supervision. To promote the Black Swan field guide published in Q2, the project in Q3 created highly visible content to break down the research for a general audience. This content included a short, three-part podcast and the op-ed How to Forge Supply Chain Resilience through Devex. With increased focus on cold chain and ultra cold chain due to the COVID-19 vaccine, the project developed a monthly podcast series examining cold chain in-depth and published the first three episodes by the end of Q3.

MITIGATING RISK OF SUPPLY CHAIN INTERRUPTIONS DUE TO COVID-19

In Q3, the COVID-19 pandemic continued to impact supply chain logistics, including reduced global shipping capabilities, continuous difficulty in confirming the booking and movement of cargo, a global container shortage and decreased availability of airfreight capacity. For airfreight, capacity constraints remained in effect and pricing continued to be volatile, particularly in China. The surge of new COVID-19 infections in India prompted airlines to reduce passenger service into and out of the country. Also, adverse weather throughout Asia led to delays with the onset of the monsoon season.

Global ocean shipping felt repercussions from the Suez Canal block and COVID cases at Yantian port, which led to significant port delays, congestion and therefore vessel scheduling and container delays. Yantian is the third busiest gateway in the world. The reduction in their working capacity to about 30 percent led to a doubling of loading dwell time and a tripling of discharge dwell times. This, in turn, led to changes in vessel schedules to omit this port entirely or amend schedules, which added to capacity constraints. These disruptions forced more cargo to move from ocean to air, adding more pressure on an already constrained airfreight market. For more information, see section B6: Global Supply Chain.

Restrictions continued to prevent project staff from traveling to or joining in-person workshops to support activity implementation. GHSC-PSM worked with activity leads and country offices through virtual workshops or other strategies to ensure program continuity.

Meeting Our Commitments in the Face of COVID-19

Throughout Q3, the project monitored the pandemic's impact on supply, transport, and demand. GHSC-PSM worked with suppliers to assess the availability of existing supplies and production capacity to prioritize country orders.

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 to restock the regional distribution centers (RDCs) earlier than usual.
- Revising forecasts monthly 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.

COVID-19 Response Activities

The U.S. Government (USG) allocated additional funds to GHSC-PSM for COVID-19 response activities. These include:

- Procuring medicines, medical equipment, and supplies for country offices.
- Procuring respiratory and cardiac supplies, intensive care unit (ICU) beds, and patient monitors valued at $9.8 million for Italy.
- Providing ventilator support to 43 countries and North Atlantic Treaty Organization (NATO).
- Procuring oxygen-related equipment and providing technical assistance.

In Q3, GHSC-PSM **delivered 205 low-flow, low-pressure oxygen concentrators** accompanied by their respective spare parts kits **to Guatemala (70 units), Haiti (50 units), Honduras (70 units), and Mozambique (15 units)**. By the end of Q3, **28 high-flow, high-pressure concentrators destined for Ghana were undergoing final assembly** at the manufacturing facility.

In Q3, GHSC-PSM made significant progress in procuring oxygen commodities for seven countries and kicking off clinical and non-clinical technical assistance for oxygen work in eight countries, ranging from local delivery of products to training facility staff to use specific oxygen commodities. This work assists the oxygen sector for COVID-19 response in 12 countries as part of USAID's greater response to the pandemic. This work is vital, as oxygen support has quickly become the primary clinical intervention for patients suffering from COVID-19 (more information is included in Annex A, COVID-19 Response).

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

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 Q3 FY 2021 are below.

Procured over $129 million in drugs, diagnostics, and health commodities in Q3, and over $3.8 billion to date.

Delivered over $275 million in drugs, diagnostics, and health commodities in Q3, and almost $3.4 billion to date.

Achieved **on-time delivery[1] (OTD) of 90 percent (84 percent COVID-impacted) and on-time, in-full delivery (OTIF) of 84 percent (75 percent COVID-impacted)** (See exhibits 1 and 2). The backlog of late orders was 2.5 percent.

OTD and OTIF rates stayed consistently strong for all health areas during Q3 despite COVID-19. OTD was 90 percent (84 percent COVID-impacted[2]) and OTIF was 84 percent (75 percent COVID-impacted) for the quarter, the ninth successive quarter that OTD has been above 85 percent. OTD was 90 percent (84 percent COVID-impacted) for HIV; 90 percent (84 percent COVID-impacted) for malaria; 100 percent (80 percent COVID-impacted) for FP/RH; and 100 percent (100 percent COVID-impacted) for maternal, newborn and child health (MNCH) medicines and commodities, each of which exceeded the contract's 80 percent quarterly target. Note that, as of the end of Q2 FY 2020, the number of COVID-impacted orders started to increase significantly and, as predicted in previous reports, continued to adversely impact on-time delivery performance through Q3 and Q4 FY 2020. Although the high degree of uncertainty and the extreme volatility in global supply chains caused by the pandemic has since reduced, COVID still continued to impact an extremely large number of orders, to a greater or lesser extent, in Q2 and Q3 FY 2021. This impact is expected to continue through Q4. GHSC-PSM continues to conduct root-cause analysis of late deliveries to refine procurement and supply-chain processes and to continuously improve 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 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 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 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.

Exhibit 1. OTD July 2020–June 2021

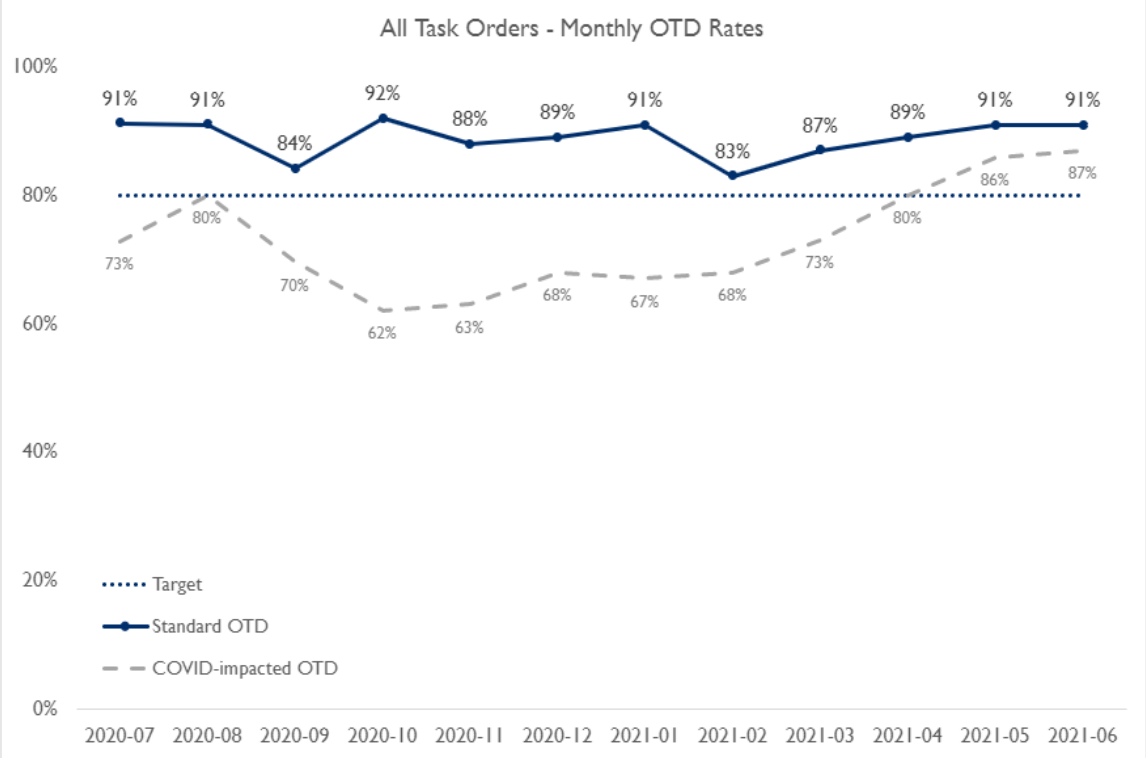
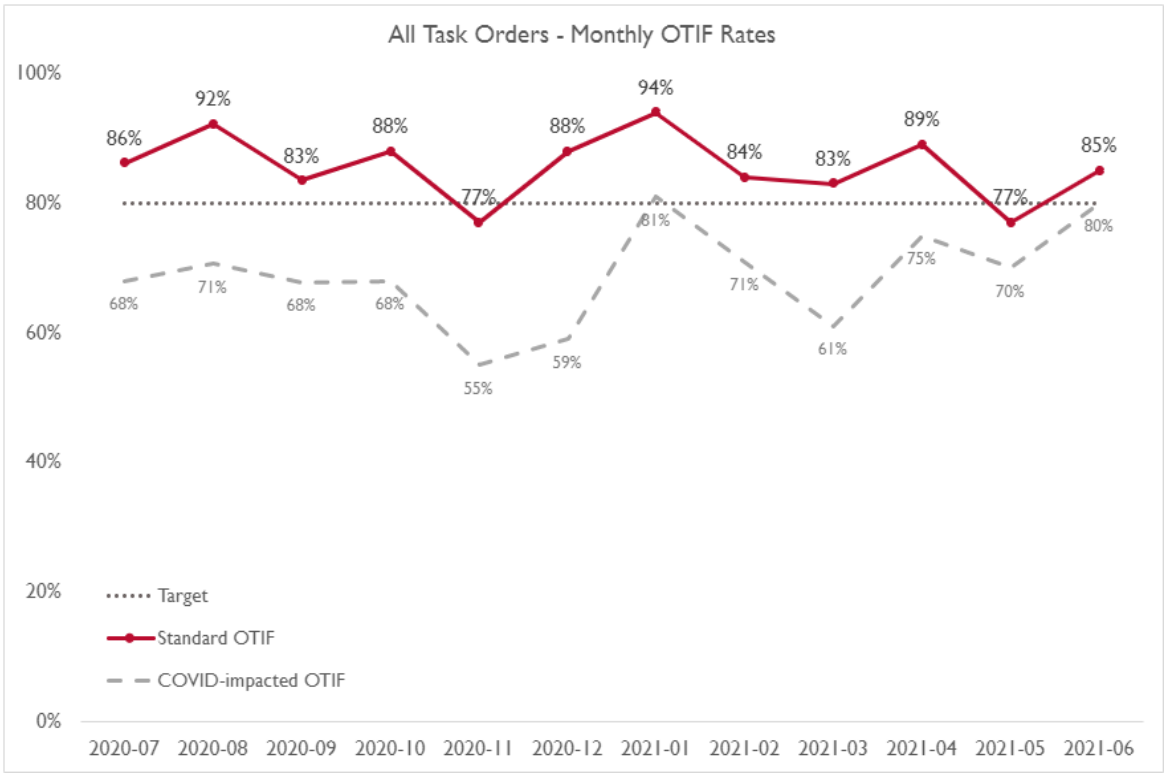


Exhibit 2. OTIF July 2020–June 2021



Significant efforts were made in Q3 to stem the impacts of COVID-19 on freight and logistics as deliveries faced a shipping environment defined by unprecedented COVID-19 shutdowns. The project continues to adapt to unforeseen shifts in the marketplace.

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.

HIV/AIDS

Transitioning to dolutegravir (DTG) 10 mg. In Q3, GHSC-PSM delivered $1.78 million of DTG 10mg, 255,510 bottles, to the Democratic Republic of Congo (DRC), Côte d'Ivoire, Haiti, Namibia, Nigeria, Rwanda, Zambia, and Zimbabwe. These deliveries will ensure that each country can initiate its DTG 10 mg transition in line with its approved plans. For more information, see section B1: HIV/AIDS.

GHSC-PSM has delivered enough antiretroviral therapy to provide over **14.4 million patient-years of HIV treatment to date**, including nearly **1.9 million patient years in Q3**.

This includes **9.7 million patient-years of TLD treatment delivered to date**, including over **1.8 million patient-years in Q3.**

Actualizing multi-month dispensing (MMD). In Q3, 99.7 percent of TLD delivered (by value) was in MMD packaging in 90- or 180-count bottles. GHSC-PSM also started a new round of Country First meetings for HIV/AIDS-supported countries to review supply chain-related support and progress toward PEPFAR initiatives. For more information, see section B1: HIV/AIDS.

New program: ARVs Delivered at Place (DAP). GHSC-PSM delivered two ARV Uganda orders under DAP Incoterm where the seller is responsible for, and assumes all risks for, the delivery of goods, ready for unloading, at the named place of destination. It will offer the added value of the suppliers' taking on increased logistics responsibility and tracking, by using their established in-country logistics partnerships, and more efficiently fulfill orders, ensuring clients have access to the medicines and commodities they need. For more information, see section B1: HIV/AIDS.

Applying critical logistics strategies to mitigate risks. By increasing the level of communication with suppliers, GHSC-PSM was able to implement a no-cost agreement with one Indian-based male condom supplier to pre-manufacture and store 15 million no-logo condoms within the supplier's managed warehouse. The prepositioning reduces the cycle team and lead time for countries that require condoms at short notice, while also reducing cost. The project then strategically moved 5 million pieces from the supplier's warehouse to the Dubai RDC in Q3 to mitigate potential COVID logistics risks, ensuring there are multiple stock locations for better access. As such, this will decrease wait times for countries that need condoms. For more information, see section B1: HIV/AIDS.

Strengthening diagnostics. Since the beginning of the year through May, GHSC-PSM and designated non-project buyers placed orders for 8.61 million viral load and early infant diagnosis tests and generated a little over $22 million in savings under the Global Request for Procurement (RFP). In

addition, the project is on track to meet its 2021 annual global volume commitments to viral load manufacturers. For more information, see section B1: HIV/AIDS.

In Q3, GHSC-PSM procured **$23.5 million in malaria medicines and commodities for 29 countries**.

This includes **treatment for 25.5 million infections.**

In Q3, GHSC-PSM facilitated the distribution of **5.3 million LLINs in eight 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 National Malaria Control Programs (NMCPs) to improve strategic planning, logistics, data analytics, and capacity building while providing global leadership in supply, demand, financing and product development. (See box.)

Stockout Reduction Initiative. In support of PMI's new initiative to optimize its investments and significantly reduce stockout rates at SDPs across all supported countries over the next two to three years, in Q3, the project began stage 2 of the Stockout Reduction Initiative Playbook rollout, with the objective of refining the high-level investment plans that countries developed during stage 1. For more information, see section B2: Malaria.

On-time delivery. GHSC-PSM achieved consistently high OTD performance for malaria drugs and commodities in Q3—90 percent (84 percent COVID-impacted) for the quarter. For more information, see section B2: Malaria.

Sourcing and procurement strategies. The impact of COVID-19 on malaria commodity supply chains continued during Q3, compounded by the blockage of the Suez Canal. The project took proactive measures, liaising with potentially impacted suppliers and 3PLs to identify and mitigate potential disruptions. Also, the project continued preparing for FY 2022 order fulfillment with an emphasis on key product categories such as artemisinin-based combination therapies (ACTs), severe malaria medications, sulphadoxine/pyrimethamine + amodiaquine (SPAQ), long-lasting insecticide-treated nets (LLINs), and malaria rapid diagnostic tests (mRDTs). For more information, see section B2: Malaria.

Quality assurance (QA). GHSC-PSM modified QA/QC protocols in response to COVID-19 and developed a standard QA strategy that builds upon the modifications made to the QA/QC protocols with the goal of the new strategy become the standard operating practice for QA/QC activities for products procured for malaria prevention, diagnosis and treatment.

The project discussed the quality of LLINs and suppliers' quality management system (QMS) with the Global Fund and UNICEF with the goal of improving quality and QMS for LLINs. The project also invited WHO PQ to join the working group. The WHO provided updates on past, current and upcoming quality assurance activities for the LLIN industry. The project and global procurers initiated the process of providing feedback to WHO PQ on the quality assurance documentation procurers require from LLIN suppliers, and WHO will continue to provide procurers with guidance on quality control protocols to ensure quality-assured products are provided to clients. For more information, see section B2: Malaria.

Prioritization of orders and redirection of orders. In Q3, to address country demand and market constraints, GHSC-PSM, working closely with USAID, prioritized orders based on need and conducted redirection of commodity order to improve stock status. The project redirected an order of mRDTs intended for Kenya to Burundi. GHSC-PSM also transferred the stock of artesunate injectable from Kenya to Uganda to fulfill an urgent need. For additional details, see section B2: Malaria.

Distribution of LLINs. In Q3, 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 distribution of over 5.3 million LLINs to protect more than 10.6 million people in eight countries—Burundi, Ethiopia, Ghana, Liberia, Sierra Leone, Uganda, Zambia, and Zimbabwe. For more information, see section B2: Malaria

Family Planning and Reproductive Health

In Q3, GHSC-PSM worked with activity leads and country offices through virtual workshops or other strategies to ensure program continuity despite COVID-19 restrictions. For more information, see section B3: Family Planning and Reproductive Health.

GHSC-PSM has delivered enough contraceptives that, when combined with proper counseling and correct use, are estimated to **provide 86.5 million couple-years of protection to date.**

This includes **4.8 million couple-years of protection** in Q3.

On-time delivery. GHSC-PSM delivered 100 percent (80 percent COVID-impacted) of FP/RH commodities on time in Q3. 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. GHSC-PSM:

- Launched the first in a two-part video series that explains the newly developed Active Site Business Rule for measuring stockouts and how to apply it.
- Serves as a key contributor to the strategic development and scale-up of the GFPVAN platform and processes.
- Collaborates with the ForoLAC group of the RHSC to report 2019 Contraceptive Security Indicators (CSI) data from seven additional countries: Argentina, Bolivia, Chile, Ecuador, Mexico, Nicaragua, and Paraguay.

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

Contraceptive security tracking. GHSC-PSM launched the 2021 round of the Contraceptive Security Indicators survey in Q3 in over 50 countries. The survey includes a new section about COVID-19's impact on several aspects of contraceptive security and the measures countries are taking to alleviate this. GHSC-PSM will collect and validate data in Q4.

Maternal, Newborn and Child Health

GHSC-PSM works to prevent child and maternal deaths by increasing access to quality-assured MNCH medicines and commodities, and by providing global technical leadership on such commodities.

In Q3, the project **launched a Drug Revolving Fund in Bauchi State, Nigeria,** which will allow for sustainable procurement and availability of essential MNCH commodities. The initial medicines handover of **nearly $900,000 of MNCH commodities**—donated by the USG—will help save the lives of thousands of women and children.

Procuring and delivering commodities. Since the start of the project, GHSC-PSM has delivered over $14 million in MNCH drugs and commodities. In Q3 the project initiated new orders of essential medicines and consumables for the Drug Revolving Funds in Nigeria and began sourcing for amoxicillin, gentamicin, oral rehydration salts, and chlorhexidine for use in Liberia, Mozambique, and Zambia. For more information, see section B4: Maternal, Newborn, and Child Health.

Providing international MNCH supply chain leadership and guidance. After working with partners to update existing RH and MNCH forecasting guidance, in Q3 the project completed validation of the guidance in Ethiopia, Ghana, Nepal, Nigeria, and Pakistan. The project also conducted a desk review of supply chain barriers to availability of antihypertensive medicines in Ghana. At the end of Q3, the results were under review by the relevant stakeholders to determine next steps. For more information, see section B4: Maternal, Newborn, and Child Health.

GHSC-PSM continued to collaborate with the Maternal Health Supplies Caucus—including through 2021–2025 work planning sessions for the group in Q3—and to provide COVID-19–related support and guidance to GHSC-PSM countries. This included publishing an update on *GHSC-PSM contract prices and lead times of MNCH commodities* and hosting a webinar and country teams discussion on the project-developed resource "Ensuring Maternal, Newborn and Child Health Commodity Availability During COVID-19" in Q3. GHSC-PSM also participated in a meeting of partners to provide feedback on a Newborn Essential Solutions and Technologies (NEST 360) and UNICEF toolkit for implementing small and sick newborn care services. For more information, see section B4: Maternal, Newborn, and Child Health.

Supporting data-informed decision-making for MNCH commodities. In Q3, the project submitted EUV reports for Burkina Faso, Ethiopia, Ghana, Mali, and Nigeria. The project also gathered country teams' feedback on the recently developed catalog of MNCH data tools. 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 in Ethiopia, Ghana, Guinea, and Nigeria in Q3. GHSC-PSM helped mitigate MNCH supply chain risks in Ethiopia due to COVID-19 through intensive data analyses to inform mobilization of funding and movement of commodities further down the supply chain, among other strategies, and ultimately reduced MNCH stockouts to rates lower than even before the pandemic began. In Ghana and Guinea, the project kicked off COVAX technical assistance efforts in Q3 with funds funneled through the MCH task order. Planned data system enhancements and related training to support COVID-19 vaccine distribution will be beneficial to supply chain decision-making across the public health supply chain in these countries. For more information, see section B4: Maternal, Newborn, and Child Health.

STRENGTHENING HEALTH INSTITUTIONS

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.

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

- GHSC-PSM published "Contracting for Transportation of Public Health Commodities to the Private Sector," a guide for private-sector contracting. The guide examines the reasons for doing so, describes different options, and explains the potential benefits and challenges of each option. Examples from Angola, Cambodia, Ghana, Malawi, Mozambique, and South Africa illustrate key points. Annexes include a sample scope of work, deliverables schedule, requests for proposals, key performance indicators and other tools.

- GHSC-PSM conducted rollout of the Quantification Analytics Tool (QAT), including remote trainings to Cohort 2 Francophone countries (Burkina Faso, Cameroon, Haiti, and Mali) and to Cohort 3 (Angola, Eswatini, Ghana, Malawi, and Sierra Leone). By the end of Q3, 38 supply plans had been fully transitioned to QAT and 22 were in process, out of more than 90 that will eventually transition.

- **In Angola,** GHSC-PSM supported curriculum development, training, and graduation of 28 students on the first edition of a postgraduate specialization course in integrated management of the health supply chain. These program graduates were the first group of professionals in the Angola public health sector formally trained and certified in technical supply chain skills and best practices.

- **In Eswatini,** GHSC-PSM supported the Ministry of Health in developing an electronic version of the Standard Treatment Guidelines and Essential Medicines List. This new app is convenient for health care workers and includes extra functions such as a Stockout Reporting Tool, a Pharmacovigilance Reporting Tool and an Education section. It will also receive and notify users of urgent announcements, such as product recalls or vaccination campaigns.

- **In Ghana,** the project supported the Ministry of Health, in partnership with GS1 Global and GS1 Ghana, to host a virtual Ghana National Pharmaceutical Traceability Vision and Strategy workshop with over 60 participants. GHSC-PSM also helped update the Ghana Product Master Data File with global trade item numbers (GTINs) for 37 commodities that GHSC-PSM has procured.

- **In Guinea,** at a workshop organized by GHSC-PSM and the Ministry of Health's National Directorate of Pharmacy and Medicines, 27 representatives of various government agencies, partner organizations, USAID, and WHO finalized the development of 39 policies and regulations for the application of 2018 pharmaceutical law, including a draft decree for creating the National Agency for Pharmaceutical Regulation (ANRP).

- **In Malawi,** GHSC-PSM supported the MOH in scaling up OpenLMIS to 100 additional facilities and piloting the OpenLMIS Stock Management Module in eight districts as part of ongoing efforts to strengthen MOH capacity in OpenLMIS expansion, its management, and use.

- **In Rwanda,** GHSC-PSM began implementing the People that Deliver (PtD) Supply Chain Management Professionalization Framework with the Ministry of Health serving as a sponsor, the Regional Centre of Excellence for Vaccines Immunization and Health Supply Chain Management serving as in-country representative, and GHSC-PSM serving as coach. As an early adopter of the Framework, Rwanda will serve as a model for others.

- **In Zambia,** GHSC-PSM delivered to the Zambia Medicines and Medical Supplies Agency (ZAMMSA) an integrated volumetrics system that provides complete and accurate dimensional and weight data for commodities flowing through ZAMMSA.

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

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:

- The U.S. President's Emergency Plan for AIDS Relief (PEPFAR) to help reach its HIV/AIDS global 95-95-95 testing, treatment and viral-load suppression targets.
- The U.S. President's Malaria Initiative (PMI) to reduce malaria deaths and substantially decrease malaria morbidity toward the long-term goal of elimination.
- USAID's Family Planning and Reproductive Health (FP/RH) program to ensure that key reproductive-health commodities are available for safe and reliable voluntary family-planning.
- USAID's maternal and child health (MCH[3]) 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. The project procured commodities or provided TA to 62 countries over the life of the project (see Exhibit 3 below).

A2. ABOUT THIS REPORT

We are pleased to present our performance report for Q3 FY 2021 (April 1, 2021 through June 30, 2021). 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.
- Annex B provides **performance indicators** for April 1, 2021 through June 30, 2021 (quarterly and semi-annual indicators).

Given the size and complexity of GHSC-PSM, this report summarizes our primary efforts and achievements in Q3 FY 2021 and reflects only a fraction of the project's efforts each day to help people around the world live healthier lives.

[3] 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.

Exhibit 3. Countries for which GHSC-PSM procured commodities (proc.) or provided technical assistance (TA) over the life of the project (does not include ventilator procurements).

	Proc.	TA		Proc.	TA
AFRICA:			**ASIA:**		
Republic of Angola	•	•	Islamic Republic of Afghanistan	•	
Republic of Benin	•		People's Democratic Republic of Bangladesh	•	
Republic of Botswana	•	•	Kingdom of Cambodia	•	•
Burkina Faso	•	•	Republic of Indonesia		•
Republic of Burundi	•	•	Republic of Kazakhstan	•	•
Republic of Cameroon	•	•	Kyrgyz Republic	•	•
Republic of Chad		•	Lao People's Democratic Republic	•	•
Republic of Côte d'Ivoire	•		Burma	•	•
Democratic Republic of the Congo (DRC)	•	•	Federal Democratic Republic of Nepal	•	•
Federal Democratic Republic of Ethiopia	•	•	Islamic Republic of Pakistan	•	•
Republic of Ghana	•	•	Independent State of Papua New Guinea	•	
Republic of Guinea	•	•	Republic of Tajikistan	•	•
Republic of Kenya	•	•	Kingdom of Thailand	•	•
Kingdom of Lesotho	•	•	Socialist Republic of Viet Nam	•	•
Republic of Liberia	•	•	**LATIN AMERICA & CARIBBEAN:**		
Republic of Madagascar	•	•	Barbados		•
Republic of Malawi	•	•	Republic of Colombia	•	
Republic of Mali	•	•	Dominican Republic	•	•
Republic of Mozambique	•	•	Republic of Ecuador	•	
Republic of Namibia	•	•	Republic of El Salvador	•	•
Republic of the Niger	•	•	Republic of Guatemala	•	•
Federal Republic of Nigeria	•	•	Republic of Haiti	•	•
Republic of Rwanda	•	•	Republic of Honduras	•	•
Republic of Senegal	•		Jamaica	•	•
Republic of Sierra Leone	•	•	Republic of Panama	•	•
Republic of South Africa	•		Republic of Paraguay	•	
Republic of South Sudan	•	•	Republic of Peru	•	
Kingdom of Swaziland (Eswatini)	•	•	Republic of Suriname	•	•
United Republic of Tanzania	•	•	**OTHER:**		
Republic of Togo	•		Ukraine	•	
Republic of Uganda	•	•	Republic of Yemen	•	
Republic of Zambia	•	•			
Republic of Zimbabwe	•	•			

PROGRESS BY HEALTH AREA

This section summarizes GHSC-PSM's support over the last quarter 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 over **14.4 million patient-years of HIV treatment over the life of the project**, including nearly **1.9 million patient-years of treatment in Q3**.

To date, GHSC-PSM has delivered almost **56.8 million bottles of tenofovir/lamivudine/dolutegravir (TLD)** to 29 countries, which would provide nearly **9.7 million patient years of treatment**.

Multi-month dispensing packages of TLD first-line treatment accounted for over **99 percent of all quantities delivered** in Q3.

A total of 56 countries procured HIV/AIDS medicines and commodities with HIV/AIDS funding.

Thanks to multi-month dispensing (MMD), patients likely saved **nearly 14.8 million trips** to the pharmacy in Q3 and **almost 59.2 million over the life of the project, saving patients time and money**.

GHSC-PSM brought **improved product visibility** into HIV commodities in **700 central and regional warehouses in 22 PEPFAR countries and 5,195 health facilities**[4] in **eight PEPFAR countries**. In Q3 16 HIV commodity stockout risks in 8 countries were identified and quickly resolved.

As of Q3, GHSC-PSM delivered **30.5 million viral load tests to 21 countries** to support testing scale-up.

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 commodities used to support viral load testing to monitor treatment efficacy. GHSC-PSM is also implementing data visibility initiatives that support appropriate procurement and distribution of ARVs and diagnostics to link patients with the health commodities they need.

[4] As of July 2021, GHSC-PSM received data only for the month of April from Angola, Botswana, Haiti, Lesotho, Malawi, Mozambique, Namibia, and Zambia. Nigeria and Zimbabwe report data bimonthly and quarterly, respectively.

COVID-19 Impacts

In Q3, a second COVID wave hit India, greatly affecting the GHSC-PSM India supply base. May 2021 represented the peak of the wave. City and state-wide lockdowns were enacted throughout the quarter. As the pandemic count soared in different parts of India, production capacity at various supplier manufacturing sites across the country were impacted as states enacted lockdowns. However, unlike the first wave, suppliers had adapted their supply chain operations and increased their safety stock for various raw materials. As a result, GHSC-PSM saw little to no delays to committed goods available dates. The project continued to maintain frequent communications with suppliers to determine the supply chain impact and develop mitigation plans, as appropriate.

The effects of COVID-19 on logistics were more prevalent. These were felt in the form of container shortages, higher (than normal) freight costs, and reduced freight capacity. The port of Yantian was closed due to congestion that caused a ripple effect on global logistics. The high number of COVID-19 cases also threatened border closures in India and South Africa and reduced freight activity in countries like Uganda.

OTD AND OTIF

Over the life of the project, GHSC-PSM has delivered nearly $2.3 billion in HIV commodities to countries. Timeliness of GHSC-PSM HIV deliveries remained consistently strong for standard OTD and OTIF over Q3, as shown in Exhibits 4 and 5. The OTD rate for Q3 was 90 percent (84 percent for COVID-impacted) and the OTIF rate was 82 percent (72 percent for COVID-impacted). Although the high degree of uncertainty and the extreme volatility in global supply chains caused by the pandemic has since been reduced from the FY 2020 highs, COVID continued to impact a large number of orders in Q3 FY 2021. The project expects this impact will continue through Q4.

Exhibit 4. HIV Commodities, OTD

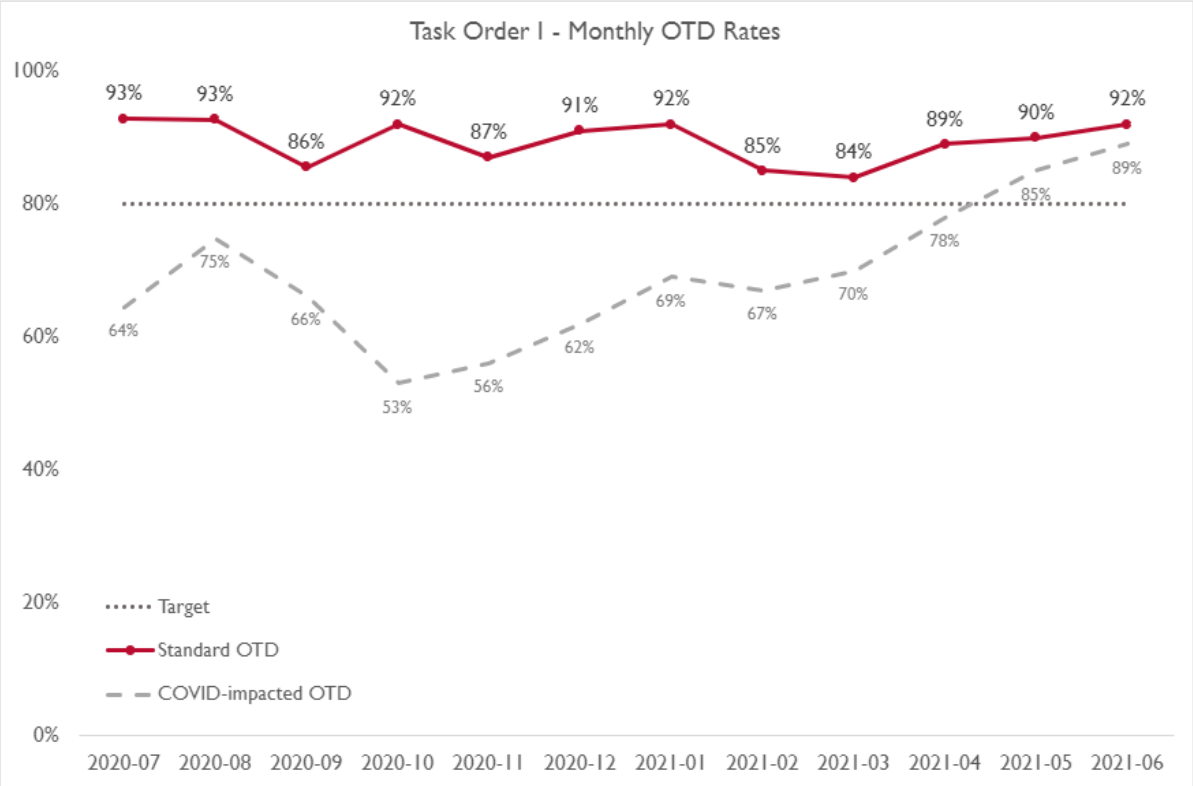
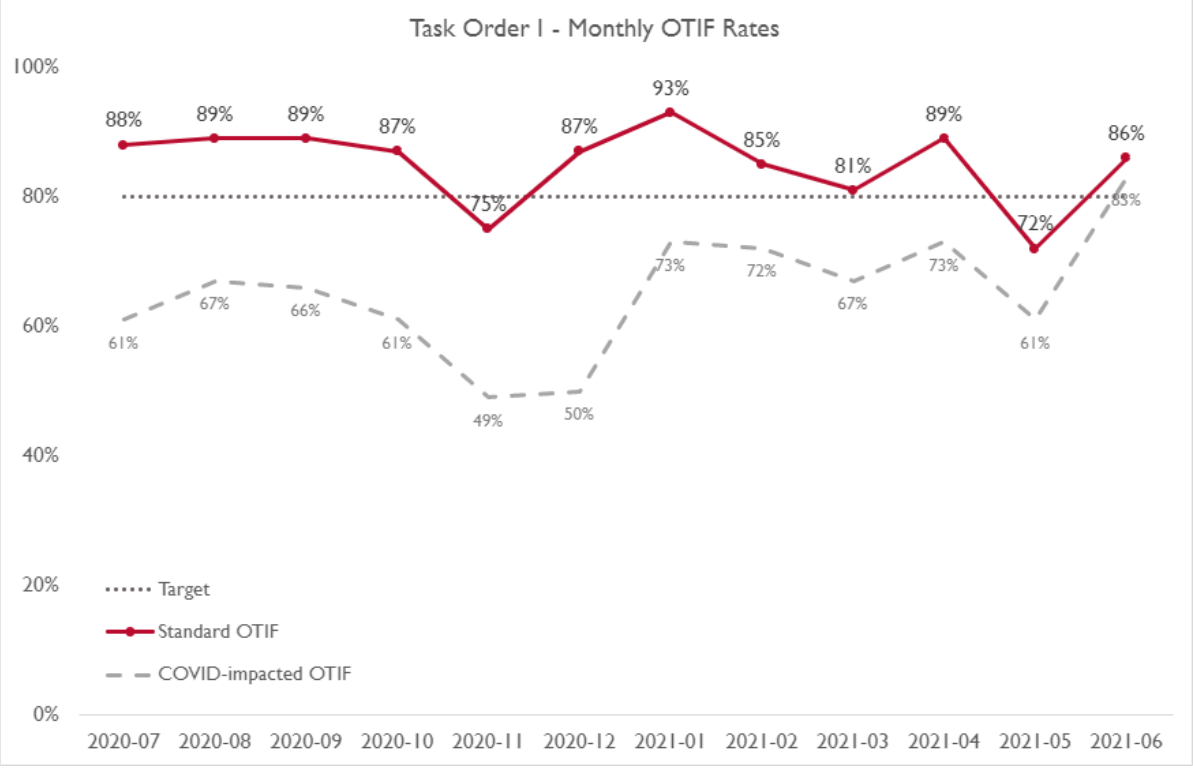


Exhibit 5. HIV Commodities, OTIF



SUPPORTING PEPFAR'S HIV PREVENTION AGENDA

Pre-exposure prophylaxis (PrEP)

Daily oral PrEP using the antiretroviral medicines tenofovir/emtricitabine (TE) or tenofovir/lamivudine (TL) dramatically reduces the risk of HIV infection in people who take it as directed. In Q3, GHSC-PSM delivered $4.89 million worth—more than 1.19 million PrEP bottles—to Botswana, Burundi, Cameroon, Congo DRC, Côte d'Ivoire, Guatemala, Haiti, Lesotho, Mozambique, Nigeria, Philippines, Rwanda, Tanzania, Uganda, Ukraine, Zambia, and Zimbabwe.

Commodities Procured for HIV/AIDS Programs

- ARVs
- Diagnostics
- Essential medicines
- Injectable anesthetics
- Laboratory reagents
- Male and female condoms
- Personal lubricants
- VMMC kits

The project continues to conduct a monthly analysis of PEPFAR-funded PrEP commodity deliveries and the impact of in-country scale-up for the PrEP program. The analysis generates qualitative and quantitative data from 24 countries to monitor stock levels and the scale up. GHSC-PSM's regular communication with countries assisted them in adapting to the dynamics of their PrEP scale up programs by advancing or delaying shipments when necessary. This quarter, the GHSC-PSM team in Eswatini identified a possible stockout of TL. By liaising with the government and in-country stakeholders, the project helped secure a government shipment and averted the stockout.

Condoms

In Q3, GHSC-PSM increased outreach to suppliers as COVID impacts were felt in Indian, Malaysian, and Thai manufacturing. One Indian-based male condom supplier successfully implemented a no-cost agreement to pre-manufacture and store 15 million no logo condoms within its own managed warehouse. GHSC-PSM made the strategic decision to move 5 million pieces of those no-logo condoms from its warehouse to the Dubai regional distribution center in Q3 to mitigate potential COVID logistics risks. This proved critical as India did experience periods of reduced manufacturing capacity and lockdowns, and fulfillments could be made within 16 weeks from Dubai instead of 28 weeks from southeast Asia, allowing for diversification of male condom stock across multiple regions. GHSC-PSM has also worked closely with suppliers to closely track indicators for raw material and packaging costs on latex products as the pandemic continues to put pressure on the supply base. The project's efforts will help reduce wait times for countries and more importantly patients that need condoms.

Voluntary medical male circumcision (VMMC) kits

In Q3, GHSC-PSM issued an RFP for the Reusable Instruments (Non-Sterile) for Forceps Guided Procedure for Mozambique as requested by the Ministry of Health and approved by USAID, and completed sourcing evaluation, technical and quality review. The contract(s) modifications and an award will be made in Q4.

Essential medicines

USAID requested GHSC-PSM, through a Technical Directive Memorandum (TDM), to procure essential medicines for VMMC programming in Malawi, ensuring the country is stocked. To do so, the project onboarded a new, local supplier in Malawi and signed a contract. Delivery is expected in Q4. Lastly, GHSC-PSM updated strategic contracts with wholesalers for essential medicines with fixed prices for approved products.

Tuberculosis Preventive Treatment (TPT)
Tuberculosis (TB) is the leading cause of death among PLHIV, causing more than one-third of all AIDS-related deaths. The World Health Organization (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, irrespective 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 300mg/300mg fixed-dose combination (FDC) tablets to four countries (Ethiopia, Namibia, Zambia, and Zimbabwe) in Q3. At the end of Q3, the sole source supplier of this commodity confirmed with the ARV/3HP Procurement Working Group (APWG) that it has been unable to increase overall production capacity as originally planned. This affected current and planned FDC orders for all donors including PEPFAR. GHSC-PSM is working with the APWG and USAID to ensure that PEPFAR countries can receive the best possible goods availability dates using available reallocated quantities. Through Q4, GHSC-PSM will continue to work with USAID and the APWG to ensure PEPFAR-funded countries, which are ready to transition to 3HP, receive allocations in line with product availability.

Isoniazid Preventive Therapy (IPT)
Although most GHSC-PSM-supported TPT countries continue to plan the transition to 3HP in FY 2021 and FY 2022, GHSC-PSM continues to support countries (Côte d'Ivoire, DRC, Eswatini, Kenya, Nigeria, Rwanda, Tanzania, Zimbabwe) implementing IPT with the procurement of isoniazid.

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 procurement and international freight. The project promotes better management of RTK orders and deliveries through regional- and central-level stock data collection through the Warehouse AIDS Data Visibility, Evaluation and Reporting, or ADVISER, initiative. GHSC-PSM shares these data monthly with GHSC-RTK to guide RTK procurement planning and triangulate data, reviewing HIV testing targets against RTK stock in countries with PEPFAR-supported HIV testing programs.

SUPPORTING THE SECOND 95: TREATMENT

ARVs Delivered at Place (DAP)
In Q3, GHSC-PSM delivered two Uganda ARV orders under DAP Incoterms. The orders were the first under the DAP program pilot. This change in Incoterms requires the supplier to take on increased logistics responsibility by using its established in-country logistics partnerships, thereby reducing risk to the program and reducing dependency on the project's logistical capability. Participating suppliers started sharing external-facing transportation portals, which increased order visibility from the supplier's logistics network to final in-country delivery. Additional DAP orders will be delivered to Tanzania, Uganda, and Zambia in Q4.

What is DAP?

Under the Delivered At Place (DAP) Incoterm rules, the seller is responsible for, and assumes all risks for, the delivery of the goods, ready for unloading, at the named place of destination.

Supplying TLD

To date, the project has delivered **56.8 million bottles of TLD** to **29 countries**.

This is enough to provide more than **9.7 million patient-years of TLD treatment**.

TLD and multi-month dispensing

To help achieve HIV treatment goals, GHSC-PSM continued to support PEPFAR countries' transition to TLD, the preferred first-line ARV.

In Q3, 99.7 percent of TLD delivered (by value) was in multi-month dispensing (MMD) packaging in 90- or 180-count bottles. The project delivered these commodities to Angola, Botswana, Burkina Faso, Burundi, Cameroon, Congo DRC, Côte d'Ivoire, Ecuador, El Salvador, Eswatini, Ethiopia, Haiti, Honduras, Kenya, Mozambique, Namibia, Nigeria, Panama, Papua New Guinea, Peru, Rwanda, South Africa, Tanzania, Togo, Uganda, Ukraine, Vietnam, Zambia, and Zimbabwe.

In Q3, GHSC-PSM delivered **7.2 million bottles of TLD 90 and 180** to **20 countries**.

To ensure close coordination with key stakeholders on TLD uptake, the project regularly shares data and facilitates technical coordination meetings. In Q3, GHSC-PSM started a new round of Country Progress Towards Key PEPFAR Initiatives—A Supply Chain Perspective Meetings (i.e., Country First meetings) for HIV/AIDS Task Order-supported countries. These meetings continued to include reviews of supply chain–related support and progress toward key PEPFAR initiatives, including adult and pediatric DTG transitions, MMD, decentralized drug distribution (DDD), PrEP, and HIV laboratory services support.

DTG 10 mg

A dispersible tablet, DTG 10 mg – a more effective pediatric ARV – will help further reduce the pill burden for children living with HIV while maintaining dosage flexibility. GHSC-PSM placed orders for 12 countries and will be monitoring drawdown of legacy products to support the transition.

Pediatric ARVs

Following the U.S. FDA tentative approval of the new dolutegravir (DTG) 10 mg in November 2020, GHSC-PSM provided a tool and technical support to simulate the start dates and pace of the transition for PEPFAR-supported countries. The first orders for 352,000 bottles of DTG 10 mg 90-tablet bottles were placed in Q2 and in Q3, GHSC-PSM delivered $1.78 million of DTG 10mg, consisting of 255,510 bottles, to Congo DRC, Côte d'Ivoire, Haiti, Namibia, Nigeria, Rwanda, Zambia, and Zimbabwe. These deliveries will ensure that each country can initiate their DTG 10 mg transition in line with their approved plans. Also, during Q3, a second DTG 10 supplier made its products available, providing another viable source for this lifesaving pediatric ARV.

Legacy ARV drawdown

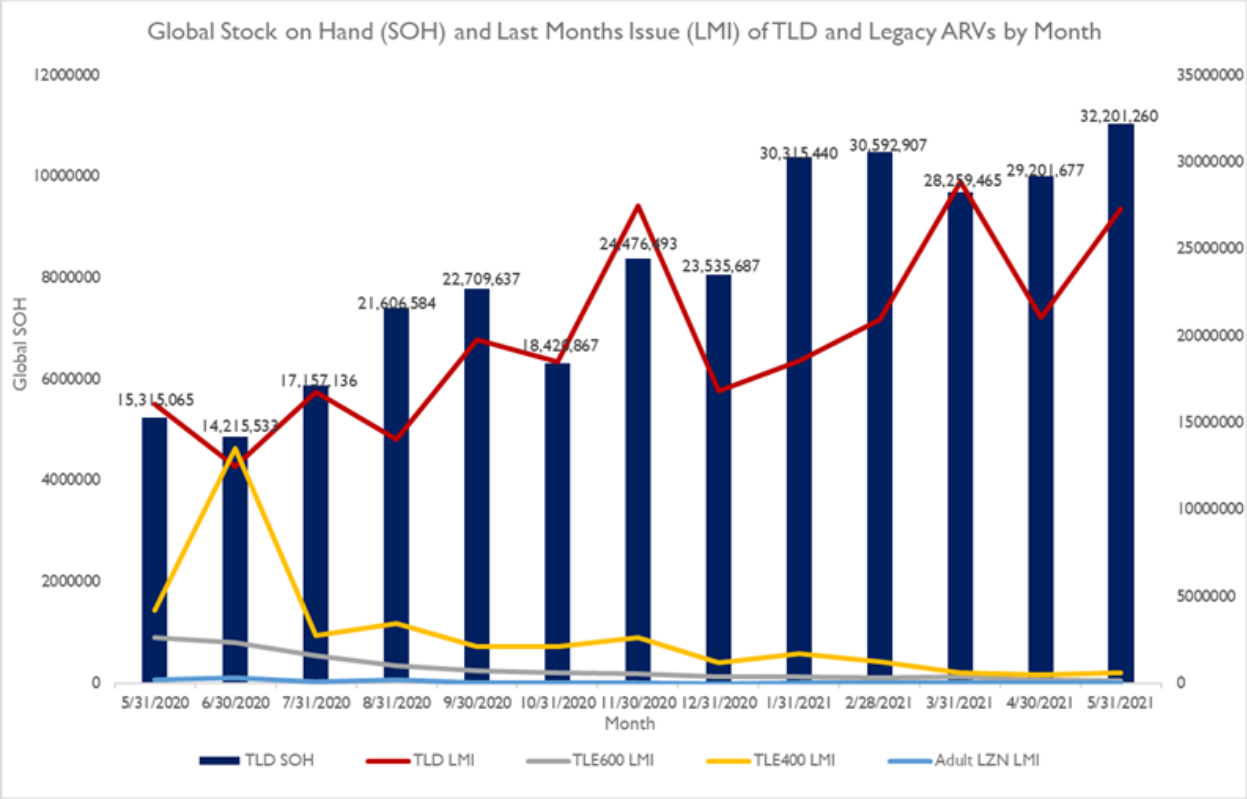
To support efficient transition to more effective treatment regimens (TLD), and minimize remnants of less-effective, older first-line ARV regimens (legacy ARVs), GHSC-PSM collects, reviews and compiles monthly ARV inventory data from 31 central and 73 regional warehouses in 22 countries through First-Line ARV Reporting and Evaluation (FLARE) reports.

Per PEPFAR guidance, GHSC-PSM halted procurement of legacy ARVs containing nevirapine, such as lamivudine/zidovudine/nevirapine (LZN), and actively supported the transition of patients to new regimens. GHSC-PSM aligned ARVs in the project's product catalog with the PEPFAR formulary to promote optimal ARV regimen ordering. The project submits weekly reports to USAID outlining any

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.

According to the data collected in the FLARE reports, global issues of LZN, TLE600, and TLE 400 decreased by 96 percent, 95 percent, and 85 percent, respectively, since May 2020. (See Exhibit 6.)

Exhibit 6. Drawdown of stock-on-hand and reduced consumption of LZN from May 2020 to May 2021[5]



The analysis above shows successful drawdown of efavirenz- and nevirapine-based regimens and an overall increase in TLD stock-on-hand each month from May 2020 to May 2021.

SUPPORTING THE THIRD 95: VIRAL LOAD TESTING

Implementing viral load awards

Since January 2021 and through the end of May, GHSC-PSM and designated non-project buyers placed orders for 8.61 million viral load (VL) and early infant diagnosis (EID) tests for deliveries in 2021 and have generated a little over $22 million in savings for the first wave of countries[6] under the global request for procurement (RFP). The total spent on these orders amounts to approximately $90.2 million.

[5] Countries included in this analysis were Burundi, Cameroon, DRC, Eswatini, Ethiopia, Ghana, Haiti, Lesotho, Mali, Mozambique, Namibia, Nigeria, Rwanda, Uganda, Vietnam (until 09/30/2020), and Zimbabwe.

[6] Kenya, Mozambique, Nigeria, Tanzania, Uganda, and Zambia.

Also, GHSC-PSM is on track to meet its 2021 annual global volume commitments to the VL manufacturers. Minimum annual volume commitments (VC) to the VL manufacturers is a cornerstone and an innovative concept of the global RFP. USAID and GHSC-PSM steadily improved diagnostics supply chain transparency and analytics through the Data and Connectivity Initiative within the Global VL EID Project.

To ensure data integrity and interoperability and improve management of the global service level agreements (SLAs) with the VL manufacturers while supporting strategic management of PEPFAR's global instrument fleet, USAID and GHSC-PSM partnered with manufacturers to develop a global multi-platform dashboard in FY 2020. In Q3, the project digitized the first wave of countries' performance management through the first phase of the Global VL Dashboard – Key Performance Indicator (KPI) Reporting Module. For PEPFAR, this now means remote and secure access to actionable insights are accessible within 10 KPIs by country, supplier, and, when applicable, by instrument to address the most important needs in maintenance and repair, instrument activities, and supply chain security. By Q3, GHSC-PSM activated the remote monitoring of instrument activities for more than 25 participating laboratories; 150 global users now have access to near real-time instrument data, most notably throughput and error rates. GHSC-PSM is on track to automate related data feeds through secure, anonymous, operational data integration with manufacturer servers. In Q3, GHSC-PSM also continued discussions and planning with the VL manufacturers for the implementation of vendor-managed inventory (VMI) pilots in Haiti and Mozambique.

Procurement of viral load and laboratory supplies
In Q3, GHSC-PSM continued to face a pandemic-related challenge. Lab consumables such as pipettes and pipette tips, but also certain consumables used for VL and COVID-19 tests, remain in short supply globally. Suppliers are rationing products as they ramp up their manufacturing capacity for COVID-19 and HIV RTKs. GHSC-PSM mitigates risks by reviewing product allocations with large suppliers.

Data-driven Lab optimization using Opti-Dx
Through historical procurement data, forecast data, instrument coverage, utilization rates, and GPS data, the Opti-Dx web-based tool guides appropriate laboratory instrument selection. The lab optimization pilot using Opti-Dx continued in Uganda and Burundi in Q3.

Laboratory commodity quantification
GHSC-PSM, in collaboration with the developer, piloted ForLabPlus software in three countries: Angola, Botswana, and Lesotho. ForLabPlus is a multi-disease web-based tool used to forecast laboratory reagents and commodities.

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 inventory data each month for more than 700 HIV medicines and commodities at the central and regional warehouse levels in 22 PEPFAR countries to identify stock imbalances. Data generated include the status of first-line ARV drawdown, the transition to TLD, and HIV commodity stockout risk. These reports help mitigate imbalances and avoid rationing and waste, where possible, by raising awareness, identifying opportunities to shift GHSC-PSM shipments, and supporting redistribution within a country.

GHSC-PSM continued to host monthly Proactive Stock Risk Management (ProStock) meetings in Q3. Building on the project's HIV/AIDS data collection and analysis, this meeting is a forum for GHSC-PSM and USAID to present and discuss actual and potential gaps in HIV commodity access and implement action plans to address them. Further analysis by GHSC-PSM showed stockout and expiry risk mitigated for ARVs, PrEP, and RTKs. As such, the project's ongoing risk mitigation efforts prevented stockouts of TLD in Burkina Faso, and GHSC-PSM supported the scale-up of PrEP and avoided stockouts of TE in Haiti and Mali by expediting shipments in Q3.

The project collects monthly national service delivery point (SDP) (i.e., health facility or site) LMIS data and tracks stock levels across SDPs from 12 countries.

In Q3, GHSC-PSM continued to align product names between the Procurement Planning and Monitoring-HIV Report (PPMR) and Supply Chain-Facility-level AIDS Commodity Tracking (SC-FACT) datasets. Product alignment rose from 40 percent in March 2021 to 83 percent as of June 2021, for an overall percentage increase of 82 percent. As product names are standardized across datasets this will also improve data reliability.

The project additionally developed a dashboard that triangulates supply plan data with warehouse and SDP data. It allows users to track several domains of data quality for warehouse and SDP data, such as timeliness, completeness, accuracy, and reliability. By using several data sources, the overall goal is to improve supply chain performance through the reporting and analysis of key performance indicators, ultimately leading to improved public health outcomes.

COUNTRY SUPPORT

The HIV/AIDS Task Order funds supply chain systems strengthening in 36 countries.

Training laboratory technicians in Haiti on how to use the new assay. Photo credit: GHSC-PSM/Rodny Darenard.

In **Haiti,** GHSC-PSM manages warehousing and distribution to health facilities, many of which are in remote areas of the country. In the North department, health sites provide regular VL/EID testing to all registered HIV/AIDS patients. Yet, health centers in the northern region have long lacked machines for testing, and as such, samples were sent to the national laboratory located in the West department, which took two weeks to process results, causing delays in treatment. In Q3, GHSC-PSM supported the installation of an HIV assay that can run multiple tests per day with minimal staff and contamination in the North regional laboratory. The project then trained five laboratory technicians on the assay to better respond to patient care and treatment needs by reducing test result wait times.

GHSC-PSM regularly works with the DKI Jakarta Provincial Health Office (PHO) in **Indonesia** on strategic supply chain analysis for RTK HIV testing. In Q3, the project worked closely with the PHO to resolve issues around TGK HIV test delays and used supply chain data to complete a situational analysis of RTK availability, forecast HIV testing demand, and strategize around RTK commodity management to ensure testing availability. Following a presentation made by GHSC-PSM on scenarios for RTK stock

availability, reallocation plans, and demand analysis, a procurement plan was set forth. The commodities will arrive and be distributed at SDPs early in Q4, preventing stock outs of HIV RTKs.

B2. MALARIA

In Q3 FY 2021, delivered enough ACTs to treat nearly **25.5 million infections.**

In Q3 FY 2021, **29 countries procured malaria medicines and commodities,** and **22 countries received health supply chain systems strengthening** with malaria funding under the contract.

Delivered enough LLINs to provide **protection from malaria for over 23.5 million people in Q3 FY 2021.**

Investigated upstream markets of key starting materials for artesunate, lumefantrine, and sulfadoxine to evaluate **malaria commodity market health** and mitigate risks for commodity security and quality.

The U.S. President's Malaria Initiative (PMI) 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 global supply, demand, financing, and the 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 (MOPs). 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.

WORKING THROUGH COVID-19

COVID-19 is still affecting malaria commodity supply chains. GHSC-PSM works to adapt to changes in global manufacturing and logistical systems that malaria supply chains depend on. As the virus continues to peak and recede around the world, the project examines opportunities to manage risk throughout the supply chain, strengthen its market position, refine stock allocations, explore new sourcing and rapid fulfillment strategies, promote sustainable pricing, and prequalify additional suppliers.

In Q3, GHSC-PSM monitored the impact of COVID-19 outbreaks in India, which caused new lockdowns that could affect malaria commodity suppliers. The project took proactive measures, liaising with potentially impacted suppliers to identify and manage delays, obtain products as quickly as possible, and identify alternate fulfillment mechanisms to meet the most urgent needs.

Malaria commodities also face a constrained shipping environment due to the impact of COVID-19 on global logistics, compounded by the effect of the Suez Canal blockage in Q3. The project worked closely with the 3PL providers to find solutions to ensure a continuous, reliable supply, including delaying a planned rate refresh in favor of a spot quote approach to obtain services at the lowest possible cost and to minimize disruptions to country budgets. The project initiates the logistics process for orders as proactively as possible to mitigate the impact of delays caused by COVID-related challenges with container shortages and transshipment delays.

COMMODITY SOURCING, PROCUREMENT AND DELIVERY

GHSC-PSM regularly assesses the viability 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.

Pharmacy staff at Quiculungo Hospital in Cuanza Norte, Angola receive a visit from PMI/Angola. *Photo credit: GHSC-PSM*

Commodity Risk Profiles

COVID-19 continues to impact the project's suppliers and their upstream supply chains, particularly for malaria commodities, creating additional risk and longer lead times across commodity categories. The project monitors and mitigates COVID-19 impact through bi-weekly updates from suppliers at an order line level, updates from suppliers through regularly scheduled supplier meetings and business review meetings, and global donor collaboration calls that feed into monthly GHSC-PSM commodity risk profile updates. The commodity risk profiles detail the latest supplier and market intel regarding malaria commodities, from supplier production and sourcing of API, KSM and packaging materials, to logistics constraints. The commodity risk profiles further examine currently sourced volumes by supplier and geographical region against COVID-19 impact to inform potential risk for future orders. With the rise of COVID-19 cases in India in Q3, the commodity risk profiles helped to identify supplier delays and to drive actions to minimize or avoid further delays. Although heavily impacted by COVID-19, suppliers in India could maintain most of their committed goods availability dates.

Strategic Sourcing

In Q3, GHSC-PSM strategic sourcing of malaria commodities focused on:

- ***Conducting strategic tenders for critical commodity categories.*** In Q3, GHSC-PSM continued preparing for FY 2022 order fulfillment with an emphasis on key product categories such as ACTs, severe malaria medications, SPAQ, LLINs and RDTs. The tendering event for SPAQ ended and the project finalized allocations for FY 2022 procurements. The remaining tenders are under evaluation and the project expects to complete them in Q4. The project will make awards to suppliers offering the best value in the form of target volume allocations for

fulfillment in FY 2022. With these tenders, the project aims to update fixed pricing and mitigate risk to help ensure the uninterrupted supply of these critical health commodities.

- ***Conducting a tender for third-party lab services.*** To accommodate the testing of pharmaceuticals and LLINs, GHSC-PSM uses a network of third-party testing laboratories. In Q3, the project finalized its evaluation of offers received from existing and new labs and expects to execute long-term agreements with awarded laboratories in Q4.

Procurement and deliveries

In Q3, GHSC-PSM procured malaria commodities7 for 29 countries (all PMI countries, including one USAID-designated malaria country and a country with USAID bilateral project). This included $23.5 million in malaria medicines and commodities.

OTD and OTIF

Timeliness of GHSC-PSM deliveries remained consistent and extremely strong for standard OTD and OTIF over the reporting period for malaria commodities in Q3, with a rate of 90 percent (84 percent for COVID-impacted) (see Exhibit 7). The OTIF rate in Q3 was 92 percent (87 percent for COVID-impacted) (see Exhibit 8). Although the high degree of uncertainty and the extreme volatility in global supply chains caused by the pandemic has decreased, COVID-19 affected a large number of orders in Q3 FY 2021 due to lingering challenges impacting suppliers—particularly in India—and continued severe impact on the freight market. For more details on supplier impacts, see section C1. Global Commodity Procurement and Logistics.

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

Exhibit 7. Malaria Commodities, OTD

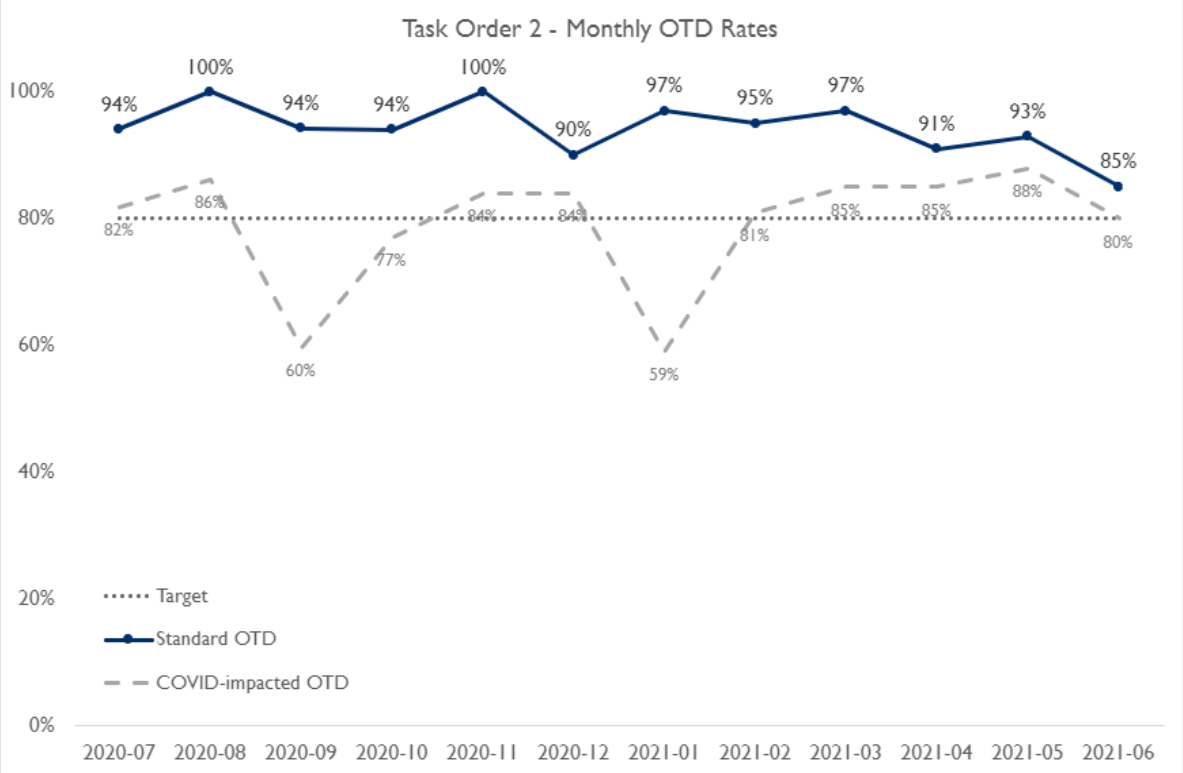
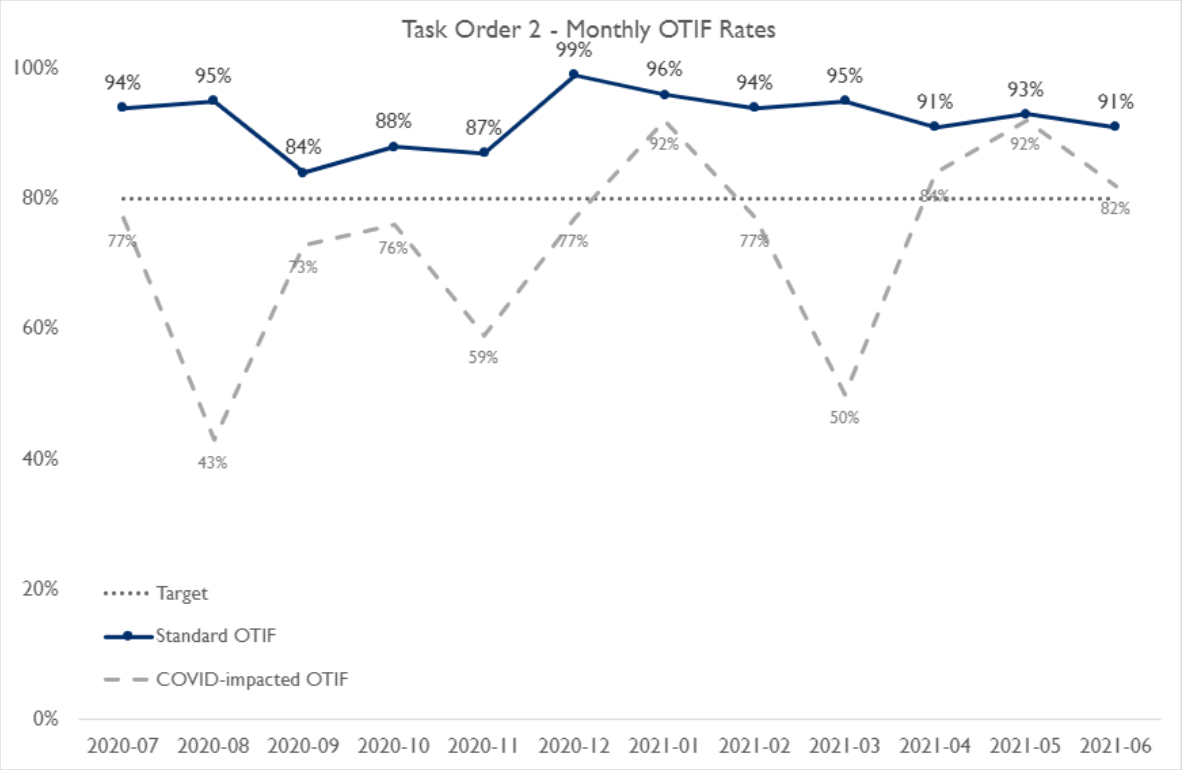


Exhibit 8. Malaria Commodities, OTIF



Logistics in Côte d'Ivoire

In April 2021, the NMCP requested delivery of 2.8 million LLINs from the port to the central level warehouse, and on to 11 districts for the mass distribution campaign with a deadline two weeks after submitting the distribution plan to the project. Typically, a warehouse can load up to seven trucks per day, making this a very short timeline for the quantity of LLINs, which would take 20 days just to load onto 136 trucks, in addition to the time the 3PL required to contact destination points, establish a delivery plan, and to prepare the deliveries for distribution at each location. In collaboration with the Mission and NMCP, the project extended the deadline by 10 days to 24th April and collaborated with the 3PL to add shifts and staff to meet the requested timeline. The project ultimately completed the planning, loading and delivery to the district level in 22 days, two days before the start of the mass distribution campaign.

Global sourcing collaboration

GHSC-PSM participates in the Malaria Pharma Task Force,[8] mRDT Task Force,[9] and IRS/ITN Task Force.[10] These task forces provide a valuable forum for information exchange on market risks and promote 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 KSM/API working group, which increases visibility and identifies and mitigates risks related to the upstream supply chains of KSM and API for finished malaria pharmaceutical products. In Q3, the working group focused on perceived risks to critical upstream key starting materials for artesunate, lumefantrine, and sulfadoxine, which are elements of many critical malaria commodities.

GHSC-PSM works with the Global Fund, UNICEF, and the Malaria Consortium to share demand information and to coordinate procurement planning for sulphadoxine-pyrimethamine + amodiaquine (SPAQ) for FY 2022 seasonal malaria chemoprevention (SMC) campaigns. In Q3, the project initiated a collaborative deep dive assessment of artesunate suppositories in response to persistent market challenges. The project continues to lead and facilitate monthly meetings with PMI, Global Fund and UNICEF to collaborate around mRDT procurements, supplier engagement, and stockout prevention.

PROACTIVE PROCUREMENT STRATEGY

GHSC-PSM invests in and adapts the proactive procurement strategy for key malaria commodities. Since the onset of the COVID-19 pandemic, the project has executed several of these strategies, which 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

[8] Pharma Task Force members include the Asia Pacific Leaders Malaria Alliance Secretariat, CHAI, the Gates Foundation, GHSC-PSM, the Global Fund, Impact Malaria, the Malaria Consortium, Medicines for Malaria Venture (MMV), MSF, Pan-American Health Organization, PATH, PMI, UNICEF, and WHO.

[9] mRDT Task Force members include CHAI, Foundation for Innovative New Diagnostics, the Gates Foundation, the Global Fund, the Malaria Consortium, Médecins Sans Frontières, PATH, PMI, GHSC-PSM, United Nations Children's Fund (UNICEF), United Nations Development Program, Unitaid and WHO.

[10] ITN/IRS Task Force members include the Against Malaria Foundation (AMF), CHAI, the Gates Foundation, GHSC-PSM, the Global Fund, Innovative Vector Control Consortium (IVCC), International Federation Red Cross (IFRC), MMV, MSF, PMI, Population Services International (PSI), Results In Health, UNICEF, Unitaid and WHO.

orders based on data-driven demand signals, which enables it to secure production capacity far earlier in the ordering process—often well in advance of receiving actual orders. The intent of these proactive procurement strategies is to ensure access to supply of critical commodities when countries need them, to reduce fulfillment lead times, and to hedge against considerable uncertainty and disruption in these markets. These strategies are enabled in part by use of demand data—derived from country supply plans and PPMRm—which the project translates into country stock risk dashboards on a bimonthly basis that illustrate the timing and scope of upcoming stock risks. The strategies are designed in part to mitigate these future stock risks.

In Q3, the project began converting the contractual letter finalized in Q2 into purchase orders for the proactive procurement of artesunate injectable.

QUALITY ASSURANCE

In Q3, GHSC-PSM continued looking for continuous improvement opportunities to ensure the quality of products procured on behalf of PMI as well as the safety and efficacy of these commodities. The project completed out-of-specification (OOS) investigations for mRDT and LLIN products and welcomed the WHO Prequalification (PQ) team to a discussion about LLIN quality and suppliers' quality management systems (QMSs) with the Global Fund and UNICEF. The project completed two method transfers for ACT products and qualified an LLIN testing laboratory to be added to its list of approved laboratories.

Global Adjusted QA/QC protocols

The project implemented modifications to the QA/QC protocols introduced as a result of COVID-19 and extended the protocol until July 2021. These included modifications to product QC protocols based on a risk evaluation by commodity type, the supplier's quality management system (QMS), and GHSC-PSM's historical data for each product. These adjustments allow the project to monitor the quality of all products while focusing its resources and attention on higher risk products for quality issues. The process enables consignments deemed low risk to be shipped concurrently with testing, decreasing the overall lead time for delivering products to countries and to users.

In Q3, the project continued developing a broader, more permanent QA/QC strategy that will be the standard process going forward and that builds on the adjusted QA/QC protocol, incorporating lessons learned and activities that facilitate an effective and efficient quality monitoring program within the supply chain.

Key performance indicators

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

- The project exceeded the 80 percent QA lead time target with a lead time of 100 percent when COVID-tagged items were excluded and 75.2 percent when considering all orders in Q3.
- The percentage of batches of product showing non-conformity was 0.27 percent in Q3.

PROMOTING SUPPLY CHAIN HEALTH

GHSC-PSM uses a network of third-party testing laboratories. In Q1 FY 2021, the project issued a tender to existing and new testing laboratories to align pricing with current market conditions, expand available testing capacity, and potentially shorten lead times. In Q3 FY 2021, the project continued evaluating pharmaceutical testing laboratories and completed the evaluation of the LLIN testing laboratories. The sourcing governance board approved the new LLIN testing allocation strategy, expanding the project's pool of qualified laboratories by adding another qualified laboratory to the project's list of approved laboratories. Also, the project continues to build flexibility with its current approved laboratories by completing method transfers for two ACT products and initiating a method transfer for an injectable product thereby increasing the number of qualified laboratories able to undertake ACT testing.

The project continued to support sourcing and procurement efforts by reviewing RFP documentation for three pharmaceutical products (one severe malaria and two SMC/SPAQ) and performing request for proposal (RFP) testing on one brand of PBO LLINs. Also, GHSC-PSM added two mRDT products with different packaging configurations to the eligible product list to meet country demand. The project tests and monitors products on the eligibility list. These QA activities increased the number of products in the project's portfolio, allowing for greater flexibility, which is essential as the markets experience uncertainty due to the resurgence of COVID-19 in regions where some suppliers are located.

Team activity in fostering a more robust QMS
In Q3 FY 2021, the project continued investigating quality issues and OOS occurrences, and looked for opportunities for continuous improvements of QMS for suppliers and for the project.

Quality in Pharmaceuticals
The project initiated investigations into two pharmaceutical products (SPAQ and artesunate injectable) and began engaging its third-party testing laboratories and suppliers of the products to determine root causes of the OOS results and implement effective CAPAs.

Quality in LLINs
In Q3, GHSC-PSM investigated fabric weight OOS results for an LLIN product. The project engaged with the supplier and testing laboratory to confirm results and to evaluate the impact of the OOS on the quality of the product. The project determined that the OOS did not occur because of lack of control in the supplier's manufacturing process but because the batches were designed to be on the upper specifications for fabric weight to ensure that the product met bursting strength specifications. The project requested that the supplier continue to monitor fabric weight results for batches manufactured and submit an adjustment to the specification to WHO as appropriate.

As part of the RFP process for LLIN procurement, the project performed a QMS documentation review of an LLIN supplier to better understand its QMS systems and determine whether there were any gaps in its QMS.

Quality in RDTs
GHSC-PSM continued implementing the proposal for enhanced QA for an mRDT supplier that received a notice of concern (NOC) from WHO. Based on the proposal, orders allocated to the mRDT supplier

were subject to the project's enhanced QA processes, requiring 100 percent testing of the batches procured and review of the product design files and batch records.

The project investigated a deviation for an mRDT supplier that informed the project of missing embossed artwork. The supplier explained that the mRDTs were clearly marked with information that was included in the product's Instructions for Use (IFU) and would not be impacted by the missing embossments. The supplier reported the incident to WHO and halted the use of the non-conforming mRDTs as a corrective action. Based on the supplier's explanation, the project and PMI decided that a recall would not be warranted and that the products should be distributed according to pre-established protocols. GHSC-PSM continues to follow up with the supplier on continuous improvement process controls that would prevent this type of incident in the future.

Collaboration

The project continued discussions about LLIN quality and suppliers' QMS with the Global Fund and UNICEF and invited WHO PQ to the working group with the goal of improving quality and QMS for LLINs. The WHO provided updates on past, current and upcoming quality assurance activities for the LLIN industry. The project and global procurers will provide advice to WHO PQ on the assurances procurers required from LLIN suppliers, and WHO will continue to provide procurers with guidance on quality control protocols to ensure quality assured products are provided to the client.

The project and the Global Fund continued monthly QA/QC collaboration meetings in Q3, with WHO PQ as an optional attendee. PMI and the Global Fund engage the same manufacturers, use the same WHO guidance, and often experience similar supplier challenges. Representatives from both teams discussed QA/QC activities to mitigate COVID-19 restrictions, OOS investigations, and other shared experiences.

ADOPTION OF STANDARDS-BASED IDENTIFICATION, BARCODING, AND DATA-SHARING

In Q3, GHSC-PSM continued to see 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. Q3 highlights and milestones associated with these standards are included in Section C. GHSC-PSM met regularly in Q3 with the Global Fund and its LLIN procurement agent to align identification, labeling, and master data exchange requirements and exchange lessons learned.

PRIORITIZING AND TRANSFERRING ORDERS

In Q3, to address country needs and market constraints, GHSC-PSM worked closely with USAID to prioritize orders based on need and conducted commodity order transfers to improve stock status. Below are examples of how the project continued these strategies in Q3 to ensure that countries could avoid stockouts.

In Q1 FY 2021, changes in Kenya consignee and import requirements delayed an order of mRDTs. In Q3 2021, Burundi requested to expedite delivery of 62,300 mRDTs for May 2021. This mRDT order was not available to be expedited, so the project proposed to fulfill a large portion of Burundi's mRDT order from the available stock of 60,000 kits that had been produced for Kenya. The Burundi Mission accepted the proposal and GHSC-PSM worked with the supplier and country offices to redirect the order of 60,000 mRDTs originally destined for Kenya to Burundi to address the new requested delivery date. The total order placed for Kenya was cancelled and the consignment was redirected to Burundi. The project fulfilled the balance of 2,300 mRDT kits for Burundi from fresh production. The project expects the shipment to arrive in Burundi in Q4.

In Q3, again due to changes in Kenya consignee and import requirements, GHSC-PSM redirected an order of artesunate injectable for Kenya to Uganda to fulfill an urgent need. Also, a production slot for Zambia was advanced for the same presentation, while the original production slot was used for a portion of Kenya's shipment. That GAD was moved to June 2021. Finally, a portion of the Kenya production was given to the Global Fund to meet urgent demand for Uganda.

In Q3, PMI asked the project to transfer SPAQ stock from the Belgium RDC to the Malaria Consortium to fill a gap in the upcoming 2021 SMC campaign. The project executed a memorandum of understanding to enable the donation and delivered the product in advance of the campaign, averting the projected stock shortage.

STOCKOUT REDUCTION INITIATIVE

Despite the positive impact of PMI's 15 years of supply chain investments, stockout performance for several countries has not consistently improved over time. Many PMI countries have frequent stockouts of malaria commodities at SDPs. For example, across PMI-supported countries for which data are available, stockout rates of ACTs average roughly 22 percent for 2019-2020 calendar years. To address this gap, in FY 2020, PMI launched an initiative to optimize its investments with the goal of significantly reducing stockout rates at SDPs across all supported countries over the following two to three years.

Determining what combination of PMI supply chain investments will achieve and maintain large reductions in stockout rates at SDPs requires each country to create a set of activities tailored to the local context that addresses the key barriers and risks to consistent supply chain performance.

In support of this initiative, GHSC-PSM rolled out two activities: first, identifying the most critical barriers and risks to consistent stock performance that are already known by country teams; and second, building toward development of a comprehensive two-year PMI supply chain investment plan.

To prepare for FY 2022 work planning, in Q3 FY 2021 the project began stage 2 of implementing the Stockout Reduction Initiative Playbook, with the objective of refining the high-level investment plans that countries developed during stage 1. In stage 2, countries will build on stage 1 outputs to include greater detail and incorporate stakeholder input, including:

- Reviewing baseline and targets based on available data
- Reviewing root causes using supporting evidence

- Validating proposed solutions
- Completing additional deliverables, including a feasibility matrix and a PMI activity look-back
- Developing detailed investment plans that will be the basis for FY 2022 work planning
- Refining potential risks and interdependencies that need to be addressed before and/or during implementation

The project is guiding countries through these steps and providing them with the tools needed to collect and use the information to revise their investment plans.

LLIN DISTRIBUTION SUPPORT

In Q3, GHSC-PSM delivered 12.9 million LLINs to countries for onward distribution as a malaria prevention measure. Many countries deliver LLINs from the central level to health facilities for continuous distribution. Other countries planned, launched, or continued 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 prepositioning 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.

In Q3, GHSC-PSM supported LLIN distribution activities, including:

- **Cambodia:** GHSC-PSM procured 336,000 LLINs for the National Centre for Parasitology, Entomology and Malaria Control (CNM)'s mass distribution campaign. Due to a space shortage at the central warehouse, the project provided financial support and outsourced the storage to a third-party logistics (3PL) company. GHSC-PSM supported LLIN distribution activities in Preah Vihear province at the request of CNM. The project trained local distribution teams to register households and distribute the LLINs, and oversaw the teams during household registrations in 102 targeted villages. GHSC-PSM subcontracted with a 3PL for LLIN delivery from the central warehouse in Phnom Penh to Preah Vihear, where they were repacked with LLINs already stored at the provincial level and then distributed to 24 health facilities. Household distribution began on June 15 and will end on July 15. At the end of Q3, 79,675 local distribution teams of community members and health facility supervisors distributed PMI-funded LLINs from health facilities to recipients.

Mrs. Him Pak, mother of two, receives a long-lasting insecticide-treated hammock net (LLIHN) during a door-to-door mass distribution campaign in Preah Vihear Province, Cambodia in June 2021. *Photo credit: Hsandy Thovy, GHSC-PSM*

- **Liberia:** In Q3, the project supported the NMCP in implementing the following activities:

    - Data visibility: GHSC-PSM worked with county supply chain coordinators to report on the total number of LLINs available at the county level. This information helps inform the NMCP about LLIN stock status at the county level for decisions related to emergency resupply or redistribution of products to health facilities that require LLINs.

    - Support of the 2021 mass LLIN distribution campaign: The NMCP launched the campaign on June 15. The project assisted the NMCP in training 20 national-level trainers who cascaded the microplanning working sessions to include officers-in-charge of health facilities and district health teams. The project also supported the NMCP and Global Fund's Principal Recipient Plan International Liberia (PIL) to train 20 national-level trainers on household registration, and they cascaded this training to the county level with remote support from the project to clarify issues related to household registration (HHR) and COVID-19 prevention protocols. Also, the project collaborated with the NMCP in training 75 national monitors to monitor the HHR process.

- **Malawi:** The project served on the National Task Force for the 2021 mass LLIN distribution campaign alongside the MOH, NMCP, and implementing partners to prepare for the campaign. Activities included developing and reviewing microplanning documents for the national stakeholders' workshop; developing operational plans and budgets for six districts (Chitipa, Karonga, Kasungu, Likoma, Mzimba South, and Rumphi); and evaluating bids for warehousing and transportation services. The project further supported the NMCP in reviewing the 2018 distribution strategy and updating it for the 2021 campaign implementation strategy and developing an LLIN campaign implementation roadmap and payment plan.

- **Ethiopia:** The project supported the National Malaria Elimination Program (NMEP), regional health bureaus, and district health offices before the LLIN distribution campaign, including by developing supportive supervision checklists and logistics tracking tools, revising campaign orientation materials, microplanning (including logistics, social behavior change communications, and warehousing, among others) with districts. GHSC-PSM also supported woredas in transporting nets to health posts, training health extension workers, deploying health post-level supervisors, and distributing to recipients. In Q3, the project conducted the following activities:

    - As part of the 2.8 million LLINs planned for distribution in FY 2021, delivered 2.7 million LLINs to 114 woredas. Of these, 1,703,161 LLINs were distributed to households (benefiting 3,406,322 people) during the quarter. This brings the total LLINs distributed to recipients in FY 2021 to 1,952,251.

    - Completed the LLIN distribution campaign in two regions (Dire Dawa and Harari) and in 51 woredas in the Somali region and four woredas in the Amhara region. The campaigns are active in the remaining 45 woredas in Oromia and Somali regions and will be completed in Q4.

- **Zambia:** The project works with the National Malaria Elimination Committee (NMEC) to develop allotment figures for the 2021 continuous LLIN distribution. In Q3, the project worked with the NMEC and a 3PL to use the allotment figures to develop a distribution list

for four PMI-supported provinces (Eastern, Luapula, Muchinga and Northern). The project uses a 3PL to transport the LLINs to the districts, monitoring and coordinating the delivery and resolving bottlenecks as they arise. The total LLINs being distributed is 600,000.

Exhibit 9. Many countries also supported LLIN distribution. Examples include:

Countries	**Number of LLINs**	**Type of Distribution**
Burundi	216,050	Continuous distribution
Ethiopia	2.7 million	Mass distribution campaign
Ghana	1.01 million	Point mass distribution campaign
Liberia	65,350	Continuous distribution
Sierra Leone	242,950	Continuous distribution
Uganda	60,000	Continuous distribution
Zambia	600,000	Continuous distribution
Zimbabwe	415,000	Mass distribution campaign
Total	**5,309,350**	

These LLINs are enough to protect more than 10.6 million people.

COUNTRY SUPPORT

GHSC-PSM provided supply chain systems strengthening support for malaria medicines and commodities in 22 countries in Q3 FY 2021.[11] Activities in Q3 included:

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

Cambodia. GHSC-PSM supported development of a Malaria Stock Data Consolidation Tool aimed at consolidating stock data on key malaria commodities extracted from the Stock Module of the National Center for Parasitology Entomology and Malaria Control (CNM)'s Malaria Information System. The CNM Pharmacy Unit will use the information provided by the Malaria Stock Data Consolidation Tool during monthly supply coordination meetings to review stock status, identify stock issues, and proactively take targeted and informed actions to prevent potential risks of stockouts and/or expiries. The first version of the tool was released and introduced to the Pharmacy Unit on May 20, 2021.

Ethiopia. GHSC-PSM supported the scale-up of the Auditable Pharmaceutical Transactions and Services (APTS/eAPTS) system to 30 health facilities through a series of trainings and on-site support. MOH/PMED, in collaboration with GHSC-PSM, conducted APTS training for 324 participants in the Somali; Addis Ababa; Oromia; Southern Nations, Nationalities, and Peoples' (SNNP); and Sidama regions; and for 413 health workers and 21 health facility finance staff in the Amhara and Oromia regional health bureaus (RHBs). The project supported the MOH and Sidama RHB in developing a resource sharing directive that will be instrumental in legalizing and standardizing the practice of resource sharing among health facilities in the region and will contribute to reducing stockout rates and/or expiries. Also, the project is working with the MOH to develop the requirements for linking the eAPTS with electronic medical records.

Guinea. GHSC-PSM supported the development of an eLMIS dashboard in DHIS2. The project organized a technical working session with NMCP staff to identify logistics data fields for the integrated dashboard, a process that will continue through Q1 FY 2022. In May 2021, GHSC-PSM organized a two-day training workshop on eLMIS logistic data shared in DHIS2 and performing data analysis related to stock status in DHIS2. Two participants from Système National d'Information Sanitaire (BSD/SNIS), four from the NMCP, one from Catholic Relief Services (CRS), and one from Stop Palu+ participated in this training. Participants made several recommendations through the training, including identifying and setting a harmonization period for data reporting and validation between BSD/SNIS and the NMCP, defining a clear procedure by BSD/SNIS for adding/activating a facility in DHIS2 before reporting, and instituting a notification system to inform other services about facility updates. The NMCP and the BSD/SNIS will be responsible for monitoring the implementation of these recommendations, while GHSC-PSM will ensure follow-up communication on required activities and support the relevant stakeholders.

Zambia. The project and Program for the Advancement of Malaria Outcomes (PAMO) Plus jointly conducted onsite technical supportive supervision (OTSS) visits in Eastern, Luapula and Muchinga provinces in Q3. The supervision team observed 100 percent availability of all malaria commodities in the health facilities on the day of visit. This result may be attributed to the fact that the project:

- Proactively performs monthly stock status and imbalance assessments
- Supports district health officers in redistributing commodities using the stock redistribution tool
- Facilitates virtual malaria commodity meetings with the NMEP and partners to review shipments and stock status, and make informed decisions
- Ring-fences buffer stock of ACTs and mRDTs at regional Zambia Medicines and Medical Supplies Agency (ZAMMSA) hubs to respond to urgent needs in case regular orders are delayed

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 **86.5 million couple-years of protection**, including **4.8 million in Q3 FY 2021.**

Procured FP/RH commodities for 26 countries[12] and provided **health supply chain systems-strengthening support** to **24 countries** with FP/RH funding.

Continued to successfully fulfill USAID-supported countries' orders in a timely manner, **achieving 100 percent (80 percent COVID-impacted) OTD** in Q3.

Supported onboarding 25 countries to the Global Family Planning Visibility and Analytics Network (GFPVAN) basic country viewer roles as part of the transition from the Procurement Planning Monitoring Report (PPMR). Users include members of Ministries of Health, USAID Mission and UNFPA staff, and implementing partners.

Updated the GHSC-PSM 2019 Contraceptive Security Indicators Survey dashboard and landing page to reflect survey data recently collected in seven Latin American countries thanks to a partnership with the ForoLAC group of the Reproductive Health Supplies Coalition (RHSC): Argentina, Bolivia, Chile, Ecuador, Mexico, Nicaragua, and Paraguay.

Welcomed the addition of the levonorgestrel-releasing intrauterine device (IUD) for the first time to USAID's and UNFPA's contraceptives product catalogs.

Published an op-ed in Devex that called for increased collaboration to strengthen supply chains. The op-ed, which featured data about how COVID-19 has affected FP, was widely shared on social media.

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 systems and contraceptive security in partner countries; and provides technical leadership to strengthen the global supply, increase financing, and introduce new FP/RH commodities.

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

ADDRESSING FP/RH PRIORITIES

GHSC-PSM addressed USAID's FP/RH priorities by managing and continuously improving its global supply operations, partnering with countries to build self-reliant supply chains, and leading with knowledge and evidence. In Q3, COVID-19 restrictions continued to prevent project staff from traveling to or joining in-person workshops to support activity implementation. Despite this challenge, GHSC-PSM worked with activity leads and country offices through virtual workshops or other approaches to ensure program continuity where possible.

COMMODITY SOURCING AND PROCUREMENT

Securing reliable supply and maintaining high on-time performance

Despite the COVID-19 pandemic and persistent and severe global supply shortages of injectable and implantable contraceptives, in Q3, GHSC-PSM ensured countries had access to a continuous and reliable supply of FP/RH commodities. While COVID-19 disrupted the DMPA-IM market, restricting the current offering of products, GHSC-PSM had secured supply of DMPA-IM by onboarding the first generic supplier of DMPA-IM in 2018 and two additional generic suppliers in 2020. The project leverages RDCs and regularly analyzes allocation of production to ensure countries receive adequate supply to avoid any stockouts. The impact of the pandemic on logistics continues, including a reduction in global shipping capacity, continuous difficulty in confirming booking and moving cargo, a global container shortage, and decreased availability of air freight capacity.

Commodities Procured for FP/RH Programs

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

Timeliness of GHSC-PSM deliveries remained strong for standard OTD over the reporting period for FP/RH commodities at 100 percent (80 percent COVID-impacted). OTIF numbers remain high at 100 percent (80 percent COVID-impacted). At the end of Q2 FY 2020, the number of COVID-19-impacted orders started to increase significantly and, as predicted in previous reports, continued to adversely affect OTD performance throughout the past year. Although the high degree of uncertainty and volatility in global supply chains caused by the pandemic has since lessened, the pandemic affected orders in Q3 FY 2021. This impact is expected to continue through Q4 and potentially beyond.

Exhibit 10. FP/RH commodities, OTD

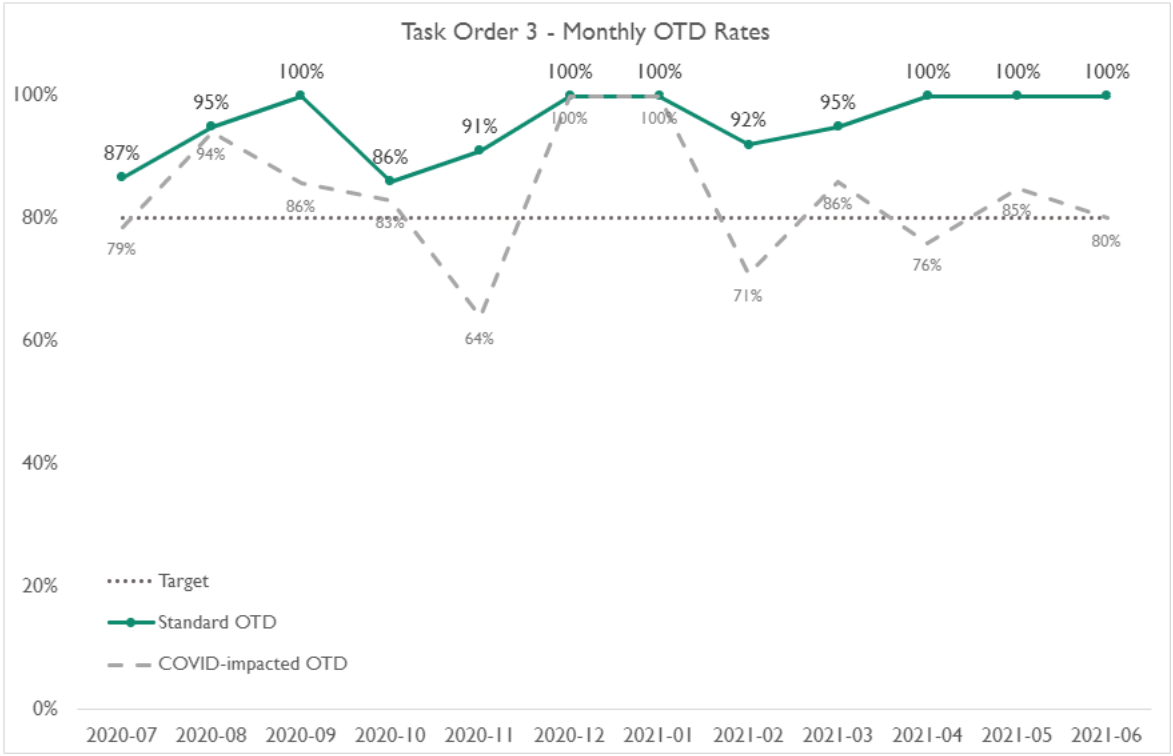
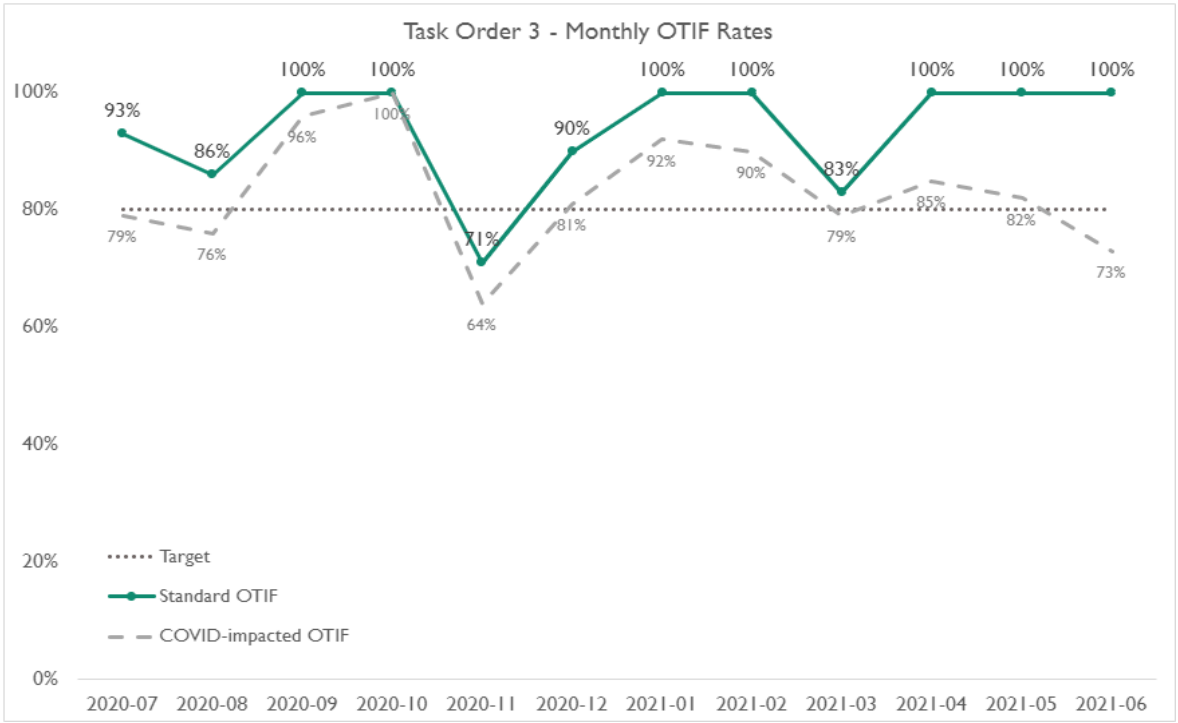


Exhibit 11. FP/RH commodities, OTIF



Introduction of long-acting family planning method to USAID Catalog

In Q3, the levonorgestrel-releasing intrauterine device (IUD) 52 mg also known as hormonal (IUD) or hormonal intrauterine system (IUS), was added for the first time to USAID's Product Catalog.[13] The products introduced are Mirena™, which is supplied by Bayer AG, and Avibela™, which is supplied by Impact RH360. Both products are quality-assured by stringent regulatory authorities. The hormonal IUD is a highly effective, long-acting, reversible contraceptive with important non-contraceptive health benefits. The method was first introduced in Europe in 1990 and in the United States in 2000, and it has been popular in these settings. Despite its advantages, the method has not been widely available in LMICs to date largely due to high product cost.

Globally, the Hormonal IUD Access Group, a consortium of governments, donors, manufacturers, procurement agencies, researchers, and service delivery groups, supports introduction of the hormonal IUD. The Hormonal IUD Access Group—GHSC-PSM is a member—takes a comprehensive approach to facilitating method introduction and scale-up by: 1) ensuring availability of affordable, quality-assured products to facilitate sustainable markets; and 2) supporting countries that are ready and willing to introduce and scale-up the method through a phased approach.

Social marketing engagement activities

GHSC-PSM began conducting a series of interviews with Social Marketing Organizations (SMOs) in Q3. This is to collect information on the role of local wholesalers and local manufacturers as suppliers of global health commodities, specifically contraceptives and priority maternal, newborn, and child health products such as oral rehydration salts and zinc. These interviews support the USAID core-funded Wholesaler Activity and will inform a white paper on private sector wholesalers. USAID-supported SMOs in Afghanistan, Bangladesh, Senegal, and Togo have contributed. Once published, GHSC-PSM will share the white paper with these SMOs.

In Q2, to support the transition from combined oral contraceptives with iron placebo to sugar placebo, GHSC-PSM continued to work with SMOs to maintain healthy stock levels of Combination 3 (Bayer's combined oral contraceptive with iron placebo packaged for overbranding by social marketing organizations) during the transition. Also, in collaboration with USAID, the project engaged in a series of strategy discussions with sugar placebo product suppliers to address supplier regulatory restrictions and requirements on overbranding and the registration status of the product in project countries.

To prevent and manage potential disruptions in the social marketing space, GHSC-PSM continues to monitor social marketing activities within project countries. In Mali, where the USAID Mission is working to onboard a follow-on project, GHSC-PSM is closely following the transition process to ensure no or minimal disruption in supply and product availability, and to ensure the follow-on project is aware of the current state of global supply and overbranding regulations.

Packaging rationalization and stakeholder engagement

In coordination with UNFPA, GHSC-PSM developed and finalized a joint green packaging scope of work exploring opportunities for greener, more environmentally friendly packaging of priority FP products. In Q3, the project onboarded a green packaging consultant to develop, prioritize, and critically evaluate recommendations for greener packaging of key FP products, with results expected by the end of Q4.

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[13] Introduction of long-acting family planning method to USAID Product Catalog | U.S. Agency for International Development

The results of this green packaging assessment will inform the timeline for implementing recommendations for harmonization and optimization of packaging of FP products that have been developed over the course of this multi-year exercise.

Dissemination of Total Market Analyses
GHSC-PSM contracted IQVIA to update and disseminate country-level total market analyses conducted in FY 2018 and FY 2019 to enable stakeholders to better understand the availability of contraceptive supplies. IQVIA submitted drafts of two papers for publication by peer-reviewed journals. In June 2021, the peer-reviewed African Journal of Reproductive Health (AJRH) published the Kenya analysis, titled "Time series study of the sales of non-subsidized contraceptives in Kenya at times of public sector shortage: implications for future sustainability". The paper describes volume trends of non-subsidized contraceptives. The paper concludes the market for non-subsidized contraceptives is small and constrained and speculates that if current market conditions persist, non-subsidized products will be unable to play a major part in building the sustainability of the FP market.

Landscape survey of local manufacturers' capacity to produce modern contraceptives
GHSC-PSM contracted IQVIA to conduct a landscape survey of local capacity to manufacture oral contraceptives and DMPA-IM in sub-Saharan Africa. In Q3, IQVIA created a preliminary business case for local manufacturing of DMPA-IM, combined oral contraceptives, and emergency oral contraceptives, which considers the size of the investment required to build a stand-alone hormonal manufacturing factory, the cost of goods sold, operating costs, and profit. In Q4, IQVIA will interview select manufacturers in Ethiopia and Kenya to validate the assumptions made in the preliminary business case, and to discuss feasibility of local manufacturing in sub-Saharan Africa.

The role of domestic wholesalers in supplying quality FP and MNCH products
GHSC-PSM finalized an outline for a joint TO3 and TO4 white paper, in coordination with GHSC-QA, discussing the role of private sector wholesalers in supplying quality FP and MNCH products. The white paper will provide a summary of previous reports, publications, and information collected through key informant interviews on the role of domestic wholesalers to provide quality assured products and an overview of wholesaler sourcing and commonalities. In Q3, the project interviewed key stakeholders to understand the challenges and successes of working with domestic wholesalers and to assess additional opportunities regarding how governments, donors, nongovernmental organizations, SMOs, and others can further engage with domestic wholesalers. A draft of the joint white paper is expected in July.

COLLABORATION WITH GLOBAL STAKEHOLDERS

The project builds global partners' awareness of and support for the U.S. Government's FP/RH priorities and programs and supports USAID's leadership in contraceptive security through the following activities.

Reproductive Health Supplies Coalition Virtual Minka
In April, GHSC-PSM staff from across the project attended the RHSC's two day virtual "minka" (named after the Andean tradition of community work), convened to inform the development of the RHSC work plan from 2021-2025. RHSC organized discussions around the three outputs of the RHSC work plan: money, markets, and movement. Project staff participated in discussions with the various working groups focused on developing activities to support those outputs. Key themes and priorities identified include: resilience, advocacy for supplies, and data visibility. Since the meeting in April, GHSC-PSM contributed to the revision and finalization of these work plans.

Tracking contraceptive security

GHSC-PSM launched the 2021 round of the Contraceptive Security Indicators survey this quarter in over 50 countries. This year's survey includes several updates, including questions to assess the quantity of contraceptives purchased and forecast, 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 measures countries are taking to mitigate challenges. GHSC-PSM will collect and validate data in Q4.

In addition, GHSC-PSM updated its 2019 Contraceptive Security Indicator Survey dashboard and landing page to reflect survey data recently collected in seven Latin American countries thanks to a partnership with the ForoLAC (Latin America and Caribbean) group of the RHSC: Argentina, Bolivia, Chile, Ecuador, Mexico, Nicaragua, and Paraguay. ForoLAC presented these results to partners and stakeholders within the Latin American region and disseminated factsheets highlighting key results.

Enhancing data quality for the stock-out indicator

A constant challenge in calculating health facility stockout rates is the interpretation of whether a facility is actively offering a product and tracking those facilities over time. To address this challenge, GHSC-PSM and USAID developed the Active Site Rule. This business rule uses available logistics data to better understand the stock status of FP methods at health facilities. An "active site" for an FP method is defined as a health facility that has had the method in stock, issued it to clients, or ordered it at any point in the previous 12 consecutive months. Facilities deemed inactive for the FP method are removed from the stockout rate calculation for that method and for that reporting period—whether for the average stockout rate indicator for USAID's annual Performance Plan and Report or for quarterly or monthly stockout reporting. In Q2, GHSC-PSM launched the first in a two-part video series explaining the business rule and how to apply it. The second part will launch in Q4.

Enhancing visibility of FP supplies data

GHSC-PSM serves as a key contributor in supporting strategic development and scale-up of the GFPVAN platform and processes. The GFPVAN is the reproductive health community's pioneering undertaking to increase supply chain visibility and improve collaboration across stakeholders. In Q3, GHSC-PSM continued to focus on enabling the project to realize the benefits of the tool by supporting and onboarding users.

Specifically, GHSC-PSM staff:

- Onboarded 9 countries this quarter to the GFPVAN basic country viewer roles as part of the transition from PPMR. Users include members of Ministries of Health, USAID Mission staff, UNFPA staff, and implementing partners. The onboarding was the result of a coordinated effort to raise awareness about GFPVAN through webinars and inter-donor collaboration
- Supported targeted improvements to GFPVAN, including dashboards, following feedback from country users after their onboarding to basic country viewer roles
- Contributed to the enhancement of a new process for automatic upload of country inventory reports into GFPVAN (SmartLoader Forms)
- Liaised with UNFPA and GHSC-TA Francophone Task Order to obtain approvals from MOHs to use data from the UNFPA system in the VAN, thus eliminating redundancies and creating efficiencies for the country data submission process

- Reviewed action request tickets and data validation tickets, resulting in the resolution of stock imbalances across several supported countries
- Held design sessions to support the integration of requisition order data to the ARTMIS-GFPVAN data feed

Thanks to additional funding support from USAID over the last year, on June 30, 2021, the contraceptive PPMR database was officially retired after a successful transition of all PPMR data and processes into the GFPVAN. This enables global and country partners to benefit from more streamlined data entry, access to incoming order and shipment data linked to their inventory and consumption, and centralized collaboration. Read more on the PPMR Transition Factsheet.

The GFPVAN now includes 37 of the 38 countries previously reporting data through the PPMR, with 33 trained in the platform in the first six months of 2021, and the rest trained previously. These new users can now comprehensively track product movement throughout their supply chains, from orders to shipments and inventory. Former PPMR countries now have an automated mechanism for sharing exceptions management and data validation requests with the Consensus Planning Group, allowing for rapid problem solving and strengthened supply planning.

National Product Catalog

GHSC-PSM participated in the 2021 Co-Creation Workshop: Sharing Product Master Data, which Digital Square, GS1 and Village Reach hosted in Q3, with support from USAID. The two-day workshop focused on data challenges in making product data easily available to any organizations planning to adopt GS1 standards for product identification. Workshop participants also discussed the people and governance aspects required to establish National Product Catalogs (NPCs). GHSC-PSM presented the NPC initiative implemented across Malawi and Rwanda. The project also helped coordinate presentations from Malawi and Rwanda panelists. GHSC-PSM coordinated standardized product master data contributions from those countries to the global open product data set. To accelerate master data collection and quality, the participants plan to lean into those who have already gone through the process, seek pooled funding from multiple donors to maintain core functionality, focus on priority commodities, provide guidance on roles and responsibilities, and demonstrate to suppliers the importance of supplying core data attributes to the Global Product Catalog. TO3 funded the Co-Creation Workshop. However, all four task orders contributed to the NPC work in Rwanda and Malawi.

MEASURING THE RETURN ON INVESTMENT FOR HEALTH SYSTEMS STRENGTHENING INTERVENTIONS

In Q3, GHSC-PSM explored the following problem statement: Investments in supply chain improvements are not clearly based on analyses of the optimum allocation of resources to achieve quantifiable (or measurable or assessable) return on investment. In support of this effort, the project completed a grey literature review and key informant interviews with academic researchers to explore various methodologies used to understand return on investment. These include cost-benefit analysis, social return on investment, system dynamics modeling, and other methodologies. GHSC-PSM will draft and share findings from this exploration with USAID to inform future investments.

UPDATE ON PUBLIC HEALTH SUPPLY CHAINS POST-BLACK SWAN EVENT ACTIVITY

In Q3, GHSC-PSM created and published a short, three-part series podcast on the Recovery Strategies Post-Black Swan field guide finalized in Q2. The podcast features Dr. Guillaume, Project Director from the Haiti GHSC-PSM office, and Joe Shobe, Supply Chain Visibility Architect, in which both provide their unique perspectives and wisdom on planning for supply chain emergencies and mitigating the impact of supply chain shocks by creating more resilient supply chains. The project also published an Op-ed in Devex on strengthening supply chains, linking to the Black Swan guide and 3-part podcast. Devex published the op-ed on the same day that Chemonics and Foreign Policy sponsored a joint dialogue, "Building Resilience Across Global Health Supply Chains".

Since the Black Swan Guide went live on the GHSC-PSM website in March 2021, the page has had 357 pageviews, 294 of which have been unique pageviews, with an average time of 3 minutes and 36 seconds that users spend on the page, which is much higher than the average webpage and indicates that users are taking time to review the guide and its related resources. Since being posted, the guide has remained firmly in the top 50 pages accessed on the site, while its parent page, the ESC Response Preparedness page is in the top 15 pages accessed on the site, with 842 pageviews (738 of them unique) and users spending an average of 3 minutes and 44 seconds on the page. The top countries accessing the page over this four-month period were: the United States (60 percent of views), Ethiopia (8 percent), Haiti (3 percent), Indonesia (2 percent), Kenya (2 percent), and Thailand (2 percent). Both the Devex op-ed and the and the podcast link to and/or reference the post-Black Swan field guide.

BIG DATA

In Q3, GHSC-PSM presented the outcomes of the TO3 Big Data activity to USAID. This activity was built on past analysis of how to combine demographic indicator data (Population and DHS survey data) with logistics to help supply chain and program implementing partners to better target actions for improving FP outcomes. The activity aimed to demonstrate how data science (analytics) can leverage management information systems (MIS) investments to both increase data visibility and enable greater data use.

In this case, working with the Mali team, GHSC-PSM set up an integration of routine logistic data from the OpenLMIS into a cloud-based open-source data analytics platform (DASH) to be synergized and analyzed with demographic indicator data. The interactive dashboard was designed to facilitate coordinated stakeholder actions through a stakeholder meeting. The stakeholders use demographic indicator data to determine high priority areas and combine these data with logistics data to determine where and what targeted actions are needed, namely those needed for increasing FP demand and the availability of FP products. The actions can be targeted to individual facilities and/or a region. Finally, through the dashboard, stakeholders can monitor impact and adapt targeted actions.

COUNTRY SUPPORT

Below are examples of the technical assistance that GHSC-PSM provided to strengthen in-country[14] supply chains for FP/RH commodities this reporting period.

Pakistan

Project Trains Master Trainers to Improve Contraceptive Commodity Security

Despite Pakistan's efforts to slow population growth through policy reform, political commitment, and well-supported public and private sector FP programs, contraceptive commodity security at the last mile remains a challenge.

Through its "Naya Qadam" initiative, Pathfinder has been working in Punjab and Sindh provinces to expand FP/RH services and skills. The organization requested technical assistance from GHSC-PSM to build the capacity of Pathfinder district teams in using contraceptive LMIS data for improved commodity security. GHSC-PSM conducted a two-day training on Supply Chain Monitoring and Evaluation and Contraceptive Logistics Management Information System (cLMIS) data use in Q3.

The project trained 14 master trainers, including Pathfinder staff and government staff from the Naya Qadam six intervention districts (three each in Punjab and Sindh). The master trainers then conducted training at the district level.

Development and implementation of the training module has created synergies between the different organizations working on family planning in Pakistan. Moreover, the addition of more modern and reliable data tools to the toolbox is helping to create more efficient and specialized human resource cadres. This collaboration is another step forward toward enhancing women's reproductive health in Pakistan.

South Sudan

FP Expands Contraceptive Availability, Reliable Data Collection

In May 2021, GHSC-PSM and partners completed a 14th contraceptive commodities kitting cycle. GHSC-PSM in South Sudan compiles FP commodities from UNFPA into kits, which are then distributed by partners three times per year. These distributions have a direct impact on the availability of contraceptives at SDPs, subsequently leading to an increase in FP services across the country.

Some notable achievements during this cycle included piloting a new software, KoboTools, and expanding the number of SDPs receiving commodities. KoboTools is a data collection tool used to monitor and capture the expiry dates of commodities and create associated batch series. GHSC-PSM

[14] GHSC-PSM procured FP/RH commodities for the following countries: AFRICA: Angola, Burkina Faso, Burundi, DRC, Ethiopia, Ghana, Guinea, Liberia, Madagascar, Malawi, Mali, Mozambique, Nigeria, Rwanda, Senegal, Tanzania, Uganda, Zambia; LAC: Haiti; ASIA: Nepal. The countries for which GHSC-PSM provides technical assistance with FP/RH funding are: 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.

also used the software for quality assurance throughout the kitting process. In piloting this new software, the project was able to proactively gather data from all levels of the kitting process, which has been challenging in the past.

Also, GHSC-PSM expanded distribution of the FP kits to include Upper Nile and Jongelei states through a newly established partnership with United Nations Children's Fund (UNICEF). Before the C14 distribution cycle, SDPs in these two states had not received FP kits since early 2020.

B4. MATERNAL, NEWBORN, AND CHILD HEALTH

20 countries received maternal and child health supply chain strengthening support in Q3 FY 2021.

12 countries procured MNCH medicines and commodities in Q3. Since its beginning, the project has procured a total of **$23.7 million in MNCH commodities.**

The project disseminated **global guidance on distributing and dispensing MNCH commodities during COVID-19** and published **MNCH commodity price and lead time updates** in Q3.

Addressing COVID-19 challenges

In Q3 FY 2021, GHSC-PSM continued to implement core activities in the MCH portfolio despite challenges related to COVID-19. Many activities were quickly adapted to virtual settings. More on how the project has supported countries' management of MNCH commodities in the time of COVID-19 is included under "Helping countries adapt to address COVID-19 challenges" below.

GHSC-PSM supports USAID's efforts to prevent child and maternal deaths by increasing access to quality assured medicines and supplies under the Maternal and Child Health (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 Q3, including those of the project's global supply chain and country offices. Specific objectives may not be addressed if there is not significant progress to note for the quarter. 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 to manage commodities.
- **Objective 3. Improve adherence to globally recognized MNCH commodity quality standards**: The project develops procurement, storage, and distribution resources and partners with national governments to implement MNCH commodity quality standards.
- **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.

PROVIDE INTERNATIONAL MNCH SUPPLY CHAIN LEADERSHIP AND GUIDANCE

Conducting a commodity landscape study in Ghana on antihypertensives for use during pregnancy

Pregnant woman receives antenatal check-up at Adawoso Health Facility in Eastern Region, Ghana. *Photo credit: GHSC-PSM/Bobby Neptune*

Nearly 300,000 maternal deaths occur annually, with the majority occurring in low- and middle-income countries (LMICs). Hypertensive disorders in pregnancy—comprising chronic hypertension, gestational hypertension, pre-eclampsia, and eclampsia—are the second-leading cause of maternal death and account for 14 percent of maternal deaths globally. The supply chain delivers antihypertensives to treat and prevent these conditions for mothers in LMICs. GHSC-PSM began working with the Ghanaian Ministry of Health and Ghana Health Service in Q2 to assess Ghana's antihypertensive supply chain and identify factors that either contribute to or inhibit commodity availability. In Q3, the project collected information on policies and processes for procurement and supply management of antihypertensives. GHSC-PSM reviewed the national medicines list, standard treatment guidelines, financing mechanisms, and logistics management information system (LMIS) data to identify supply chain related barriers that may impact antihypertensive availability, then shared results with key government and partner stakeholders. Once the stakeholders have thoroughly reviewed the findings, GHSC-PSM will co-develop an action plan to improve the management of antihypertensive commodities for use during pregnancy in Ghana.

Validating revised RMNCH commodity forecasting guidance

Under the United Nations Commission on Life-Saving Commodities for Women and Children, a group of experts developed forecasting guidance for high-priority essential reproductive, maternal, newborn, and child health (RMNCH) commodities. In FY 2020, the Medicines, Technologies, and Pharmaceutical Services (MTaPS) project revised the guidance with GHSC-PSM support, to include additional maternal health commodities in line with recent changes in WHO recommendations. By the end of Q3 FY 2021, GHSC-PSM completed the validation of the updated RMNCH guidance by using it during quantification exercises in Ethiopia, Ghana, Nepal, Nigeria, and Pakistan.

- In March 2021, the Ghana team validated the updated RMNCH forecasting document during their family planning quantification.
- In April 2021, the Nigeria team validated the document during their MNCH quantification exercises in three project-supported states.
- In April 2021, the Nepal team validated the document during their quantification exercises for newborn and child health commodities.

- In May 2021, the Pakistan team validated the document during their MNCH quantification in one project-supported province.
- In June 2021, the Ethiopia team validated the document during their MNCH quantification exercises.

Supporting international and regional MNCH supply chain groups

In Q3, GHSC-PSM participated in the RHSC annual meeting and supported the initial stage of 2021-25 work planning for the Maternal Health Supply Caucus. In addition to the RHSC annual meeting, GHSC-PSM continues to support the Maternal Health Supplies Caucus through participation in ongoing meetings to discuss MNCH commodity challenges, innovations, and lessons learned. Also in Q3, GHSC-PSM participated in a meeting of partners to provide feedback on a Newborn Essential Solutions and Technologies (NEST 360) and UNICEF toolkit that brings together knowledge, experiences, resources, and best practices for implementing small and sick newborn care services. GHSC-PSM will continue to participate in this working group and relevant sub-working groups to provide expert input on the toolkit.

Helping countries adapt to address COVID-19 challenges

Ensuring MNCH commodity availability. Since the initial outbreak of COVID-19, health supply chains in GHSC-PSM countries needed to adjust to new demands, including changes in patient consumption, upstream supply shocks and the need to ensure health care workers' access to personal protective equipment (PPE). Maintaining MNCH services and commodity availability at health facilities remains critical to prevent suffering and potential deaths of women and children. COVID-19 also aggravated existing service delivery challenges and prompted a need for new and dynamic supply chain planning and operations. In FY 2021, GHSC-PSM released a new technical resource, *Ensuring Maternal, Newborn and Child Health Commodity Availability During COVID-19*, in English and French to help countries address MNCH commodity challenges during COVID-19. In light of the Delta variant and COVID-19 resurgences, the project hosted a follow-up webinar in Q3 to highlight this technical resource and encourage sharing across TO4-supported countries. The webinar encouraged country teams to implement COVID-19 related activities that align with the resource in their FY 2022 work plans, including around forecasting and supply planning, community-based distribution, and alternative methods of commodity dispensing. The webinar also provided a platform for countries to share their experiences with the COVID-19 pandemic, including their MNCH supply chain challenges and the mitigation steps they have taken.

The project published this update on MNCH commodity prices and lead times in Q3.

Update on GHSC-PSM contract prices and lead times of select MNCH commodities. In January 2021, GHSC-PSM re-issued and negotiated contracts for MNCH essential commodities as part of its objective to increase availability of quality assured MNCH commodities in project-supported countries. Despite COVID-19 impacts on global supply and logistics, GHSC-PSM did not observe substantial disruptions in MNCH commodity availability, prices or lead times due to the pandemic. GHSC-PSM compared prices and lead times of select MNCH commodities in GHSC-PSM contracts negotiated before the pandemic and

recently negotiated prices and lead times in the document *GHSC-PSM contract prices and lead times of MNCH commodities*. The resource was published in Q3.

SUPPORT DATA-INFORMED HEALTH SUPPLY CHAIN DECISION MAKING FOR MNCH COMMODITIES

Conducting End-Use Verification surveys in project-supported countries

MNCH data and analytics within national LMISs are not always adequate to identify and resolve supply chain issues. As a result, 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 SDPs. EUV data collection is also an opportunity for GHSC-PSM country teams to provide on-site capacity building for SDP staff and Ministries of Health, gather supplemental qualitative data on reasons for stockouts, and cross-check LMIS data accuracy on stock availability trends. In Q3, GHSC-PSM submitted EUV reports for Burkina Faso, Ethiopia, Ghana, Mali and Nigeria.

Improving data analytics for MNCH commodity decision-making

Electronic LMIS platforms (eLMISs) help stakeholders analyze an array of national supply chain information. In FY 2020, GHSC-PSM conducted a data use survey in 15 countries and mapped the availability of MNCH commodity-related data across electronic and paper-based systems. Findings indicated that countries often face the time-consuming challenge of manually entering, consolidating, and analyzing logistics data. These challenges often delay decision-making and response to supply chain challenges.

In FY 2021, GHSC-PSM conducted focus groups in 15 countries[15] that receive MNCH support to identify common MNCH commodity management decisions and the corresponding analytics tools countries use to inform them. GHSC-PSM used the country teams' inputs to design a Power BI data catalog of adaptable and robust data tools used. The catalog describes each tool, the platform it uses, the data it requires to function, and a point of contact for the tool. This catalog will be especially helpful to countries with nascent eLMIS systems, providing a blueprint for what works. In Q3, the project hosted a data use webinar to formally launch the data catalog and encourage country teams to invest in new tools for future GHSC-PSM activities. In June, the project launched a survey to gather country teams' feedback on the usefulness of the catalog. Feedback from the survey will be used to improve, adapt, and add additional tools to the catalog as needed.

[15] GHSC-PSM convened 15 project-supported countries to collect data tools information: Burkina Faso, Ethiopia, Ghana, Guinea, Haiti, Kenya, Liberia, Malawi, Mali, Mozambique, Nepal, Nigeria, Pakistan, Rwanda, and Zambia.

IMPROVE ADHERENCE TO GLOBALLY RECOGNIZED MNCH COMMODITY QUALITY STANDARDS

Systems strengthening technical assistance

GHSC-PSM provided MNCH systems strengthening support to increase access to quality assured MNCH commodities to 20 countries[16] in Q3. Specific country achievements are described below.

COVAX support funneled through MNCH work in Ghana and Guinea. In Q3, both countries received funds from the USG through the COVID-19 Vaccines Global Access (COVAX) initiative for technical assistance to support COVID-19 vaccine distribution. These funds are managed by GHSC-PSM's maternal and child health task order. In Ghana, the funds will go toward improving electronic systems for vaccine inventory management, strengthening human resource capacity, and strengthening last mile delivery support. In Guinea, the funds will support the COVAX logistics working group—which is responsible for vaccine allocation and distribution—and go toward technical assistance to the Ministry of Health for vaccine forecasting and supply plan reviews, inventory management, distribution planning and tracking. They will also go toward optimizing existing stock management and health information systems and integrating COVID-19 vaccine data. Both countries are in the beginning stages of implementing these activities—primarily initiating partnerships and finalizing statements of work.

Ethiopia supports maternal health during COVID-19. Ethiopia's public health system, like many others, has experienced challenges with commodity availability and service delivery during the COVID-19 pandemic. Antenatal care, facility-based births, and other MNCH services were reduced at the beginning of the pandemic and during periods of rising COVID-19 cases. Procurement and availability of MNCH commodities were also affected by lockdowns in sourcing countries, reduced production capacity of local suppliers, and public health system financial constraints. GHSC-PSM worked closely with the Government of Ethiopia to analyze and address these challenges and ensure continuation of MNCH services during COVID-19 by:

- Co-creating interim guidance with the MOH to ensure continuation of MNCH services in the context of COVID-19
- Monitoring and analyses to inform public health supply chain strategy (e.g., financial gap analysis for funding mobilization and bi-weekly upstream and downstream stock risk analysis)
- Communicating potential risks and designing actions for the MOH and Ethiopia Pharmaceuticals Supply Agency (EPSA) to mitigate risks
- Increasing and streamlining communication across agencies and decision makers (i.e., escalating approval issues to EPSA and MOH management, creating virtual coordination platforms)
- Helping advocate for resource mobilization to address financial gaps for MNCH commodities
- Initiating alternative international sourcing strategies to mitigate local supplier challenges
- Expediting shipments and clearance processes
- Moving more MNCH commodities down the supply chain to health facilities to prevent further transportation-related disruptions (e.g., road blockages and lockdowns)

[16] GHSC-PSM provided MNCH technical assistance to 20 countries in Q3 FY2021: Burkina Faso, El Salvador, Ethiopia, Ghana, Guatemala, Guinea, Haiti, Honduras, Liberia, Madagascar, Malawi, Mali, Mozambique, Nepal, Nicaragua, Nigeria, Pakistan, Panama, Rwanda, and Zambia.

With these actions, the MNCH supply chain in Ethiopia continues to provide MNCH commodities despite COVID-19 challenges and by Q3 FY 2021, stockouts of MNCH commodities were lower than before the pandemic.

Nigeria Drug Revolving Fund (DRF). GHSC-PSM in Nigeria works in three states—Bauchi, Kebbi, and Sokoto—to strengthen their technical and financial capacity to manage MNCH commodities. To this end, the project is working to establish functional DRFs in collaboration with these local governments. The DRF ensures a steady supply of essential MNCH commodities through the sustainable management and financing of procurement, storage, distribution, and monitoring of those commodities.

Staff members posed as GHSC-PSM in Nigeria launched the Bauchi State drug revolving fund to ensure sustainable financing and supply of essential MNCH commodities. *Photo credit: GHSC-PSM/Anthony Abu*

In Q3, after months of coordination and preliminary work, the Bauchi State DRF launched with a handover of close to $900,000 of MNCH seedstock commodities from the USG. Last quarter, the project verified three state warehouse upgrades conducted by the Bauchi government. With these upgrades and the now-completed installation and use of a warehouse management system in Bauchi, the state will be more prepared to manage the DRF commodities and save the lives of thousands of women and young children.

CONDUCT AD HOC STRATEGIC PROCUREMENT TO INCREASE AVAILABILITY OF QUALITY ASSURED MNCH COMMODITIES

GHSC-PSM supported procurement of MNCH commodities for twelve countries[17] in Q3, including the initiation of new orders of essential medicines and consumables for the Drug Revolving Fund in Nigeria. The project also began sourcing for a range of priority newborn and child health products including amoxicillin, gentamicin, oral rehydration salts (ORS), and chlorhexidine for use in Liberia, Mozambique, and Zambia.

[17] GHSC-PSM procured MNCH commodities for 12 countries in Q3 FY2021: Bangladesh, Congo DRC, Ghana, Haiti, Liberia, Madagascar, Malawi, Mali, Mozambique, Nigeria, Rwanda, and Zambia

PROGRESS BY OBJECTIVE

C1. GLOBAL COMMODITY PROCUREMENT AND LOGISTICS

Procured $129 million in health commodities in Q3. Total values for the life of the project are over **$3.8 billion**.

Delivered 1,637 line-item orders in Q3, with a value of **$275.3 million**.

Delivered 90 percent (84 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 84 percent (75 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 this quarter in order to appropriately manage the impact of COVID-19 on global supply chains:

1. Maintain on-time deliveries.
2. Balance price, delivery, and quality to achieve the best value.
3. Reduce response/cycle times, lead times, and transaction costs.

In Q3, 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 by focusing on performance and managing overall commodity and supply chain costs through the following initiatives:

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

GHSC-PSM works across project teams and external stakeholders to understand markets for the medicines and other health commodities that 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, uses best sourcing practices, contributes to process improvements, and negotiates and proactively manages contracts with suppliers. 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 Q3, GHSC-PSM conducted business reviews with more than 30 key suppliers while proactively managing operations affected by the market, supply chain, and logistics factors, including the continuing impacts of COVID-19. Supplier meetings update the project on the impact of regional shutdowns, logistical challenges, and other issues for production and delivery schedules, while commodity and supplier risk profiles inform performance assessments and order allocation strategies.

Regional Distribution Center (RDC) operations
The second third-party led inventory count in an RDC took place in Q3 at the South Africa RDC. The activity found 100 percent inventory accuracy in the total quantity between the system and the physical count and only a 0.003 percent discrepancy in the verified locations; GHSC-PSM later corrected this discrepancy. The project expects to conduct a similar activity at the Belgium RDC in Q4.

DECENTRALIZED PROCUREMENT (DCP)

In Q3, GHSC-PSM managed a large volume of orders through DCP. The project had 90 percent OTD for the quarter; however, many DCP commodity types remain adversely affected by global supply shortages, logistics constraints, and disruptions to the supply chain driven by COVID-19. Examples of issues and solutions include:

- **VL/EID supply.** GHSC-PSM held strategic supplier relationship management meetings with key VL and laboratory suppliers to understand and communicate supply constraints expected to persist during FY 2021. These constraints are anticipated through Q4 for reagents and consumables, placing several vital components on allocation and extending production lead times for several commodity categories. These constraints are creating commodity security challenges across the portfolio of supported countries, including Zambia.

- **Standardization of Dried Blood Spot (DBS) kits.** During the reporting period, the project refreshed RFQs for the new standardized DBS kits set for procurement in Q1 FY 2022. This included strategic engagement with USAID and DBS kitters, resulting in improved pricing and a detailed understanding of the price composition of these kits. Further discussions, primarily around quality, are ongoing, and the project expects that at least two DBS kit suppliers will be approved for procurement by the beginning of Q1 FY 2022.

- **Noteworthy country-specific import/export requirements managed by DCP include:**

    - ***Mozambique - New Import Authorization Process.*** In Q3, the Mozambique national directorate of pharmacy introduced a requirement for in-country registration of lab tests, reagents and consumables. All distributors and manufacturers must request a special import authorization for approval on a case-by-case basis. Additionally, the vendors must apply for BIEF (Boletim de Importação de Especialidade Farmacéutica). This application takes about four weeks to process after obtaining the special import

authorization. This requirement affected several purchase orders (POs) whose delivery dates had to be revised to accommodate the time requirements needed to comply with this new importation regime.

- ***EU export regulations – CEPHEID.*** The new EU customs regulations—in effect as of January 2021—prevent companies established outside of the EU from acting as EU exporters. This presents a challenge for the DCP supplier Cepheid HBDC to ship orders from the EU under the EXW incoterm, affecting several POs pending delivery. GHSC-PSM amended the affected POs and SPAs from EXWs to FCA incoterm.

GLOBAL STANDARDS

GHSC-PSM implemented procurement requirements for pharmaceutical, medical device, sterile kit, laboratory reagent, and LLIN suppliers to adopt standardized identification, labeling and exchange product master data leveraging GS1 standards. These supplier requirements include:

- Assigning Global Trade Item Numbers (GTINs) that identify trade items and Global Location Numbers (GLNs) that identify business entities and locations;
- Labeling specified packaging levels with barcodes encoded with the GTIN, batch/lot, and expiration date;
- Exchanging master data through the Global Data Synchronization Network (GDSN).

Significant supplier progress in the implementation of these requirements took place in FY 2021, laying the groundwork to operationalize this data in global and national supply chain processes and systems. Advancing supplier compliance requires regular supplier engagement for both existing and new items. In Q3, through this ongoing engagement with suppliers, the project:

- Collected, validated, and added GTINs for 94 items to the GHSC-PSM catalog, resulting in the addition of GTINs for 446 items in the GHSC-PSM catalog to date in FY 2021.
- Sent and received more than 2,700 GDSN messages, including master data for 132 new items. A total of 601 new items have had GDSN master data added in the fiscal year to date.
- Received new GDSN data from 29 different suppliers. Overall, 78 percent of suppliers required to synchronize GDSN data had done so for at least one in-scope item by the end of Q3.

In Q3, the project pursued several activities targeted at addressing common roadblocks to success with master data synchronization GDSN, including:

- Releasing "LearnBite" videos to address common supplier questions and concerns, including common attribute-specific questions and how to interpret feedback messages sent through the GDSN;
- Conducting a supplier webinar to share best practices for GDSN synchronization and provide an overview of available resources. Over 70 individuals attended the webinar.

The project also created several new resources for other audiences, including:

- A set of posters detailing GHSC-PSM's barcoding requirements for pharmaceuticals, medical devices, sterile kits, and reagents and LLINs;
- A technical brief detailing the process, results and lessons learned from developing standards-based requirements for LLINs.

Quality assurance (QA)

GHSC-PSM streamlines and optimizes quality assurance (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. In Q3, the project maintained communication flow, identified areas of mutual concern and ensured the incorporation of QA requirements into GHSC-PSM systems. Highlights this quarter include:

- Used the new SOP to manage recent recall incidents and emphasized collaboration across internal and external teams to expedite activities and ensure patient safety.
- Managed open quality incidents, continuously enforced and promoted prompt reporting of quality incidents and adherence to SOPs to ensure timely quality product distribution to the end-user.
- Continued working with Supplier Relationship Team to improve the QA scorecard matrix on the severity of quality incidents (i.e., OOS, Regulatory Body notices) used to assess supplier performance.
- Continuously looking for areas of improvement in QA processes, such as the development of incident triaging checklist, to ensure sufficient information for expedited GHSC-QA determinations.
- Worked with GHSC-QA to optimize consistency across GHSC-PSM Procurement and QA Eligibility Standards/Criteria for lab commodities.
- Worked collaboratively with GHSC-QA to provide input and support toward COVID-19–related commodity procurement.

QA for malaria commodities

GHSC-PSM modifies QA/QC protocols in response to COVID-19 and continues to develop a standard QA strategy built upon these modifications. The new strategy will be the standard operating practice for QA/QC activities to procure malaria prevention, diagnosis and treatment products.

The project participates in a working group that includes the Global Fund and UNICEF and WHO PQ to improve quality and QMS for LLINs. WHO PQ provided updates on past, current and upcoming quality assurance activities for the LLIN industry. The GHSC-PMS project and other global procurers advise WHO PQ on what changes in QA and QC processes they would like to see adopted by LLIN suppliers to improve the quality of the LLIN product. WHO provides procurers with guidance on QA/QC protocols to ensure quality assured products for clients.

The project completed method transfer for an ACT product and one method verification for a Sulfadoxine/pyrimethamine product at an additional laboratory. The project initiated a method transfer for an injectable to provide additional products that can be quality checked and monitored. The project also completed the RFP evaluation process for the LLIN testing laboratory and added an LLIN testing laboratory to the approved laboratories, creating more flexibility in testing options and lead times for LLINs. For more details see section B2: Malaria.

IMPACTS OF COVID-19 ON FREIGHT AND LOGISTICS

Origin challenges

Logistics challenges due to COVID-19 continued through Q3 and were exacerbated further by new "waves" of COVID-19 in various countries. Capacity constraints remained in effect for air freight, and pricing remained volatile—with rates held for a week or less, particularly in China. India struggled through a large wave of COVID-19 infections, prompting airlines to reduce service to and from India. Adverse weather throughout Asia also led to delays with the onset of the monsoon season. Repercussions from the recent Yantian port issues due to increased COVID-19 infections impacted global ocean shipping, resulting in significant port delays and congestion. Yantian is the third busiest gateway in the world so the reduction in working capacity to about 30 percent led to the doubling of loading dwell time and a tripling of discharge dwell times. This, in turn, led to changes in vessel schedules to omit this port entirely or amend schedules adding to already dire capacity constraints. The Suez blockage further disrupted the sailing schedules of vessels and caused container delays to their final destination for turnaround. These disruptions forced more cargo to move from ocean to air and added pressure on an already strapped market.

Airfreight

Reduced capacity alongside across the board rate fluctuations heavily impacted airfreight. Scheduling by the airlines remains ad hoc, resulting in reduced service on some lanes, backlogs, and price increases. The increase in COVID-19 cases in Q3, particularly in India, meant further delays to the return of passenger services from that origin. Freight services have increased on other major routes globally, but this has not improved pricing or lane scheduling. Carriers continue to cancel flights or lanes, requiring 3PLs to rebook, impacting the import duty waiver process. Pricing is valid on some lanes for no more than five to seven days, and 3PLs cannot secure rates until they have handed the cargo over to the airlines, which seek to increase rates.

Cold chain

Q3 brought little to no respite on cold chain shipments. Airlines' aversion to moving cold chain products due to liability concerns significantly increased in the current market with ad hoc flight schedules, congested airport facilities and skeletal ground handling crews. This presented an enormous challenge for frozen reagents that must be stored –20C and re-iced every two days. GHSC-PSM works with the 3PLs to evaluate risks on a case-by-case basis, weighing the cost of flying cargo versus potentially incurring high storage costs and damaging temperature-sensitive commodities if a flight is canceled.

Ocean freight

Shortages of all container types persisted in Q3 and global ocean shipping schedule reliability remains below 40 percent. This combination stretched 3PL container sourcing abilities and required increased flexibility in booking with carriers. Ripple effects on rates, shipping schedules and capacity from the Suez Canal blockage were felt in Q3, as expected. Yantian Port in Southern China saw COVID-19 cases lead to massive port congestion and will likely have a larger impact than the Suez block on vessel scheduling, container availability, and pricing in Q4.

Destination challenges

Haiti saw a resumption of civil unrest, affecting ocean freight leaving the port. Insecurity in Mali caused by a recent coup and a strike that closed civil offices is hampering logistics. Volcanoes in DRC and

Guatemala, monsoons in Asia and cyclones in Latin America and the Caribbean played some part in impacting already constrained flight options to destinations within these regions. This is in addition to the challenges of subsequent COVID-19 waves where country offices and 3PL teams are directly affected by COVID infections, such as in Nepal and Uganda.

C1B. PROJECT PERFORMANCE

In this section, we summarize findings on key indicators of global supply chain performance. More detail on these and other indicators in Annex A.

DELIVERY TIMELINESS

GHSC-PSM measures on-time delivery (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

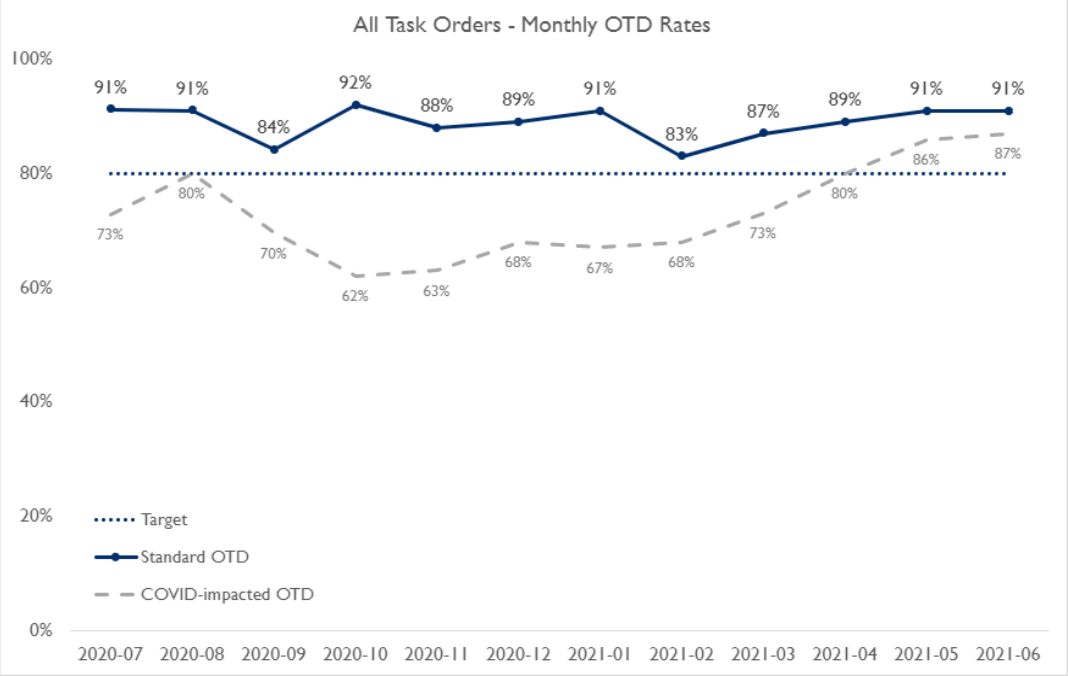
OTD is a more accurate reflection of recent performance, while OTIF is a lagging indicator as late orders due in prior periods get delivered.

In Q3, GHSC-PSM OTD was 90 percent (84 percent COVID-impacted) and OTIF 84 percent (75 percent COVID-impacted) for the quarter, the ninth successive quarter that OTD has been above 85 percent (see Exhibits 12 and 13).

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

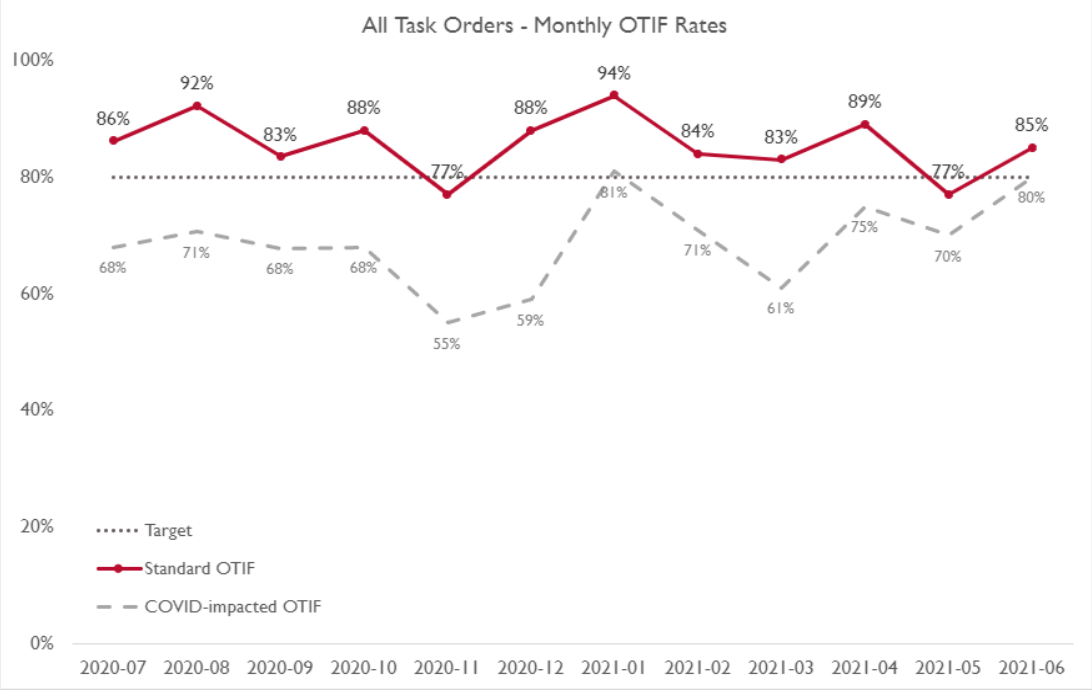
1. According to the indicator definition, the "standard" version is calculated as laid out in the project's monitoring and evaluation plan and following all associated policies.
2. The "COVID-19-impacted" version follows the same rules and definitions as the standard indicator but removed the "control"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

Exhibit 12. July 2020 through June 2021 monthly OTD



At the end of Q2 FY 2020, the number of COVID-impacted orders increased significantly and continued to adversely affect OTD throughout the past year. The high degree of uncertainty and the extreme volatility in global supply chains caused by the pandemic continued to affect a vast number of orders in Q3 FY 2021. This impact is expected to continue through Q4.

Exhibit 13. July 2020 through June 2021 monthly OTIF



C2. SYSTEMS STRENGTHENING TECHNICAL ASSISTANCE

Assisted 50 countries with health supply chain systems strengthening over the life of the project.

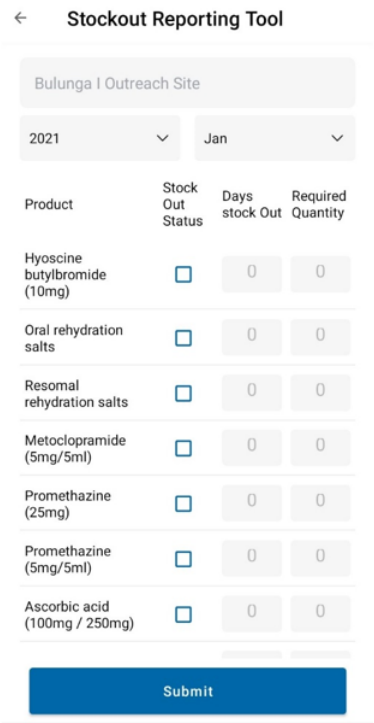
Provided **technical feedback on 166 supply plans this quarter** to strengthen national supply planning capabilities.

As part of a new technical series, **published a landmark technical document on contracting transportation to the private sector.**

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 health supply chain systems strengthening technical specialists work with in-country teams to define systems strengthening strategies that are appropriate to the local context and that can be realistically achieved. Emphasis is placed on automated data capture and real time end-to-end data visibility, pharmaceutical-grade infrastructure, and efficient distribution across countries. The project works with country stakeholders to ensure their supply chains are managed by supply chain professionals dedicated to quality improvement, and, where possible, collaborates on strategies to outsource functions to accountable private sector providers.

Despite the ongoing local and international travel restrictions to prevent COVID-19 transmission, GHSC-PSM continued to provide technical support across all program areas through various remote strategies, as well as some limited in-person activities.

In Eswatini, following the successful revision of the Standard Treatment Guidelines and Essential Medicines List of common medical conditions in Q2, GHSC-PSM supported the MOH in developing an electronic version of the guidelines. This new app is convenient for health care workers and includes extra functions such as a Stockout Reporting Tool, a Pharmacovigilance Reporting Tool and an Education section. It will also receive and notify users of urgent announcements, such as product recalls or vaccination campaigns. The project consulted key partners in developing the



GHSC-PSM turned Eswatini's Standard Treatment Guidelines and Essential Medicines List into a user-friendly smart phone app. *Photo Credit: GHSC-PSM*

app to ensure its usefulness and relevance for users. In Q4, GHSC-PSM will conduct user acceptance tests (virtually) on the App before final launch.

ADVANCED ANALYTICS

Advanced Analytics support aims to enable countries to expand use of data to support and facilitate decision making from day-to-day operational decisions to strategic decisions. Whenever possible, GHSC-PSM uses existing data resources, leveraging previous investments in management information systems to make data available immediately. Doing so can increase trust and confidence in the data by identifying reliable data and enabling its use for decision making. Moreover, advanced analytics automates processes to be repeatable to create a positive feedback loop for rapid data use. In Q3, GHSC-PSM continued this strategy, providing remote support to countries including Burundi, Ethiopia, Ghana, Haiti, Niger, Uganda, Zambia, and Zimbabwe.

In **Botswana**, GHSC-PSM conducted user acceptance testing and system administration training for staff of the central medical store and Ministry of Health and Wellness for a supply chain data analytics and visualization dashboard currently being developed and integrated into the Ministry's DHIS-2 platform. Botswana has multiple data management systems in the health sector that are offline and are not integrated. The use of a web-based dashboard is expected to improve use of data for decision making at all levels of the public health supply chain for stock redistribution, quantification, procurement, program monitoring, and budgeting.

In Ethiopia, where uneven implementation of MMD of ARVs and other factors has caused peaks and troughs in demand that can result in supply risks at health facilities, the project is leveraging three existing technologies to create solutions. GHSC-PSM began adapting the existing inventory analysis tool and Zambia's anomaly detection tool to support detection of supply chain issues and deployed Supply Chain-Facility-Level AIDS Commodity Tracking (SC-FACT), which is an initiative that the project utilizes to track monthly stock data in PEPFAR countries at all service delivery sites on HIV/AIDS health commodities, for facility name standardization to resolve master data issues in historical data (2017–2020). To reduce supply risks, this analysis will identify those health facilities with consistently unstable demand for targeted action. Finally, the analytics tool is designed to be a repeatable process that can be deployed again as needed.

Also in Ethiopia, GHSC-PSM is helping improve the use of KPIs at the Ethiopian Pharmaceuticals Supply Agency (ESPA). The project reviewed primary KPI data sources and processes to determine methods to improve the processes for calculating data and the presentation and visualization of KPI data for analysis and use. The project also worked to semi-automate KPI calculations to accelerate the availability of data to key decision makers in EPSA.

In Niger, GHSC-PSM used new and improved information about road networks and locations of delivery sites to update distribution routing analysis for revising the contract for 3PL services for distributing pharmaceuticals and LLINs. The analysis revealed opportunities and constraints in distribution design that informed revisions to 3PL contracting and will help manage expectations with key stakeholders.

In Zimbabwe, GHSC-PSM developed an algorithm for the correct forecasting of malaria commodity consumption at the site level and automated the algorithm into the existing reorder software (AutoOrder and Top Up software applications). In Q3, the project completed software development and testing for the algorithm and trained staff of the Ministry of Health and Child Care in the new software functionalities, which will be deployed in Q4. The new algorithm aims to correct historic stock imbalances for malaria commodities resulting from an inadequate forecast method based on average quarterly consumption.

ENIVRONMENTAL COMPLIANCE

In accordance with USAID's Environmental Procedures (22 CFR 216), the project supports implementation of the GHSC-PSM Initial Environmental Examination (IEE) and the Environmental Mitigation and Monitoring Plan (EMMP). Implementation of the IEE and EMMP includes multi-faceted services to staff globally, such as review of documents pertaining to USAID's 22 CFR 216 Agency Environmental Procedures, technical guidance, and direct technical assistance.

With the rise of COVAX technical assistance support during Q3, GHSC-PSM prepared a COVAX Waste Management technical brief to answer frequently asked questions and clarify the type of waste management technical support that the project can offer partner governments to manage the increased levels of waste generated by mass COVID-19 vaccination campaigns.

FORECASTING AND SUPPLY PLANNING

GHSC-PSM supported forecasting and supply planning (FASP) for 45 countries to help institutionalize processes so that countries move from relying on external technical support to developing their own fully integrated FASP capabilities.

After launching and piloting the new **Quantification Analytics Tool (QAT)** supply plan module in Q1, GHSC-PSM continued the rollout in Q3. QAT's supply planning module is a modernized solution for country-led quantification that leverages new technologies and that has enhanced features over the existing supply planning tool, PipeLine (and will eventually replace it). With an enhanced user interface and usability, greater analytical capabilities, and automated data exchange, this new tool enables program managers to optimize commodity procurement and delivery schedules, monitor the stock status of products, and share data with external platforms and key stakeholders. The table below shows the schedule of QAT trainings held/to be held with country offices. Most staff to be trained in FY 2021 are GHSC-PSM country office staff and GHSC-TA staff in Benin (pilot cohort) and Tanzania (cohort who will then support QAT adoption for in-country stakeholders).

Exhibit 14. Schedule of QAT trainings held/to be held with country offices.

	Country	Training
Pilot	Benin	Nov/Dec 2020
	Zimbabwe	Nov/Dec 2020
	Ethiopia	Nov/Dec 2020
	Botswana	Nov/Dec 2020
Cohort 1	Nigeria	Jan/Feb 2021
	Zambia	Jan/Feb 2021
	Burundi	Jan/Feb 2021
	Laos	Jan/Feb 2021
Cohort 2	**Haiti**	April 2021
	Burkina Faso	April 2021
	Cameroon	April 2021
	Mali	April 2021

	Country	Training
Cohort 3	eSwatini	May 2021
	Malawi	May 2021
	Sierra Leone	May 2021
	Angola	May 2021
	Ghana	May 2021
Cohort 4	**Rwanda**	Aug 2021
	Ghana	Aug 2021
	Tanzania	Aug 2021
	Uganda	Aug 2021
	Lesotho	Aug 2021

In Q3, the project conducted many all-remote QAT trainings, including:

- Cohort 2 (Burkina Faso**,** Cameroon, Haiti, and Mali): the GHSC-TA office in Benin co-facilitated training for Francophone countries.
- Cohort 3 (Angola, Eswatini, Ghana, Malawi, and Sierra Leone): this is the first cohort to include non-project staff from Eswatini and Sierra Leone. Each workshop is followed by targeted, program-specific technical assistance to help countries transition their PipeLine supply plans to QAT, i.e., onboarding. By the end of Q3, 38 supply plans were fully transitioned to QAT, and 22 were in process. See more about supply planning submissions in C2a. Project Performance.
- QAT viewer training for project staff and system users at USAID.
- QAT enhancements training for all cohort 0-3 users to orient them to changes since December 2020.

As QAT users are becoming more skilled, the rollout to local stakeholders also began in Q3, with the Zimbabwe program training staff at the Ministry of Health and Child Care, UNDP and UNFPA. Also, staff from the Burundi's HIV/AIDS, malaria, and reproductive health programs, central medical stores (CAMEBU) and the drug regulatory agency (ABREMA) were trained to serve as QAT data and report viewers as a first step to familiarize them with the new application ahead of a full training in the next fiscal year.

GLOBAL STANDARDS AND TRACEABILITY

GHSC-PSM provided technical support to nine countries in Q3—Botswana, Ghana, Liberia, Malawi, Namibia, Nigeria, Rwanda, Uganda and Zambia—to support adoption of GS1 standards for product identification, location identification, and data exchange. GHSC-PSM's support for implementation of 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. Adopting global standards can enable countries to reduce costs, enhance efficiency, and improve the availability of health commodities in their public health supply chains.

In Botswana, the project provided guidance to the Botswana Medicines Regulatory Authority (BoMRA) for instituting a governance body to oversee traceability implementation, including development of traceability steering committee terms of reference. Also, while Botswana's Medicines and Related Substance Regulation is under review for revisions, GHSC-PSM provided recommendations to incorporate requirements supportive of traceability. Currently, there is no legal instrument that mandates standards-based identification and labelling of pharmaceutical products distributed in Botswana.

In Ghana, the project supported the Ministry of Health, in partnership with GS1 Global and GS1 Ghana, to host a virtual Ghana National Pharmaceutical Traceability Vision and Strategy workshop with more than 60 participants. To adapt to the virtual environment, two separate workshops in February and May were held to develop the vision and strategy. GHSC-PSM supported inclusion of the resulting traceability vision statement, strategic objectives, intermediate results and roadmap into a draft Ghana Pharmaceutical Traceability Vision and Strategy document currently under review.

As the multi-sector stakeholders agreed, the implementation of pharmaceutical traceability policies, processes, and systems and adoption of global standards in Ghana prioritizes creating an environment to:

- Address substandard and falsified product detected in the legal supply chain
- Improve efficiency of inventory management and distribution
- Enable visibility into the location of products in the supply chain

Also, at the request of the Ministry of Health, GHSC-PSM helped update the Ghana Product Master Data File with global trade item numbers (GTINs) for 37 commodities that GHSC-PSM has procured.

In Namibia, GHSC-PSM supported the development of a traceability task team led by the Ministry of Health and Social Services (MoHSS) with representatives of the central medical stores, Namibia Medicines Regulatory Council (NMRC), National Barcode Center and GHSC-PSM. The first task for the group will be to plan and hold a workshop to develop Namibia's National Pharmaceutical Traceability Vision and Strategy.

In Nigeria, GHSC-PSM is supporting the National Agency for Food & Drug Administration & Control to implement a national product catalog (NPC). Phase 1 of the NPC development centers on donor-procured commodities and two to three private sector groups. Initial product master data reviews

began, focused on warehouses with donor procured commodities. A master data management training for key stakeholders is scheduled for July 2021.

In Rwanda, new political appointees are in place at key positions at the Rwanda Food and Drug Administration (RFDA) and MOH. GHSC-PSM held three refresher training sessions for 25 people--including the new key personnel--to enable policy review and approval, focusing on GS1 foundations, product master data management, and enabling traceability through implementation of GS1 health care standards. Also, GHSC-PSM supported drafting and refinement of three policy documents: Traceability Regulation, Guideline for Identification and Labeling of Pharmaceutical Products, and Guideline for Product Master Data Sharing. The documents were with the government of Rwanda for review and adoption.

More information on standards adoption can be found in the Management Information Systems section below.

LABORATORY TECHNICAL SUPPORT

GHSC-PSM supports laboratory systems strengthening primarily for HIV/AIDS and TB programs. Areas of focus include viral load testing, forecasting and supply planning, and laboratory network optimization. Several countries—including Botswana, Lesotho, and Uganda —are leveraging viral load referral systems to support transport of COVID-19 samples for testing. Through use of historical procurement data, forecast data, instrument coverage, utilization rates, and GPS data, the Opti-Dx web-based tool guides appropriate laboratory instrument selection. For more information, see Section B1. HIV/AIDS and Annex A. COVID-19 Response.

LEADERSHIP AND GOVERNANCE

With GHSC-PSM support, countries aim to achieve a responsive health supply chain system led by a strong national team with managerial capacity, institutionalized checks and balances, robust governance oversight, open civil society engagement, and cost-effective and transparent financing mechanisms.

This quarter, the project continued developing a new series of technical documents aimed at providing Ministries of Health and other key supply chain actors with information and tools to help build the capacity of health supply chains.

- **Contracting transportation to the private sector.** In many countries, central medical stores, Ministries of Health and others responsible for public health supply chain management may choose to outsource transportation to private-sector service providers. GHSC-PSM published a new document,[18] "Contracting for Transportation of Public Health Commodities to the Private Sector," that serves as a guide for private-sector contracting, examines the reasons for doing so, describes different options, and explains the potential benefits and challenges of each option. Readers will find it useful in making the right decisions, understanding better the contracting process, and how strategic planning for contracting can help ensure satisfactory

[18] https://www.ghsupplychain.org/index.php/contracting-transportation-public-health-commodities-private-sector

vendor performance and even save money. Examples from Angola, Cambodia, Ghana, Malawi, Mozambique, and South Africa illustrate key points. Annexes include a sample scope of work, deliverables schedule, requests for proposals, key performance indicators and other tools. This document will also be part of the Africa Resource Center's (ARC) outsourcing toolkit[19].

In Guinea, the Ministry of Health's National Directorate of Pharmacy and Medicines and GHSC-PSM held a workshop with 27 representatives of various government agencies, partner organizations, USAID, and WHO as continuing follow up to implementing a law passed in June 2018 to strengthen the pharmaceutical sector and reduce the incidence of substandard and illegal drugs. Participants finalized the development of 39 policies and regulations for the application of the pharmaceutical law, including a draft decree for the creation of the National Agency for Pharmaceutical Regulation (ANRP). The actions taken during the workshop add to the 23 policies and regulations already developed and contribute to strengthening and enforcing the law to ensure a safe supply of medicines and health products—including in remote and rural areas—and to regulate the pharmacy profession in the public and private sectors.

In Rwanda, Rwanda Medical Supply Ltd (RMS) collaborated with GHSC-PSM to develop a strategic plan for 2021–2026 for this new agency created by the Ministry of Health to ensure sustainable access to effective, affordable, and safe medicines and health technologies. A government-owned entity with legal and financial autonomy, RMS has replaced the former Medical Procurement and Production Division. The plan will help RMS to attain full data visibility and integrate procurement, inventory, and finance operations and processes.

MANAGEMENT INFORMATION SYSTEMS

GHSC-PSM supports country programs in enhancing the functionalities and capabilities of their electronic logistics management information systems (eLMIS), warehouse management information systems (WMS), and other digital systems by reviewing system requirements, supporting procurement and contract negotiation, and monitoring operation and performance.

Another key system is the Supply Chain Information System Maturity Model (SCISMM) that the project uses to assess the maturity of information systems and then provide targeted recommendations for strengthening the management information system to improve supply chain operation and data quality. The project completed enhancement of SCISMM v2.0 for use in Q3.

GHSC-PSM provides system interoperability recommendations to integrate existing information systems to establish a single data source that is current and accurate for all relevant partners. A key component of this support is the use of an online national product catalog (NPC) that facilitates the adoption of standardized product information, thereby eliminating the need for manual interventions to keep all supply chain partners aligned.

In Burkina Faso, GHSC-PSM trained 24 newly hired pharmacists at the Ministry of Health Pharmaceutical Policy Department on LMIS standard operating procedures, including data reporting,

[19] https://www.ostkonline.com/ostkv1-0/about/

determining order quantities, and inventory management. These new pharmacists are responsible for providing guidance to those managing commodities in the districts they support.

In Malawi, GHSC-PSM supported the MOH in scaling up OpenLMIS to 100 additional facilities and piloting the OpenLMIS Stock Management Module in eight districts as part of ongoing efforts to strengthen MOH capacity in OpenLMIS expansion, its management, and use. This expansion is expected to improve data tracking, reporting, and ordering of public health commodities. The project conducted a SCISSM assessment and briefed the MOH and USAID Mission on key findings as part of planned technical support for developing and implementing a digital supply chain strategy and architecture for end-to-end visibility of public health commodities.

In **Nigeria**, in support of the National Agency for Food and Drug Administration and Control (NAFDAC) five-year traceability plan, GHSC-PSM is supporting development of a national product catalogue by launching a master data management assessment across different stakeholders in the public and private sectors. GHSC-PSM also continued to work with NAFDAC through the Policy and Regulations Technical Working Group to update current product labeling guidelines to incorporate GS1 standards for product labeling and identification and master data standards.

WAREHOUSING AND DISTRIBUTION

GHSC-PSM improves warehousing and distribution systems in more than 25 countries. As part of this work, the project aims to move countries from a warehousing to a distribution center model that promotes more frequent stock turnover and requires changes in infrastructure and processes. Interventions include improving data-driven decision making across the supply chain, optimizing distribution networks, and increasing efficiencies in warehousing and distribution operations.

- **3PL subcontracting.** GHSC-PSM develops SOPs and helps modify requests for quotes (RFQs) and 3PL subcontracts for various country programs, aiming to improve distribution and storage practices. Several countries are following Angola's contract mechanism for both pharmaceutical and LLIN distribution, where a multi-award indefinite quantity service (IQS) contract is intended to pre-qualify suppliers who then compete for each distribution action through requests for task order proposals (RFTOPs). By including KPIs in each RFTOP, the mechanism is projected to produce higher and more measurable performance improvements. This approach has already shown cost savings of about 30 percent in Angola. The project produced a draft generic template based on the Angola model for potential use in any USAID-supported country, with an emphasis on transitioning from transaction-based contracting to performance-based logistics. The draft contract template includes commercial supply chain KPIs to measure and monitor 3PL performance. Countries that have included KPIs in their RFPs for upcoming contract modifications or renewals are Ghana, Kenya, Mali, Niger, and Uganda. GHSC-PSM revised the contractual language to ensure the project is measuring appropriate activities to reduce or eliminate risk. The draft contract was under review for finalization.
- **Temperature and humidity monitoring.** GHSC-PSM collects data from temperature and humidity data loggers installed in Burkina Faso, Cameroon, Ghana, Guinea, Haiti, Mozambique, and Zimbabwe.

- **Transportation information tool (TransIT).** TransIT is an electronic tool that transmits real-time proof of delivery from receiving locations to the main database for easy access. In Lesotho, GHSC-PSM implemented completely remote training sessions for drivers, dispatch staff, and other warehouse personnel. The project finalized the interface between the warehouse management system (WMS) and TransIT database and continued to work to align the master data to improve effective use of the tool.

In Zambia, GHSC-PSM delivered to the Zambia Medicines and Medical Supplies Agency (ZAMMSA) an integrated volumetrics system that provides complete and accurate dimensional and weight data for commodities flowing through ZAMMSA. Gathering data with the new equipment eliminates errors from manual data entry and protects data integrity at the central warehouse in Lusaka. Once captured, the dimensional data is easily transferred to the warehouse management system, where it can be used immediately for route planning and vehicle utilization. The data captured increases ZAMMSA's ability to plan and use available resources. The system also helps determine shipping costs per dimensional weight for each product; this information is key to determining the total cost of services ZAMMSA provides to its clients within the public health supply chain.

The new equipment provides ZAMMSA with accurate dimensions and weight for all packaging types, from shipping cartons to single units given to patients. Armed with this highly accurate volumetrics data, ZAMMSA can now build accurate pallet configurations while preparing shipments for delivery, ensuring that all outbound trucks are filled efficiently. This, in turn, reduces the cost of transportation. ZAMMSA is now in the process of documenting volumetrics for all commodities, starting with a prioritized list of 100 products that are distributed most frequently throughout the supply chain. The captured volumetrics data can also link to other tools, including the advanced analytics hub capacity tool that supports distribution planning. ZAMMSA is currently collecting data to assess increased productivity and efficiency in storage and distribution due to the availability of the equipment and expects to complete this activity in early September 2021.

This technology is also in use in Ethiopia and integrates with GHSC-PSM's dynamic routing tool. Dynamic routing optimizes last-mile delivery routes by maximizing truck capacity use, reducing transportation and labor costs and time on the road delivering products.

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 this quarter to Botswana, Burkina Faso, Ethiopia, Liberia, Rwanda, Zambia, and Zimbabwe.

The project conducted the USAID course on Introduction to Supply Chain Management in May after modifying the face-to-face training content from eight hours daily for a week to two hours daily for two weeks. In attendance were 35 USAID staff and one project staff. With the exception of two participants who had conflicting priorities, all fully completed the course. The project also documented feedback from participants to make improvements for the next virtual course.

In June, GHSC-PSM partnered with People that Deliver (PtD) to hold a webinar[20] to launch the PtD Supply Chain Management Professionalization Framework. Because of an aggressive marketing plan coordinated between the two organizations, 135 of 435 who registered attended with representation from every continent. Many people who register for webinars do so knowing they won't attend the live event but instead want to receive the recording for later viewing. GHSC-PSM staff facilitated the webinar, and another staff member from Rwanda presented on progress to date.

In Angola, GHSC-PSM supported curriculum development, training and graduation of 28 students (20 women and eight men) on the first edition of a postgraduate specialization course in integrated management of the health supply chain. These program graduates were the first group of professionals in the Angola public health sector formally trained and certified in technical supply chain skills and best practices, strengthening the national health workforce and laying the groundwork for improved supply chain infrastructure to support HIV/AIDS, malaria, FP and other health programs.

In Guinea, GHSC-PSM partnered with the MOH, National Malaria Control Program and National Directorate of Family Health and Nutrition to conduct targeted supervision on the management of health products at 63 health facilities in the eight health regions to monitor the management of antimalarial and FP/RH products and evaluate data quality. Targeted supervision, unlike routine supervision, considers epidemiological and programmatic aspects of the national supply chain system and uses a standard tool to determine the quality of human resources, conditions of service, management of information, adherence to procedures, and management of expired and unusable products. Overall, management of antimalarial product performance was rated at 76 percent and case management performance was 75 percent. The performance management rate for FP/RH products was 72 percent. Despite the relatively good performance, the targeted supervision identified various areas for improvement, and supervision teams worked with health facilities to develop problem resolution plans to improve the quality of services and sustainability of interventions.

In Mali, GHSC-PSM, the National Malaria Control Program (PNLP), and Population Services International (PSI) organized supervision of the management of malaria prevention, diagnostic and treatment commodities in 41 health facilities in the regions of Gao, Kayes, Koulikoro, Mopti, Ségou, Sikasso, and Tombouctou and the Bamako District. Carried out through cost sharing with PSI, this initiative was the first time that PNLP and GHSC-PSM conducted a joint supervision of malaria programs focused on supply management. It highlighted certain challenges in stock management, including that quantities ordered by health facilities did not always reflect actual needs and that quantities prescribed did not always match quantities dispensed to patients. It also highlighted that many health facilities give antimalarials without a confirmatory text. Those responsible for operational monitoring will follow up on GHSC-PSM's recommendations by further evaluating the health facilities.

In Rwanda, GHSC-PSM began implementing the PtD Supply Chain Management Professionalization Framework with the MOH serving as sponsor, the Regional Centre of Excellence for Vaccines Immunization and Health Supply Chain Management serving as in-country representative, and GHSC-PSM serving as coach. Following COVID-19 restrictions amidst an increase in cases, 20 participants from various organizations and constituencies attended a stakeholder analysis workshop to determine the

[20] https://youtu.be/B_1M2pqhsPQ

scope of the implementation approach for completing Phases 1 and 2 and to begin developing a project charter.

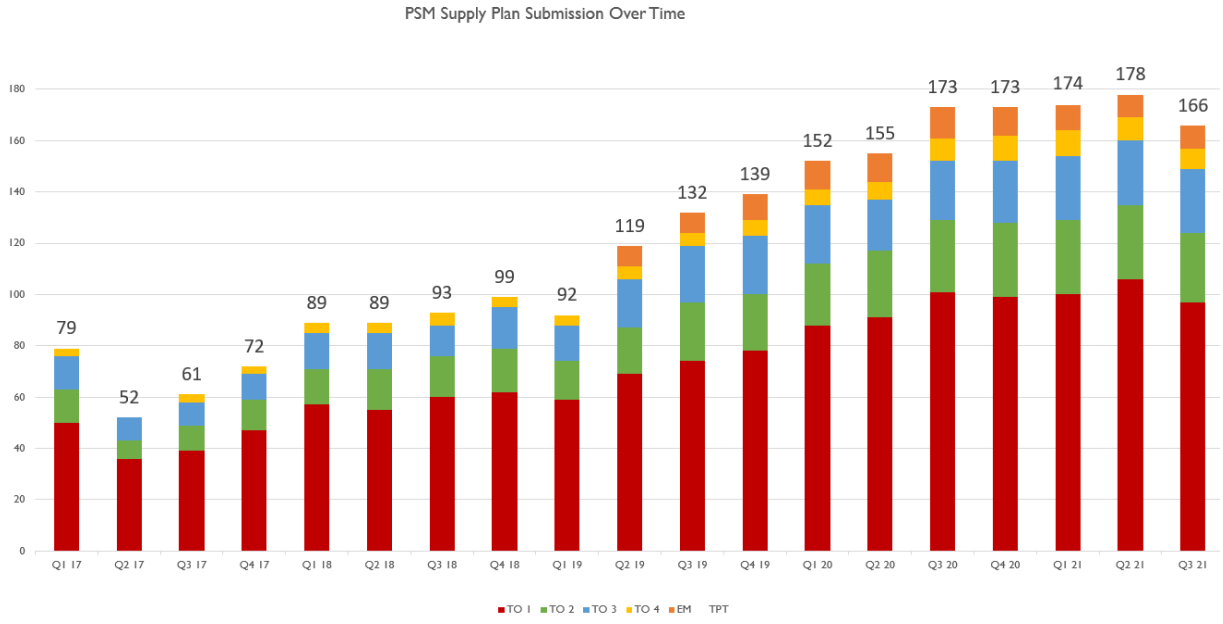
C2A. PROJECT PERFORMANCE

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 supply chain 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 adoption of the quarterly supply planning paradigm. In Q3, the project received 166 supply plans from 37 different countries. Of those, 139 were Priority 1 (required by USAID) supply plans, keeping the submission rate for this category above 90 percent (139 out of 151 submitted or 92 percent). Exhibit 15 shows the number of supply plans received by quarter and task order since Q1 FY 2017. In Q3 FY 2021, all 17 countries trained in cohorts 0 through 3 submitted at least one supply plan through the QAT.

Exhibit 15. GHSC-PSM supply plan submissions over time



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

GHSC-PSM monitors supply plans quarterly to identify common errors and omissions across countries or commodity categories, to assess results from earlier improvement efforts, and to identify areas for additional guidance and mentoring. The quality of the plans is assessed against 16 criteria, with the reviews generating actionable recommendations for improvement. The supply plan reviews identify issues with future orders, enabling country offices to take pre-emptive actions to minimize impact.

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 4,224 individuals in Q3 (1,733 women and 2,491 men).

Most trainings were cross-cutting and addressed topics relevant to multiple health areas. By funding source, 33 percent were trained with HIV/AIDS funding; 22 percent with malaria funding; 12 percent with FP/RH funding; and 33 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

In Q3, GHSC-PSM supported onboarding 25 countries to the Global Family Planning Visibility and Analytics Network (GFPVAN) basic country viewer roles as part of the transition from the Procurement Planning Monitoring Report (PPMR). Users include members of Ministries of Health, USAID Mission and UNFPA staff, and implementing partners.

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

GHSC-PSM engages with other global players to promote the availability of medicines and commodities. The project does this by providing supply-chain expertise to important global fora, working with international partners to allocate scarce supply, promoting harmonization of standards and practices, and managing commodity stock information as a global good. Our contributions are recapped below.

In Q3, GHSC-PSM attended the RHSC's two-day virtual "minka" (named after the Andean tradition of community work), to inform the development of the RHSC work plan from 2021 to 2025. RHSC organized discussions around the three outputs of the RHSC work plan: money, markets and movement. The project participated in discussions with working groups focused on developing activities

to support those outputs. Key themes include resilience, advocacy for supplies, and data visibility. Since the meeting, GHSC-PSM contributed to revising and finalizing these work plans.

MNCH global partnerships

Under the United Nations Commission on Life-Saving Commodities for Women and Children, a group of experts developed forecasting guidance for high-priority essential reproductive, maternal, newborn, and child health (RMNCH) commodities.

- In Q3, GHSC-PSM participated in the RHSC annual meeting and supported the initial stage of 2021–2025 work planning for the Maternal Health Supply Caucus. In addition to the RHSC annual meeting, GHSC-PSM continues to support the Maternal Health Supplies Caucus through participation in ongoing meetings to discuss MNCH commodity challenges, innovations and lessons learned.

- In FY 2020, the Medicines, Technologies, and Pharmaceutical Services (MTaPS) project revised the guidance with GHSC-PSM support, to include additional maternal health commodities in line with recent changes in WHO recommendations. By the end of Q3 FY 2021, GHSC-PSM completed the validation of the updated RMNCH guidance by using it during quantification exercises in Ethiopia, Ghana, Nepal, Nigeria and Pakistan.

- Also in Q3, GHSC-PSM participated in a meeting of partners to provide feedback on a Newborn Essential Solutions and Technologies (NEST 360) and UNICEF toolkit that brings together knowledge, experiences, resources and best practices for implementing small and sick newborn care services. GHSC-PSM will continue to participate in this working group and relevant sub-working groups to provide expert input on the toolkit.

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

SUPPLY-CHAIN COLLABORATION IN GLOBAL FORA

GHSC-PSM represents the supply-chain point of view in key global meetings and conferences to ensure that donors and governments consider the supply chain in program planning. Participation helps GHSC-PSM exchange information and stay current with emerging trends, market risks, and requirements to respond to global health commodity needs. By sharing project success stories and innovations in these collaborative spaces, the project promotes USAID's global leadership in supply chain commodities. In Q3, as described in Sections B1 through C1, GHSC-PSM participated in the following initiatives:

- GHSC-PSM published a new document, "Contracting for Transportation of Public Health Commodities to the Private Sector," that serves as a guide for private-sector contracting, examines the reasons for doing so, describes different options, and explains the potential benefits and challenges of each option. This document will be part of the Africa Resource Center (ARC)'s outsourcing toolkit.
- GHSC-PSM partnered with People that Deliver (PtD) to hold a webinar to launch the PtD Supply Chain Management Professionalization Framework. GHSC-PSM staff facilitated the webinar, and another from Rwanda presented on progress to date.

- The project has been a key participant in the KSM/API sub-working group[21] of the Malaria Pharma Task Force.[22] The group's purpose is to better understand the upstream market of malaria finished pharmaceutical products and to mitigate the risks in these active pharmaceutical ingredients and key starting materials. GHSC-PSM began leading the development of a tool for collective data capture and sharing, and is liaising with external stakeholders to drive analysis and investigation into specific drugs, molecules and associated risks. In Q3, the project initiated a collaborative deep-dive assessment of artesunate suppositories in response to persistent market challenges.
- The Global Donor Technical Working Group meets bi-weekly to coordinate actions and resolve problems with malaria commodity suppliers who cannot fulfill demands because of capacity constraints due to COVID-19.
- The project has discussions on LLIN quality and suppliers' QMS with the Global Fund and UNICEF, and invited WHO PQ to the working group with the goal of improving quality and QMS for LLINs. WHO provided updates on past, current and upcoming quality assurance activities for the LLIN industry. The project and global procurers advise WHO PQ on the assurances procurers required from LLIN suppliers, and WHO provides procurers with guidance on quality control protocols to ensure quality-assured products for the client.
- GHSC-PSM supports the Maternal Health Supplies Caucus through participation in ongoing meetings.
- GHSC-PSM participates in the global mRDT Task Force[23] and IRS/ITN Task Force[24], which meet bi-monthly.
- GHSC-PSM staff from across the project attended the Reproductive Health Supplies Coalition (RHSC)'s two-day virtual meeting to inform the development of the RHSC work plan from 2021 to 2025. RHSC organized discussions around the three outputs of the RHSC work plan: money, markets, and movement.
- GHSC-PSM serves as a key contributor in supporting strategic development and scale-up of the GFPVAN platform and processes. The project focused on realizing the benefits of the tool and supporting and onboarding users.
- The contraceptive PPMR database was officially retired after a successful transition of all PPMR data and processes into the GFPVAN, enabling global and country partners to benefit from more streamlined data entry, access to incoming order and shipment data linked to their inventory and consumption, and centralized collaboration.

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[21] KSM/API Working Group members include the Clinton Health Access Initiative (CHAI), Gates Foundation, GHSC-PSM, the Global Fund, Medicines for All Institute (M4ALL), Medicines for Malaria Venture (MMV), Maisha Meds, PATH, Unitaid, PMI, and the World Health Organization (WHO).

[22] Pharma Task Force members include the Asia Pacific Leaders Malaria Alliance Secretariat, CHAI, the Gates Foundation, GHSC-PSM, the Global Fund, Impact Malaria, the Malaria Consortium, MMV, Médecins Sans Frontières (MSF), Pan-American Health Organization, PATH, PMI, UNICEF and WHO.

[23] mRDT Task Force members include CHAI, Foundation for Innovative New Diagnostics, the Gates Foundation, the Global Fund, the Malaria Consortium, MSF, PATH, PMI, GHSC-PSM, United Nations Development Program, UNICEF, UNITAID, and WHO.

[24] ITN/IRS Task Force members include the Against Malaria Foundation (AMF), Clinton Health Access Initiative (CHAI), the Gates Foundation, GHSC-PSM, the Global Fund, Innovative Vector Control Consortium (IVCC), International Federation Red Cross (IFRC), Medicines for Malaria Venture (MMV), Médecins Sans Frontières (MSF), PMI, Population Services International (PSI), Results In Health, United Nations Children's Fund (UNICEF), UNITAID, and WHO.

- GHSC-PSM launched the 2021 round of the Contraceptive Security Indicators survey in Q3 in over 50 countries. In addition, GHSC-PSM updated its 2019 survey dashboard and landing page to reflect survey data recently collected in seven Latin American countries thanks to a partnership with the ForoLAC (Latin America and Caribbean) group of the RHSC.
- GHSC-PSM participated in the 2021 Co-Creation Workshop: Sharing Product Master Data, with Digital Square, GS1, and Village Reach. GHSC-PSM presented on the National Product Catalog (NPC) initiative implemented across Malawi and Rwanda.
- GHSC-PSM hosts 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.
- GHSC-PSM, in coordination with UNFPA, developed and finalized a joint green packaging scope of work exploring opportunities for greener, more environmentally friendly packaging of priority FP products.

COLLABORATION WITH OTHER USAID GHSC PROJECTS

GHSC-PSM is a member of the GHSC program family and regularly interacts 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. In Q2, the project worked with GHSC-QA to create a new compliance validation/audit process and pilot activities to collect more standards-based data as a part of existing procurement processes and resources documenting the impact of standards-based identification, labeling, and master data on the GHSC-PSM program to date. GHSC-PSM also worked with GHSC-QA to provide input and support toward COVID-19-related commodity procurement.

ANNEX A. COVID-19 RESPONSE

Delivered 30 Intensive Care Unit (ICU) beds and 35 patient vital sign monitors to hospitals in Italy's hardest-hit regions in Q3 FY2021.

Issued 71 ROs and 133 POs for diagnostic sample collection items, diagnostic tests, general patient care, laboratory consumables, PPE, pharmaceutical treatments, and sanitation **to 16 countries** by the end of Q3.

Delivered a total of 476,930 **lab commodity items valued at over $7 million to 16 countries** by the end of Q3.

In Q3 FY 2020, the U.S. Government, through USAID, requested that GHSC-PSM undertake new procurement activities with additional funding specifically to support the global COVID-19 response. In Q3 FY 2021, the project continued to work on the following global supply chain workstreams to manage and respond to COVID-19, including:

- COVID-specific country support for procurement from a list of 332 USAID and GHSC-QA–approved products
- Respiratory and cardiac supply procurement for Italy
- Ventilator support
- Oxygen procurement and technical assistance

The project also developed work plans and began providing technical assistance to several of its country offices in Q2 and Q3 for effective COVID-19 vaccine distribution through the COVID-19 Vaccines Global Access (COVAX) initiative. Efforts to ensure the supply chain can support large-scale vaccine distribution are underway 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.

COVID-SPECIFIC COUNTRY SUPPORT

Assuring commodity quality
In collaboration with the Global Health Supply Chain-Quality Assurance (GHSC-QA) project, GHSC-PSM provides QA support for COVID-19 activities.

Lab consumables procurement
GHSC-PSM received $12 million in USG funding to procure diagnostic sample collection items, diagnostic tests, general patient care commodities, laboratory consumables, pharmaceutical treatments (essential medicines) and PPE. By the end of Q3 FY 2021, USAID approved 71 requisition orders (ROs) that enabled GHSC-PSM to execute 133 purchase orders (POs) and deliver 476,930 items to 16 countries. During Q3 FY 2021, the project delivered 100,610 items with a value of over $1.7 million.

PROCUREMENT OF COVID EQUIPMENT FOR ITALY

Early in Q3, GHSC-PSM delivered 30 intensive care unit (ICU) beds and 35 patient vital sign monitors for hospitals selected by the USG and Government of Italy. The majority of planned deliveries to Italy (10 of 13 total) are now complete. Another delivery of patient monitors was delivered directly to Policlinico Hospital in Rome.

Ventilator support
Although all ventilator deliveries were completed in Q1, GHSC-PSM continued work on the program through Q3 by providing price estimates for supplementary purchases, new consumable procurements, and coordination with ventilator manufacturers and local service providers on service agreements for recipient countries.

OXYGEN

Procurement
As part of the global COVID-19 response, USAID is funding supplies of portable medical oxygen concentrators (low flow, low pressure and high flow, high pressure) and oxygen generation plants to provide a highly reliable and economic solution for oxygen requirements. These units deliver medical grade oxygen (93% +-3%) for use in hospital systems and disaster situations. Oxygen generation plants, in addition to direct supply to the hospital supply line (if available), are capable of filling cylinders to provide backup, peak, and remote oxygen requirements.

In Q3, GHSC-PSM's work on the USAID oxygen program continued apace. The project conducted a site visit of the Airsep production facility in Buffalo, New York to observe production of Pressure Swing Adsorption (PSA) plants; improve GHSC-PSM's understanding of Airsep's products, processes and management; and observe Factory Acceptance Testing (FAT) of completed units. By the end of Q3, 12 PSA plants earmarked for delivery to Afghanistan, Ghana, Mozambique and Tajikistan were being fabricated by Airsep. As of June 26, four PSA plants for Ghana were completed and shipped to the country by sea freight with an anticipated arrival date of late August 2021. Following a complex negotiation process the project also executed a basic ordering agreement (BOA) for the provision of two Vacuum Swing Adsorption (VSA) plants for Haiti.

Also in Q3, 205 Nuvo10 low flow, low pressure concentrators accompanied by their respective spare part kits arrived in Guatemala (70 units), Haiti (50 units), Honduras (70 units) and Mozambique (15 units). The 28 high flow, high pressure concentrators earmarked for Ghana are undergoing final assembly at the manufacturer facility.

GHSC-PSM fully executed purchase orders with wholesalers in Q3 for oxygen consumables and durables (i.e., commodities that support patient care) following two rounds of formal review with the USAID oxygen team and USAID Missions for seven countries. These POs included a total of 223 lines and seven pickup points across four countries and three suppliers.

Following a competitive procurement process and streamlined supplier eligibility review, GHSC-PSM coordinated closely with our quality assurance partner FHI360 to negotiate a BOA with a local supplier in Haiti for the provision of oxygen cylinder fills. This will allow health care facilities to fill their cylinders with much needed oxygen to support COVID-19 response in Haiti, where there is currently a significant uptick in COVID-19 cases. GHSC-PSM will kickstart cylinder fills in Haiti in Q4.

TECHNICAL ASSISTANCE

In Q3, GHSC-PSM continued its clinical and non-clinical technical assistance work to improve the oxygen ecosystem for the COVID-19 response in Afghanistan, Ghana, Guatemala, Haiti, Honduras, Kenya, Mozambique, and Tajikistan.

Following groundwork in Q2, all eight countries continued to identify qualified consultants, such as biomedical engineers, and initiated or completed facility assessments to inform the design of technical assistance in Q3. Each country is at a different stage of implementation given different country environments and contexts.

In Ghana, GHSC-PSM and its clinical partner are finalizing findings and recommendations following site visits and are developing training materials and workshops for users of the equipment.

As mentioned earlier, GHSC-PSM delivered 50 concentrators to 15 health facilities **in Haiti** in June. The project's support allowed for rapid delivery despite unanticipated changes to site locations and an expedited delivery timeline to address the urgent need for oxygen due to a COVID-19 surge. Before the delivery of the oxygen equipment, clinical partners conducted site visits to evaluate site preparedness and determine the level of training required to use and maintain the equipment and adequately treat COVID-19 patients requiring oxygen. Clinical partners are also developing a training curriculum for concentrator recipients on the essentials of safe use and maintenance.

In Honduras and Kenya, the project began site assessments and identified facilities that will receive oxygen equipment in Q3. **In Mozambique**, site visits were also completed and GHSC-PSM is conducting an oxygen landscape assessment to identify existing resources and gaps and inform equipment trainings. **In Tajikistan**, GHSC-PSM's clinical partner completed initial site assessments and shared findings across the donor community to ensure alignment and collaboration on COVID-19 responses in the country.

HEALTH SYSTEMS STRENGTHENING: COVID-19 AND EMERGENCY PREPAREDNESS AND RESPONSE

In addition to global support, country teams engaged with national government stakeholders in Q3 to assist them in responding to the COVID-19 pandemic.

In Nigeria, the MOH distributed a manual for the National Integrated Specimen Referral Network (NISRN) for use in all health areas, including COVID-19. In five states, GHSC-PSM leveraged the existing sample transport system to transport COVID-19 specimens. NISRN is a cost-effective, efficient, safe, and secure specimen referral system implemented and supported by GHSC-PSM. Through private sector service providers, a dedicated team of motorcycle couriers are accountable for timely pick-up, transport, and delivery of samples for diagnostic tests.

Following successful implementation of the Emergency Supply Chain (ESC) playbook at the national level in **Burkina Faso**, the playbook was rolled out at the regional level in Q3. The project helped train 16 regional ESC focal points in four pilot regions (Centre, Centre-North, Centre-South and Central Plateau) on the playbook. The focal points are representatives from the collective One Health Ministries (comprised of the Ministries of Health, Animal Resources, Environment and Agriculture). The regional focal points collected logistic data from their respective regions that have now been integrated into the national playbook, increasing national capacity to store and transport health commodities and conduct waste management.

Supporting the global COVAX initiative

In Q3, GHSC-PSM received $6.11M to implement COVAX technical assistance activities in the following 12 countries: Angola, Botswana, Colombia, El Salvador, Ethiopia, Ghana, Guatemala, Guinea, Malawi, Namibia, Pakistan and Rwanda. Work is just beginning in most of the 12 countries. However, in Malawi, GHSC-PSM received early funding to support the Ministry of Health in rolling out COVID-19 vaccines. Four key areas of support in Malawi are typical of the kinds of support other countries will receive:

- Strengthening data management systems for commodity tracking and reporting
- Warehousing and distributing vaccines—including cold chain requirements—and non-vaccine supplies to health facilities
- Developing an effective waste management plan to manage vaccine-related waste
- Coordinating vaccine rollout activities through participating in various technical working group meetings

Delivery of COVID-19 vaccines and syringes to Malawi. *Photo Credit: GHSC-PSM / Urban Dynamix*

As the pace of COVID-19 vaccine deliveries increases through COVAX, information about each country's capacity to manage cold chain and ultra-cold chain supply chains is essential. In May and June 2021, GHSC-PSM supported USAID to plan for distribution of COVID-19 vaccines with:

- Research into existing information regarding cold chain and ultra-cold chain capabilities in the public and private sectors for COVAX-supported 92 countries
- Assessment of cold chain and ultra-cold chain capabilities in 36 GHSC-PSM-supported countries
- A request for proposal with 3PL providers to support vaccine delivery and distribution after COVAX vaccines arrive at destination ports

With the rise of COVAX technical assistance support in Q3, GHSC-PSM prepared a COVAX Waste Management technical brief to answer frequently asked questions and clarify the type of waste management technical support that the project can offer partner governments to manage the increased levels of waste generated by mass COVID-19 vaccination campaigns.

Current Reporting Period

2021-Q3

GLOBAL HEALTH SUPPLY CHAIN PROGRAM

Procurement and Supply Management

Delivery Impact to Date

Number of ACT treatments delivered

345,871,926

Number of Couple Years Protection delivered

86,504,734

Person-years of ARV treatment delivered

14,448,931

Global Supply Chain M&E Indicator Performance

FY2021 Quarter 3, April-June 2021

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)

USAID FROM THE AMERICAN PEOPLE

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

USAID FROM THE AMERICAN PEOPLE CDC

U.S. President's Malaria Initiative

Delivery Performance

Current Reporting Period

2021-Q3

A1a. On-time, In-Full Delivery

Task Order	Total # of Line Items Delivered	OTIF	OTIF Target
TO1 - COVID19	167	75%	80%
TO1 - HIV	1,124	82%	80%
TO2 - Malaria	297	92%	80%
TO3 - FP/RH	35	100%	80%
TO4 - MNCH	14	86%	80%
Total	**1,637**	**84%**	**80%**

A1b. On-time Delivery

Task Order	Total # of Line Items with ADDs in the quarter	OTD	OTD Target
TO1 - COVID19	143	86%	80%
TO1 - HIV	1,044	90%	80%
TO2 - Malaria	306	90%	80%
TO3 - FP/RH	39	100%	80%
TO4 - MNCH	12	100%	80%
Total	**1,544**	**90%**	**80%**

A16. Backlog Percentage

Task Order	Total # of line items with ADDs in the last 12 months	Backlog	Backlog target
TO1 - COVID19	994	0.5%	5%
TO1 - HIV	3,990	3.2%	5%
TO2 - Malaria	1,007	2.1%	5%
TO3 - FP/RH	208	1.0%	5%
TO4 - MNCH	102	0.0%	5%
Total	**6,301**	**2.5%**	**5%**

TO	Analysis
Crosscutting	Overall delivery performance has remained strong and generally consistent with the previous quarter. OTIF results were 84 percent, and OTD reached 90 percent for the quarter. The backlog was at its lowest point in over a year, falling to 2.5 percent of line items. Overall delivery volume has also grown, driven by increased deliveries for HIV and malaria commodities. 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 84 percent, and COVID-impacted OTIF was 75 percent. In both cases, the gap between the standard result and the COVID-impacted result has narrowed, indicating few COVID-related impacts during this period. For further discussion of global supply chain dynamics during the pandemic, please see the main narrative of this report.
TO1 - HIV	Overall delivery performance has remained strong and generally consistent with the previous quarter. OTIF results were 82 percent, and OTD reached 90 percent for the quarter. The backlog was at its lowest point in over a year, falling to 3.2 percent of line items. Overall delivery volume has also grown over the course of the past year. 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 84 percent, and COVID-impacted OTIF was 72 percent. In the case of OTD, the gap between the standard result and the COVID-impacted result has narrowed, indicating fewer COVID-related impacts for line items promised during this period. For OTIF, there is still a difference of ten percentage points, suggesting that COVID-delayed items with agreed delivery dates in earlier periods continued to be delivered throughout Q3.
TO2 - Malaria	Overall delivery performance for malaria commodities has remained strong and generally consistent with the previous quarter. OTIF and OTD results were at 92 and 90 percent, respectively, for the quarter. The backlog increased to just over two percent, comprising 21 line items for eight countries. All shipments were in transit at the time of reporting. Overall delivery volume has also grown over the course of the past year, reaching nearly 300 line items for 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 84 percent, and COVID-impacted OTIF was 87 percent, results which still exceed the targets for delivery performance.
TO3 - FP/RH	Overall delivery performance for family planning commodities was very strong for the period, reaching 100 percent OTIF and OTD. The backlog stood at just one percent, representing just two line items. Delivery volume overall was lower this period, with 35 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 and OTIF were both 80 percent for the quarter, indicating that COVID-related delays were still prevalent during this period.
TO4 - MNCH	Delivery performance for maternal and child health product was strong for the period, at 86 percent OTIF and 100 percent OTD. There were also no backlogged items at the time of reporting. Delivery volume was lower this quarter, with 10 line items delivered to DRC and four more to Nigeria and Mali. 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 100 percent, indicating the COVID-related factors did not impact items promised for this period. COVID-impacted OTIF was 71 percent, suggesting that several lines delivered this period originally had agreed delivery dates in earlier periods, but were delayed due to COVID.

Delivery Performance

Current Reporting Period

2021-Q3

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	**75%**	**167**	**86%**	**143**	**0.5%**	**994**
COVID19	75%	167	86%	143	0.5%	994
TO1 - HIV	**82%**	**1,124**	**90%**	**1,044**	**3.2%**	**3,990**
Adult ARV	87%	146	94%	141	1.9%	514
Condoms	78%	51	82%	49	4.0%	176
Laboratory	81%	760	92%	686	2.8%	2,420
Other Non-Pharma	81%	31	83%	29	4.3%	232
Other Pharma	87%	39	85%	40	6.5%	170
Other RTK	67%	3	22%	9	30.0%	20
Pediatric ARV	82%	50	81%	52	2.9%	239
Severe Malaria Meds					0.0%	1
TB HIV	97%	30	97%	29	1.6%	126
Vehicles and Other Equipment					0.0%	1
VMMC	57%	14	89%	9	7.7%	91
TO2 - Malaria	**92%**	**297**	**90%**	**306**	**2.1%**	**1,007**
ACTs	93%	137	89%	146	2.3%	428
Laboratory	96%	27	100%	26	0.0%	111
LLINs	85%	40	92%	37	3.8%	160
mRDTs	95%	19	83%	23	3.8%	105
Other Non-Pharma	100%	6	100%	6	0.0%	33
Other Pharma	100%	1	100%	1	0.0%	8
Other RTK	100%	1	100%	1	0.0%	1
Severe Malaria Meds	85%	34	88%	32	0.0%	91
SMC	93%	29	93%	29	0.0%	38
SP	100%	3	60%	5	3.1%	32

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	**100%**	**35**	**100%**	**39**	**1.0%**	**208**
Combined Oral Contraceptives	100%	9	100%	8	0.0%	45
Copper-Bearing Intrauterine Devices	100%	5	100%	5	8.3%	12
Emergency Oral Contraceptives					0.0%	4
Implantable Contraceptives	100%	4	100%	4	2.2%	45
Injectable Contraceptives	100%	11	100%	12	0.0%	54
Other Non-Pharma	100%	2	100%	6	0.0%	14
Other RTK					0.0%	2
Progestin Only Pills	100%	2	100%	2	0.0%	21
Standard Days Method	100%	2	100%	2	0.0%	11
TO4 - MNCH	**86%**	**14**	**100%**	**12**	**0.0%**	**102**
Other Non-Pharma					0.0%	7
Other Pharma	86%	14	100%	12	0.0%	95

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

2021-Q3

A3. Average overall cycle time

Task Order	# of line items delivered	Average Cycle Time	Cycle time target	Average dwell-adjusted cycle time
TO1 - COVID19	167	233		228
TO1 - HIV	1124	271	250	244
TO2 - Malaria	297	355	340	327
TO3 - FP/RH	35	321		279
TO4 - MNCH	14	327	350	327
Total	**1637**	**284**		**259**

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	**35**	**321**		**279**
Direct drop fulfillment	20	303	275	266
Warehouse fulfillment	15	346	250	296

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 rose to 271 days this quarter, exceeding the target of 250. The dwell adjusted result was 244 days, with an average dwell time of 28 days per hold instance. Average cycle times increased in earlier process segments for clarifications and sourcing, which may be attributable to increased used of holds. This quarter, HIV saw delivery of a greater number of line items that had been placed on hold at some stage in their processing. More than a third (34 percent) of line items had been placed on hold at some point, most often while the orders awaited fund releases or pending clarifications from USAID or the country on order specifications. There was also some reduction in average times for manufacturing (PO release to actual goods available date).
TO2 - Malaria	End-to-end cycle time for malaria commodities fell to 355 days this quarter, approaching the target of 340 days. The dwell-adjusted result was 327 days, with an average dwell time of 28 days per hold instance. Average cycle times increased in the clarifications segment, but fell for manufacturing and delivery. This quarter, more than a third (37 percent) of line items had been placed on hold at some point, most often while the orders awaited MOP fund releases or pending the completion of quantification exercises in countries. Lengthly holds were contributing factors in long end-to-end cycle times for countries like DRC, which had several line items entered and placed on hold for more than 200 days in 2019, and Ethiopia, which had long funding holds during 2020.
TO3 - FP/RH	End-to-end cycle times for RDC fulfillments rose this quarter, reaching 346 days, with a dwell-adjusted result of 296 days. The main driver of the lengthy cycle time was two line items for Mozambique, which were entered between 19 and 22 months in advance of their requested delivery dates. These items were on hold for more than 300 days while awaiting funds availability. Additional distribution order line items were also placed on funding holds, through for shorter periods on average. Cycle times for direct drop fulfillments fell to an average of 303 days, with a dwell-adjusted result of 266 days. The most significant changes from the pervious quarter were improvements in the manufacturing and logistics segments. There were no deliveries to DRC this quarter, which resulted in more typical cycle times for these logistics segments.
TO4 - MNCH	The project delivered 14 line items this quarter, including 10 lines to DRC. In Q2, DRC orders were sourced from a domestic supplier, resulting in much shorter cycle times given that lengthy logistics and waiver processes could be avoided. This quarter, deliveries were once again shipped from an international supplier, leading to cycle times more typical of previous performance for this destination. Other delivery destinations include Nigeria and Mali, which also had cycle times in excess of 400 days. COVID-related delays were a contributing factor to these long cycle times.

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 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

2021-Q3

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

Fulfillment Channel	Direct Drop Fulfillment			Warehouse Fulfillment			**Total**
Task Order	Air	Land	Sea	Air	Land	Sea	
TO1 - COVID19	**191**	**240**	**269**				**233**
COVID19	191	240	269				**233**
TO1 - HIV	**274**	**245**	**321**	**240**	**291**	**280**	**271**
Adult ARV	285		321	274	304	331	**304**
Condoms			317	186		200	**277**
Laboratory	275	247	341				**266**
Other Non-Pharma	222	201	287				**226**
Other Pharma	300	261	309				**294**
Other RTK	292						**292**
Pediatric ARV	264		400	214	76	247	**268**
TB HIV	245	128	307	98		163	**240**
VMMC	215		314				**307**
TO2 - Malaria	**357**	**352**	**368**	**247**			**355**
ACTs	287	261	334				**325**
Laboratory	461		509				**502**
LLINs		382	403				**401**
mRDTs	403		328				**375**
Other Non-Pharma	276		495				**459**
Other Pharma			295				**295**
Other RTK	249						**249**
Severe Malaria Meds	435		334				**373**
SMC			226	247			**246**
SP			333				**333**
TO3 - FP/RH	**276**	**262**	**310**	**358**		**338**	**321**
Combined Oral Contraceptives			324			248	**282**
Copper-Bearing Intrauterine Devices			360	391		220	**351**
Implantable Contraceptives	469		657	275		592	**498**
Injectable Contraceptives		262	292	351			**300**
Other Non-Pharma			157				**157**
Progestin Only Pills						494	**494**
Standard Days Method	180						**180**

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

Fulfillment Channel	Direct Drop Fulfillment		**Total**
Product Category	Land	Sea	
Other Pharma	434	298	**327**
Total	**434**	**298**	**327**

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 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	**102**	**2**	**58**		**74**	**37**	**40**
TO1 - COVID19	41	0	114		62	36	53
TO1 - HIV	99	3	56		80	32	24
TO2 - Malaria		1	32		60	50	71
TO3 - FP/RH		6	38		31	34	61
TO4 - MNCH	95	6	105		88	56	84
Warehouse fulfillment	**101**	**4**	**94**	**40**	**10**	**30**	**36**
TO1 - HIV	76	5	114	39	9	31	37
TO2 - Malaria		1	15	40	13	27	16
TO3 - FP/RH		2	77	42	11	31	56
Total	**102**	**3**	**62**	**89**			**39**

Quality Assurance Performance (TO2 only)

Current Reporting Period

2021-Q3

A2. QA processes completed within required lead times

Task Order	Total # of QA processes completed	% QA Processes On Time	A2 Target
TO2 - Malaria	**86**	**99%**	**80%**
ACTs	22	100%	80%
LLINs	28	100%	80%
mRDTs	21	100%	80%
Other Pharma	1	100%	80%
Severe Malaria Meds	8	100%	80%
SMC	0		80%
SP	6	83%	80%

A13. Out-of-specification percentage

Task Order	Total # of batches tested	Out-of-specification percentage	A13 Target
TO2 - Malaria	**366**	**0.3%**	**1%**
ACTs	139	0.0%	1%
LLINs	45	0.0%	1%
mRDTs	72	0.0%	1%
Other Pharma	3	0.0%	1%
Severe Malaria Meds	65	0.0%	1%
SMC	30	3.3%	1%
SP	12	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			
ACTs			
LLINs			
mRDTs			
Other Non-Pharma			
Other Pharma			
Other RTK			
Severe Malaria Meds			
SMC			
SP			

Ref	Analysis
A02	Excluding delays due to COVID-19, 99 percent of QA processes were completed within the required lead times. Including COVID-impacted processes, performance was 75 percent. GHSC-PSM's malaria QA team has been monitoring these processes and working with the procurement team to identify priorities and switch to alternate labs when possible, to minimize the impact of delays.
A13	Out-of-specification findings were low this quarter, with only one batch of SPAQ rejected by one of the project's third-party laboratories.
A14b	QA lab performance increased from 75 back up to 91 percent, similar to the score in recent quarters. Last quarter, the low score for on-time test provision was largely due to relocation of two of the labs. This quarter, the labs have relocated and resumed business as usual. GHSC-PSM is continuing to work with testing labs to determine delays that can be excluded due to COVID and other acceptable delays. Two of the labs test limited volumes, and one of these was late to confirm receipt of samples, thereby heavily impacting the average responsiveness score.
A15	This is a semi-annual indicator. It will next be reported in FY2021 Q4.

Warehouse Performance and Product Losses

Current Reporting Period

2021-Q3

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
TO2 - Malaria	RDC	Damage	ACTs	$1,528	$623,994	0.24%
TO2 - Malaria	RDC	Expiry	NA	$0	$519,718	0.00%
TO3 - FP/RH	RDC	Expiry	NA	$0	$7,689,385	0.00%
TO1 - HIV	RDC	Expiry	VMMC	$108,071	$51,950,602	0.21%
TO1 - HIV	Cameroon	Temperature Excursion	Laboratory	$137,349	$5,777,476	2.38%
TO2 - Malaria	Tanzania	Theft	LLINs	$16,720	$1,475,414	1.13%

A8. Shelf life remaining

Task Order	Inventory Balance	% Shelf Life Remaining	Shelf life target
TO1 - HIV	$104,788,078	82%	78%
TO2 - Malaria	$21,697,296	69%	70%
TO3 - FP/RH	$58,668,600	84%	77%
Total	**$185,153,973**	**78%**	

Ref	Analysis
A08	Shelf life performance for family planning commodities remained consistent with previous quarters, with 81 percent shelf life remaining. Shelf life exceeded 80 percent for injectables, progestin-only pills, and copper-bearing IUDs, but was slightly short for implants (79 percent) and combined oral contraceptives (73 percent). Shelf life for COC has been lower due to stockpiling of this product to prevent shortages with the upcoming transition to sugar placebos. The project accepted product with lower shelf life from the supplier to ensure demand coverage. Demand is expected to be high enough to distribute the product with no risk of expiry in the RDC. The greatest share of inventory value is two-rod implants. Overall demand for implants has declined in 2020 and 2021, leaving the RDC with an overstock of this product. No new replenshments are planned for this item as the project continues to distribute existing inventory.
A08	The malaria task order ended the quarter with Alu inventory in the RDC for the first time this fiscal year, with inbound shipments arriving in April and May. As of the end of June, the average shelf life remaining for these products was 81 percent.
A08	The weighted average shelf life remaining for HIV/AIDS commodities fell slightly this quarter, to 80 percent. This is still generally consistent with previous periods. Results are driven by TLD 90, which represents the overwhelming share of HIV commodities at the RDCs and which stood at 79 percent of shelf life remaining overall at the end of the quarter.
C07a	The RDC saw expiries of VMMC products this quarter. These included kits for forceps guided procedures, which countries have stopped ordering following a change in USAID guidance. The expiry represented less than one percent of overall HIV inventory.
C07a	There were no expiries of family planning products in GHSC-PSM's RDC inventory this quarter.
C07a	There were no expiries of malaria products in GHSC-PSM's RDC inventory this quarter.

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

2021-Q3

A10. Framework contract percentage

Task Order	Procurement total	Framework contract percentage	Framework contract target
TO1 - COVID19	$11,444,347	53%	
TO1 - HIV	$82,481,222	89%	85%
TO2 - Malaria	$23,518,783	89%	85%
TO3 - FP/RH	$10,048,590	100%	95%
TO4 - MNCH	$1,576,309	100%	85%
Total	**$129,069,251**	**87%**	**NA**

A10. Product-level detail

Task Order	Framework contract percentage	Procurement total
TO1 - COVID19	**53%**	**$11,444,347**
COVID19	53%	$11,444,347
TO1 - HIV	**89%**	**$82,481,222**
Adult ARV	100%	$22,393,235
Condoms	100%	$3,307,923
Laboratory	80%	$40,134,282
Other Non-Pharma	99%	$1,275,604
Other Pharma	100%	$3,076,030
Other RTK	0%	$971,932
Pediatric ARV	100%	$3,644,762
TB HIV	100%	$4,374,806
VMMC	100%	$3,302,648
TO2 - Malaria	**89%**	**$23,518,783**
ACTs	100%	$6,870,446
Laboratory	100%	$179,533
LLINs	62%	$5,258,320
mRDTs	92%	$6,857,276
Other Non-Pharma	100%	$16,478
Other Pharma	100%	$13,272
Severe Malaria Meds	100%	$3,317,311
SMC	100%	$286,452
SP	100%	$719,696

A10. Product-level detail

Task Order	Framework contract percentage	Procurement total
TO3 - FP/RH	**100%**	**$10,048,590**
Combined Oral Contraceptives	100%	$1,490,844
Implantable Contraceptives	100%	$1,361,700
Injectable Contraceptives	100%	$6,764,786
Other Non-Pharma	100%	$170,687
Progestin Only Pills	100%	$67,824
Standard Days Method	100%	$192,750
TO4 - MNCH	**100%**	**$1,576,309**
Other Pharma	100%	$1,576,309

Task Order Analysis

Task Order	Analysis
TO1 - HIV	Use of framework contracts for HIV procurements rose to 89 percent this quarter, driven by an increase in the use of framework contracts for laboratory procurements. After a drop in Q2, laboratory framework procurement rose to its highest level so far, with 80 percent of procurement value making use of a long-term agreement this quarter. All other product categories were fully procured under framework agreements, with the exception of Other RTKs for hepatitis C, tuberculosis, and syphilis.
TO2 - Malaria	Use of framework contracts for malaria procurements remained consistent at 89 percent this quarter. All malaria pharmaceuticals, laboratory, and other non-pharma items continue to make full use of framework contracts. Use of framework contracts for mRDTs fell significantly at the end of FY2020, but is recovering and has exceeded 90 percent of procurement value for the last three quarters. Lastly, use of framework contracts for LLINs was relatively lower this quarter, at 62 percent. This was due to low overall procurement volume and purchases of some specialty items, including dual AI and hammock nets.
TO3 - FP/RH	Family planning continues to procure all items under framework contracts, per the sourcing strategy for these commodities.
TO4 - MNCH	Maternal and child health commodities procured this quarter included essential medicines for Zambia, Mozambique, Liberia and Nigeria. All were purchased under the project's framework contracts for these products.

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	**8.4%**	**297**
ACTs	5.8%	137
LLINs	10.0%	40
Severe Malaria Meds	8.8%	34
SMC	0.0%	29
Laboratory	0.0%	27
mRDTs	47.4%	19
Other Non-Pharma	0.0%	6
SP	0.0%	3
Other Pharma	0.0%	1
Other RTK	100.0%	1
TO3 - FP/RH	**14.3%**	**35**
Injectable Contraceptives	9.1%	11
Combined Oral Contraceptives	0.0%	9
Copper-Bearing Intrauterine Devices	40.0%	5
Implantable Contraceptives	25.0%	4
Other Non-Pharma	0.0%	2
Progestin Only Pills	50.0%	2
Standard Days Method	0.0%	2
Total	**9.0%**	**332**

Task Order	Analysis
TO2 - Malaria	Use of registration waivers for malaria products remained consistent this quarter, at 8.4 percent of delivered line items. This included eight line items of ACTs for Angola, Zimbabwe and Niger; nine line items of RDTs for seven different countries; and three line items of severe malaria medicines for Thailand, Benin, and Ethiopia.
TO3 - FP/RH	Use of registration waivers for family planning products rose to 14.3 percent of delivered line items this quarter, representing five out of 35 deliveries. This includes two items for Haiti and Angola, which do not have registration authorities at present. Other unregistered products included copper-bearing IUDs for Uganda, implants for Rwanda, and progestin-only pills for Mozambique.

Supply Plan Submissions

Current Reporting Period

2021-Q3

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

Product Group	# of supply plans required	Supply plan submission rate	Submission target
ARVs	20	100%	90%
Condoms	21	100%	90%
FP commodities	21	100%	95%
Lab (HIV diagnostics)	15	100%	90%
Malaria commodities	29	97%	90%
RTKs	18	100%	90%
TPT	14	93%	85%
VMMC	6	83%	80%
Total	**144**		

Analysis

Supply plan submissions for key HIV/AIDS commodity groups remained strong in FY2021 Q3, maintaining at 100 percent for ARVs, RTKs, lab commodities, and condoms. VMMC and TPT were each missing only one submission.

All required family planning and condoms supply plans were submitted as expected this quarter.

All but one required malaria supply plans were submitted as expected this quarter.

Supply Plan and Forecast Performance

Current Reporting Period

2021-Q3

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	13%	-13%	34%	25%	-34%
Condoms	14%	14%	25%	25%	25%
Laboratory	8%	8%	25%	25%	-25%
Pediatric ARV	4%	-4%	33%	35%	-33%

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	13%	-13%	53%	35%	-53%
mRDTs	14%	14%	16%	35%	-16%

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	69%	69%	50%	25%	50%
Copper-bearing Intrauterine Devices	0%	0%	31%	25%	-31%
Implantable Contraceptives	7%	-7%	13%	25%	13%
Injectable Contraceptives	12%	12%	13%	25%	13%
Progestin Only Pills	0%	0%	0%	25%	0%

Task Order	Analysis
TO1 - HIV	Single-quarter supply plan error for adult ARVs has continued to decline this quarter, falling to 13 percent. While total actual order quantities have gotten closer to planned totals, they have been consistently under-ordered for several quarters. This has caused the rolling four-quarter measure of supply plan error to widen over time, reaching 34 percent this quarter. However, the greatest period of under-ordering was FY2020 Q4; if current trends continue, four-quarter error is likely to recover in the coming quarter. For pediatric ARVs, ordering has also aligned more closely with supply plans, with only four percent error this quarter. Four-quarter error remains larger, at 33 percent, again due to earlier periods of under-ordering.
TO1 - HIV	Supply plan error for condoms fell this quarter, from 64 to 14 percent. Female condoms performed particularly strongly, and in general, fewer countries placed orders with short lead times than usual. The error that did occur was generated by one country, which made several changes to its order quantities and requested delivery dates within a short period. The Plan team is continuing to monitor these orders and will flag critical changes to the CPM and country office. On the four-quarter metric, several quarters of over-ordering have pushed the results outside the targeted range. However, improved performance this quarter has started to bring the results back in, reaching 25 percent this period.
TO1 - HIV	Supply plan error for laboratory commodities improved significantly this quarter, falling from 96 percent error to just eight percent. Orders exceeded supply plans for CD4, viral load and other lab items, due to some countries placing unplanned orders or increasing their order quantities. Orders were lower than planned for EID and other molecular lab commodities. Four-quarter error remains greater than the current period, due to under-ordering in Q1 and Q2.
TO2 - Malaria	Supply plan error for ACTs has continued with improved results overall, achieving 13 percent error for the quarter. This is partially a result of aggregating across products; under-ordering of AL was offset by over-ordering of ASAQ, yielding a lower error rate overall. Many planned orders for AL did not materialize, and orders for ASAQ were under-forecasted compared to the actual need. The case was similar for mRDTs, where orders exceeded planned quantities. Supply plan error was 14 percent. GHSC-PSM's headquarters team continues to inform countries on how they use supply plans for strategic proactive procurements. This messaging encourages countries to provide accurate and timely updates as situations evolve within the country. The team will continue to encourage countries to update their supply plans at the start of each quarter to reflect their actual needs and to make sure their orders align with their demand to the extent that funding allows
TO3 - FP/RH	Forecast error for implants was seven percent this quarter, an improvement from the previous period. Error for injectables was 12 percent, an increase from zero in Q2. Both products remained consistent on the four-quarters metric, achieving 13 percent error, well within the targeted range. Combined oral contraceptives (COCs) saw continued increase in ordering compared to supply plans, with error rising to 69 percent for the quarter and continuing to rise on the rolling metric. For COCs, as well as implants and injectables, orders from social marketing organizations (SMOs) contributed to the increased rates of error. The project intends to work more closely with the SMO Coordinator to set expectations with SMOs, to encourage more lead time for order placement in the future Copper IUDs and progestin-only pills both saw little to no error this quarter

Vendor Performance

Current Reporting Period

2021-Q3

A14a-c. Average vendor rating score

Vendor Type	Average vendor rating
Commodity Supplier	75%
Freight Forwarder	79%
QA Lab	91%

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?	100%	48%	48%
2 - Responsiveness	Does the lab provide prompt response after receipt of GHSC-PSM request for testing	70%	15%	10%
3 - Completeness of Documentation	Frequency of modification to Certificates of Analysis (CoA)	92%	18%	16%
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)	68%	10%	7%
Total			**100%**	**91%**

Analysis

This quarter, the supplier on-time delivery score was 75 percent. Overall, supplier on-time performance continues to improve, despite many suppliers still being impacted by the pandemic. There were 220 late order lines out of 872 total order lines with committed goods availability dates during the quarter. There continued to be declines in the number of lines requiring the COVID-19 delay reason code. Among the commodities procured, those with the most late order lines during the quarter included: implantable contraceptives (9 percent on-time, down from 100 percent last quarter), COVID-19 commodities (43 percent on-time, down from 64 percent last quarter), TB commodities under Task Order 1 (56 percent on-time, down from 80 percent last quarter due to supplier capacity issues and incorrect/delayed shipping documents), and lab commodities under Task Orders 1 and 2 (71 percent on-time, down from 79 percent last quarter due to widespread issues, such as incorrect/delayed shipping docs, incorrect/insufficient lead-times and other delays).

The overall score for 3PL performance, across the four 3PLs, was 79.5 percent, down from 87 percent last quarter. Rate request timeliness and on-time performance both decreased since last quarter (down by 12 and 16 percent, respectively), while all other components stayed largely the same. It should also be noted that the measurement methodologies of three of the components have recently changed. As noted last quarter, the project updated its methodology for measuring invoicing accuracy last quarter to encompass only invoices that were actually processed during the reporting period, regardless of when the invoices were received. Invoices received this quarter but processed in the following quarter, for example, will now be assessed in the following quarter. Therefore, trends in invoicing accuracy may lag slightly behind trends in the other metrics. Additionally, rate requests were previously counted as on time if the 3PL needed an extension and was granted one. This policy was changed in March 2021 such that rate requests that require an extension are no longer counted as on time, and as such the overall percentage across the 3PLs saw a significant decrease in this timeframe. Finally, the customer satisfaction survey that makes up 12 percent of the score also was revamped this quarter to focus on the elements of communication/responsiveness and quality of service, and to improve the uniformity of scoring across the different raters. The total customer satisfaction score averages the GHSC-PSM country offices and Washington office scores for each of those two components.

QA lab performance increased from 75 back up to 91 percent, similar to the score in recent quarters. Last quarter, the low score for on-time test provision was largely due to relocation of two of the labs. This quarter, the labs have relocated and resumed business as usual. GHSC-PSM is continuing to work with testing labs to determine delays that can be excluded due to COVID and other acceptable delays. Two of the labs test limited volumes, and one of these was late to confirm receipt of samples, thereby heavily impacting the average responsiveness score.

Data notes

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

Complete Quarterly Results (TO1)

Reporting Period

2021-Q3

A1a. OTIF rate / A1b. OTD rate / A16. Backlog percentage / A10. Framework contracting

Task Order	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	**75%**	**167**	**86%**	**143**	**0.5%**	**994**	**53%**	**$11,444,347**
COVID19	75%	167	86%	143	0.5%	994	53%	$11,444,347
TO1 - HIV	**82%**	**1,124**	**90%**	**1,044**	**3.2%**	**3,990**	**89%**	**$82,481,222**
Adult ARV	87%	146	94%	141	1.9%	514	100%	$22,393,235
Condoms	78%	51	82%	49	4.0%	176	100%	$3,307,923
Laboratory	81%	760	92%	686	2.8%	2,420	80%	$40,134,282
Other Non-Pharma	81%	31	83%	29	4.3%	232	99%	$1,275,604
Other Pharma	87%	39	85%	40	6.5%	170	100%	$3,076,030
Other RTK	67%	3	22%	9	30.0%	20	0%	$971,932
Pediatric ARV	82%	50	81%	52	2.9%	239	100%	$3,644,762
Severe Malaria Meds					0.0%	1		
TB HIV	97%	30	97%	29	1.6%	126	100%	$4,374,806
Vehicles and Other Equipment					0.0%	1		
VMMC	57%	14	89%	9	7.7%	91	100%	$3,302,648
Total	**81%**	**1,291**	**90%**	**1,187**	**2.6%**	**4,984**	**85%**	**$93,925,569**

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	13%	-13%	34%	-34%
Laboratory	8%	8%	25%	-25%
Pediatric ARV	4%	-4%	33%	-33%
A6b - Forecast Error				
Condoms	14%	14%	25%	25%

B6. Quarterly supply plan submissions

Product Group	Supply plan submission rate	# of supply plans required
ARVs	100%	20
Condoms	100%	21
Lab (HIV diagnostics)	100%	15
RTKs	100%	18
VMMC	83%	6

A3. Cycle time (average)

Fulfillment Channel	Direct Drop Fulfillment			Warehouse Fulfillment			Total
Task Order	Air	Land	Sea	Air	Land	Sea	
TO1 - COVID19	**191**	**240**	**269**				**233**
COVID19	191	240	269				**233**
TO1 - HIV	**274**	**245**	**321**	**240**	**291**	**280**	**271**
Adult ARV	285		321	274	304	331	**304**
Condoms			317	186		200	**277**
Laboratory	275	247	341				**266**
Other Non-Pharma	222	201	287				**226**
Other Pharma	300	261	309				**294**
Other RTK	292						**292**
Pediatric ARV	264		400	214	76	247	**268**
TB HIV	245	128	307	98		163	**240**
VMMC	215		314				**307**
Total	**268**	**244**	**305**	**240**	**291**	**280**	**266**

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	Expiry	VMMC	$108,071	$51,950,602	0.21%
Cameroon	Temperature Excursion	Laboratory	$137,349	$5,777,476	2.38%

A8. Shelf life remaining

% Shelf Life Remaining	Inventory Balance
80%	$38,715,337

Crosscutting indicators

A14. Average vendor ratings

Vendor Type	Average vendor rating
Commodity Supplier	75%
Freight Forwarder	79%

Complete Quarterly Results (TO2)

Reporting Period

2021-Q3

	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	
Task Order	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	**92%**	**297**	**90%**	**306**	**2.1%**	**1,007**	**8.4%**	**297**	**89%**	**$23,518,783**	**99%**	**86**	**0.3%**	**366**		
ACTs	93%	137	89%	146	2.3%	428	5.8%	137	100%	$6,870,446	100%	22	0.0%	139		
Laboratory	96%	27	100%	26	0.0%	111	0.0%	27	100%	$179,533						
LLINs	85%	40	92%	37	3.8%	160	10.0%	40	62%	$5,258,320	100%	28	0.0%	45		
mRDTs	95%	19	83%	23	3.8%	105	47.4%	19	92%	$6,857,276	100%	21	0.0%	72		
Other Non-Pharma	100%	6	100%	6	0.0%	33	0.0%	6	100%	$16,478						
Other Pharma	100%	1	100%	1	0.0%	8	0.0%	1	100%	$13,272	100%	1	0.0%	3		
Other RTK	100%	1	100%	1	0.0%	1	100.0%	1								
Severe Malaria Meds	85%	34	88%	32	0.0%	91	8.8%	34	100%	$3,317,311	100%	8	0.0%	65		
SMC	93%	29	93%	29	0.0%	38	0.0%	29	100%	$286,452		0	3.3%	30		
SP	100%	3	60%	5	3.1%	32	0.0%	3	100%	$719,696	83%	6	0.0%	12		
Total	**92%**	**297**	**90%**	**306**	**2.1%**	**1,007**	**8.4%**	**297**	**89%**	**$23,518,783**	**99%**	**86**	**0.3%**	**366**		

A3. Cycle time (average)

Fulfillment Channel	Direct Drop Fulfillment			Warehouse Fulfillment	**Total**
Task Order	Air	Land	Sea	Air	
TO2 - Malaria	**357**	**352**	**368**	**247**	**355**
ACTs	287	261	334		**325**
Laboratory	461		509		**502**
LLINs		382	403		**401**
mRDTs	403		328		**375**
Other Non-Pharma	276		495		**459**
Other Pharma			295		**295**
Other RTK	249				**249**
Severe Malaria Meds	435		334		**373**
SMC			226	247	**246**
SP			333		**333**
Total	**357**	**352**	**368**	**247**	**355**

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	ACTs	$1,528	$623,994	0.24%
RDC	Expiry	NA	$0	$519,718	0.00%

B6. Quarterly supply plan submissions

Product Group	Supply plan submission rate	# of supply plans required
Malaria commodities	97%	29

A8. Shelf life remaining

% Shelf Life Remaining	Inventory Balance
81%	$623,503

A14. Average vendor rating - QA labs

Average vendor rating
91%

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	13%	-13%	53%	-53%
mRDTs	14%	14%	16%	-16%

Crosscutting indicators

A14. Average vendor ratings

Vendor Type	Average vendor rating
Commodity Supplier	75%
Freight Forwarder	79%

Complete Quarterly Results (TO3)

Reporting Period

2021-Q3

A1a. OTIF rate / A1b. OTD rate / A16. Backlog percentage / A10. Framework contracting

Task Order	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	**100%**	**35**	**100%**	**39**	**1.0%**	**208**	**100%**	**$10,048,590**
Combined Oral Contraceptives	100%	9	100%	8	0.0%	45	100%	$1,490,844
Copper-Bearing Intrauterine Devices	100%	5	100%	5	8.3%	12		
Emergency Oral Contraceptives					0.0%	4		
Implantable Contraceptives	100%	4	100%	4	2.2%	45	100%	$1,361,700
Injectable Contraceptives	100%	11	100%	12	0.0%	54	100%	$6,764,786
Other Non-Pharma	100%	2	100%	6	0.0%	14	100%	$170,687
Other RTK					0.0%	2		
Progestin Only Pills	100%	2	100%	2	0.0%	21	100%	$67,824
Standard Days Method	100%	2	100%	2	0.0%	11	100%	$192,750
Total	**100%**	**35**	**100%**	**39**	**1.0%**	**208**	**100%**	**$10,048,590**

A7. Temporary Waiver Percentage

Task Order	Temporary registration waiver percentage	Total # of line items delivered
TO3 - FP/RH	**14.3%**	**35**
Progestin Only Pills	50.0%	2
Copper-Bearing Intrauterine Devices	40.0%	5
Implantable Contraceptives	25.0%	4
Injectable Contraceptives	9.1%	11
Combined Oral Contraceptives	0.0%	9
Other Non-Pharma	0.0%	2
Standard Days Method	0.0%	2
Total	**14.3%**	**35**

A3. Cycle time (average)

Fulfillment Channel	Direct Drop Fulfillment			Warehouse Fulfillment		**Total**
Task Order	Air	Land	Sea	Air	Sea	
TO3 - FP/RH	**276**	**262**	**310**	**358**	**338**	**321**
Combined Oral Contraceptives			324		248	**282**
Copper-Bearing Intrauterine Devices			360	391	220	**351**
Implantable Contraceptives	469		657	275	592	**498**
Injectable Contraceptives		262	292	351		**300**
Other Non-Pharma			157			**157**
Progestin Only Pills					494	**494**
Standard Days Method	180					**180**
Total	**276**	**262**	**310**	**358**	**338**	**321**

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	Expiry	NA	$0	$7,689,385	0.00%

B6. Quarterly supply plan submissions

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

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	69%	69%	50%	50%
Condoms	14%	14%	25%	25%
Copper-bearing Intrauterine Devices	0%	0%	31%	-31%
Implantable Contraceptives	7%	-7%	13%	13%
Injectable Contraceptives	12%	12%	13%	13%
Progestin Only Pills	0%	0%	0%	0%

A8. Shelf life remaining

% Shelf Life Remaining	Inventory Balance

Crosscutting indicators

A14. Average vendor ratings

Vendor Type	Average vendor rating
Commodity Supplier	75%
Freight Forwarder	79%

Complete Quarterly Results (TO4)

Reporting Period

2021-Q3

	A1a. OTIF rate		A1b. OTD rate		A16. Backlog perentage		A10. Framework contracting	
Task Order	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
TO4 - MNCH	**86%**	**14**	**100%**	**12**	**0.0%**	**102**	**100%**	**$1,576,309**
Other Non-Pharma					0.0%	7		
Other Pharma	86%	14	100%	12	0.0%	95	100%	$1,576,309
Total	**86%**	**14**	**100%**	**12**	**0.0%**	**102**	**100%**	**$1,576,309**

Crosscutting indicators

A14. Average vendor ratings

Vendor Type	Average vendor rating
Commodity Supplier	75%
Freight Forwarder	79%

A3. Cycle time (average)

Task Order	Direct Drop Fulfillment	Total
TO4 - MNCH	**327**	**327**
Other Pharma	327	**327**
Total	**327**	**327**

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.

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 Artenimol/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.