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


# FISCAL YEAR 2020

## ANNUAL REPORT

OCTOBER 1, 2019 TO SEPTEMBER 30, 2020


USAID FROM THE AMERICAN PEOPLE

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

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

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CONTRACT NO. AID-OAA-1-15-00004

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 |
| ALu | artemether-lumefantrine |
| AIDC | automated identification and data capture |
| API | active pharmaceutical ingredient |
| ART | anti-retroviral therapy |
| ARV | anti-retroviral |
| CARhs | Coordinated Assistance for Reproductive-Health Supplies |
| CPG | Consensus Planning Group |
| CSP | Coordinated Supply Planning |
| DCP | decentralized procurement |
| DMPA | depot-medroxyprogesterone acetate |
| DRC | Democratic Republic of the Congo |
| EID | early infant diagnosis |
| eLMIS | electronic logistics management information system |
| ESCP | emergency supply chain preparedness |
| FASP | forecasting and supply planning |
| 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 |
| IM | intramuscular |
| 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 |
| NMCP | National Malaria Control Program |
| NQC | National Quantification Committee |
| 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 |
| POMP | Proactive Order Management Process |
| PPH | postpartum hemorrhage |
| PPMR | Procurement Planning and Monitoring Report |
| PPMRm | Procurement Planning and Monitoring Report-malaria |
| PQ | prequalification |
| PrEP | pre-exposure prophylaxis |
| Q | quarter |
| QA | quality-assurance |
| QAMS | Quality Assurance Management System |
| 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 |
| SSWG | Systems Strengthening Working Group |
| 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 |
| WHO | World Health Organization |

# Executive Summary

The USAID Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project, funded by the U.S. Agency for International Development (USAID), is pleased to present this report to summarize our work and performance for Fiscal Year 2020 (FY 2020). We describe our work in providing lifesaving medicines and other health commodities and building efficient, reliable, and cost-effective supply chains for delivering 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 and child health (MCH), which share the cost of the project. We also describe activities related to the novel coronavirus (COVID-19) response.

As it does for so many programs, COVID-19 dominates GHSC-PSM's FY 2020 narrative. As readers will note throughout this report, it is difficult to disengage the project's accomplishments this fiscal year from the prism of the pandemic. The great news is, under myriad pressures and logistics challenges, the project continues to perform at a high level.

Not only has the project kept its programmatic commitments, maintaining the flow of health commodities and delivering technical assistance in creative ways, but also it has taken on new responsibilities in responding to the pandemic and risen to the challenge.

GHSC-PSM's performance in the midst of the direst of circumstances is a testament to the strength and flexibility of the project's integrated global supply chain and the technical depth of staff who have been able to pivot to get the job done. The following pages highlight many examples of the challenges faced and the project's flexibility and innovation in the face of the crisis.

**GHSC-PSM Fast Facts**

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

- Delivered more than **$41.7 million bottles of TLD** to **24 countries**
- Delivered enough anti-malarials to treat **268.4 million infections**
- Delivered contraceptives to provide **73.3 million couple-years** of protection
- Delivered **160 thousand mosquito repellent bottles** to Ecuador to protect pregnant women from Zika
- Procured and delivered **8,722 ventilators for 44 countries in just six months** in response to COVID-19.
- Supported **46 countries** with technical assistance
- Saved **$31.2 million** on warehousing and logistics
- Saved **$274.4 million** on commodity procurements

GHSC-PSM implements continuous improvement to develop its adaptive management approaches towards the efficiency of national public health supply chains. For example, the project has been analyzing to what extent a government, the private sector, or both can manage a supply chain most efficiently and cost effectively. Understanding is growing that a country can manage its supply chain without owning the entire process. Moving away from a central medical store model to more of a contract management model can be more cost efficient when a Ministry of Health does not manage all of the supply chain transactions, including warehousing and distribution services, and outsources these tasks to a contractor. GHSC-PSM has increasingly advocated for such transitions in several of the countries where it works. Nigeria and Malawi are two examples where the government is working with the private sector for at least some of its supply chain transactions. Malawi's MOH is running a parallel supply chain through a third-party logistics (3PL) company. In Nigeria, most of the last-mile delivery is done through an expanded network of 3PL

providers. GHSC-PSM's structuring of competitive contracts and tightening of key performance indicators has resulted in a much more even landscape for 3PL providers, resulting in improved performance and reduced costs. Nigeria's MOH is also engaged in a public-private sector (PPP) partnership for their two national supply chain warehouses.

Another area of focus over the past year has been improving national supply chain efficiency by increasing data visibility and use. As more countries transition from paper-based logistics management information systems (LMISs) to electronic systems, it is increasingly possible to access greater amounts of data; more specifically, the ability to garner data visibility "real time" at the lowest-level service delivery points. Knowing that patients are receiving their medications when they need them enables the project to translate that prescription data into procurement data and future orders.

GHSC-PSM is expanding its focus beyond on-time delivery to implementing and using global supply chain standards (namely, GS1) for product identification, location identification, and product master data. Adoption of global standards has become a central part of the GHSC-PSM program to enhance efficiency, improve the traceability of health commodities worldwide, and enable more secure supply chains to increase end user safety. Throughout FY 2020, the project supported countries in advancing the use of GS1. The project finalized a GHSC-PSM Traceability Planning Framework Toolkit that includes tools focused on education and awareness, vision and strategy, policy and architecture, and standards implementation.

GHSC-PSM continues to have country-specific conversations to identify opportunities for data visibility. The project took an important step toward that in FY 2020 with the release of the 2019 Contraceptive Security Indicators (CSI) Report and online interactive dashboard. This enables countries not only to see their own data, but data from other countries, creating better ways to advocate for necessary funding and improve their contraceptive security. The overall goal of the country-specific conversations is then to bring nations together to start cross-fertilization of learning and information sharing.

Over the next year the project is preparing supply chains for the next pivot, and a return to a "new normal" in the era of COVID-19. GHSC-PSM wrote a guide for supply chains to recover after suffering shocks like a pandemic. Here, again, data visibility is key to effective decision-making, as the guide advises revisiting data multiple times during the recovery process to make the most effective decisions on supply and demand.

## Mitigating Risk of Supply-Chain Interruptions Because of Coronavirus

In FY 2020, the impact of the COVID-19 pandemic was felt deeply across supply chains. Early in the year, the project ramped up its response to secure supply of health commodities as countries around the world implemented restrictions on transportation and workplaces in efforts to contain the disease. Upstream closure of factories, offices, warehouses, ground transport companies, and canceled or restricted air, ocean, and ground travel were compounded by a downstream push to move more commodities to patients and avoid potential exposure.

Despite some improvements in manufacturing and logistics, COVID-19 continued to affect the global supply chain well into Q4. Restrictions on travelers and reduced air freight capacity had an impact on the project's ability to ship products from origin to destination. Q4 also saw manufacturers transition their production lines from HIV/AIDS, malaria, and family-planning commodities to personal protective equipment (PPE) and other more profitable COVID-19 commodities, notably COVID-19 rapid diagnostic tests.

In the face of these manufacturing and logistics challenges (see section C1, Global Supply Chain for details), GHSC-PSM focused on continuous, safe, reliable supply to countries to ensure program continuity and supported U.S. Government (USG) procurements in direct response to the pandemic.

### Meeting Our Commitments in the Face of COVID-19

The project established its cross-functional COVID-19 coordination team to monitor, manage, and mitigate, to the extent possible, the impact on supply chains and prepare briefing materials for USAID.

Throughout FY 2020, the project actively examined the arc of the pandemic and its impact on supply, transport, and demand. GHSC-PSM worked with suppliers to assess the availability of existing supplies and production capacity to inform prioritization of country orders.

### Preventing Country- and Site-Level Shortages

GHSC-PSM quickly leveraged its model to help secure the supply of priority commodities, including anti-retrovirals (ARVs), artemisinin-based commodities, injectable contraceptives and long-lasting insecticide-treated nets (LLINs), by prioritizing commodities based on how at risk they were and the depth of the programmatic impact in the event of shortages. The project mitigated potential shipping delays and shortage risks by:

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

**Mitigation Efforts**

**Global**

- Conducted a review of supply plan, order and inventory data and undertook prioritization exercises across task orders and across procurers to ensure that urgent needs are met
- Categorized at-risk commodities and anticipated the pandemic's arc to avoid disruptions
- Preordered and stockpiled key commodities
- Encouraged GHSC-PSM country office staff to move commodities as close to service delivery points as possible and assess opportunities for supplementary storage

**Country-Level**

- Coordinated with third-party logistics (3PL) companies to arrange for containers to be stored in the 3PL's warehouse to manage increased COVID-19–related demand
- Established an emergency team to monitor and prevent potential interruptions to the cold chain for ARV and lab products
- Worked with partners to secure alternative distribution options for contraceptives

For additional examples of the project's COVID-19 mitigation efforts, see box at right.

### COVID-19 Response Activities

The USG allocated additional funding to GHSC-PSM for COVID-19 response activities. These included:

- Procuring medicines, medical equipment, and supplies: GHSC-PSM procured 300 line items valued at more than $16 million for 17 countries
- Procuring ventilators: GHSC-PSM procured and delivered 8,772 ventilators for 44 countries over the course of FY 2020
- Providing supply-chain technical assistance to countries for COVID-19 commodity procurement
- Procuring respiratory and cardiac supplies for Italy
- Conducting market research
- Procuring oxygen

### 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 FY 2020 are provided below.

**Procured almost $1.2 billion** in drugs, diagnostics, and health commodities in FY 2020, and over **$3.2 billion** to date.

**Delivered almost $846 million** in drugs, diagnostics, and health commodities in FY 2020, and almost **$2.7 billion** to date.

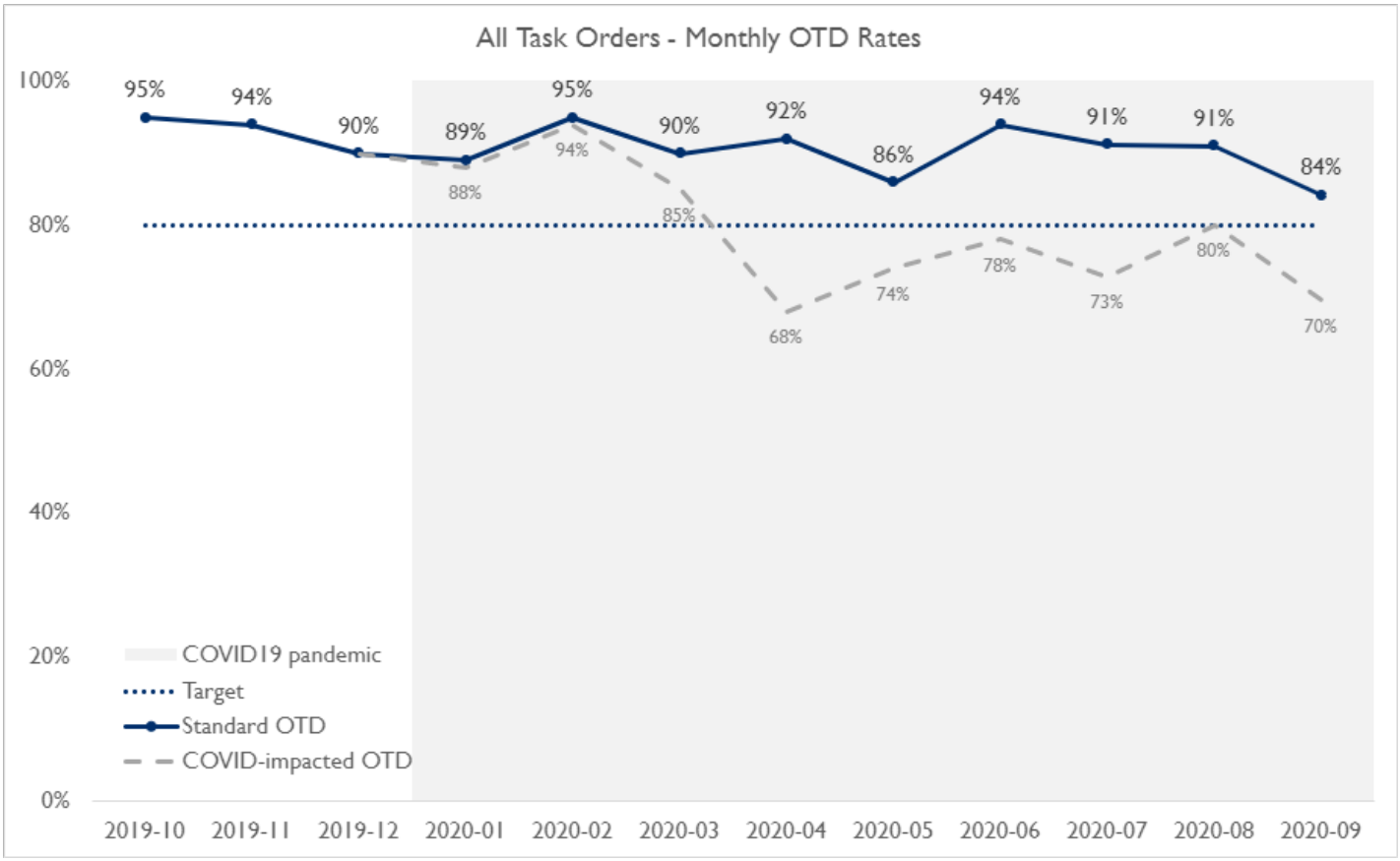
Achieved **on-time delivery**[1] **(OTD) of 88 percent (74 percent COVID-impacted)** and **on-time, in-full delivery (OTIF) of 87 percent (69 percent COVID-impacted)** and the backlog of late orders increased to near 6 percent (see Exhibit 1).

OTD and OTIF rates lowered, but stayed relatively strong for all health areas during Q4 despite COVID-19. OTD was 88 percent (74 percent COVID-impacted) and OTIF was 87 percent (69 percent COVID-impacted) for the quarter, the sixth successive quarter that OTD and OTIF have been above 85 percent). OTD was 89 percent (68 percent COVID-impacted) for HIV; 97 percent (75 percent COVID-impacted) for malaria; 94 percent (87 percent COVID-impacted) for FP/RH; and 89 percent (87 percent COVID-impacted) for maternal, newborn, and child health (MNCH) medicines and commodities, each of which

[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.

exceeded the contract's 80 percent quarterly target. GHSC-PSM continues to conduct root-cause analysis of late deliveries and to refine procurement and supply-chain processes to continuously improve performance.[2]

Exhibit 1. OTD October 2019–September 2020

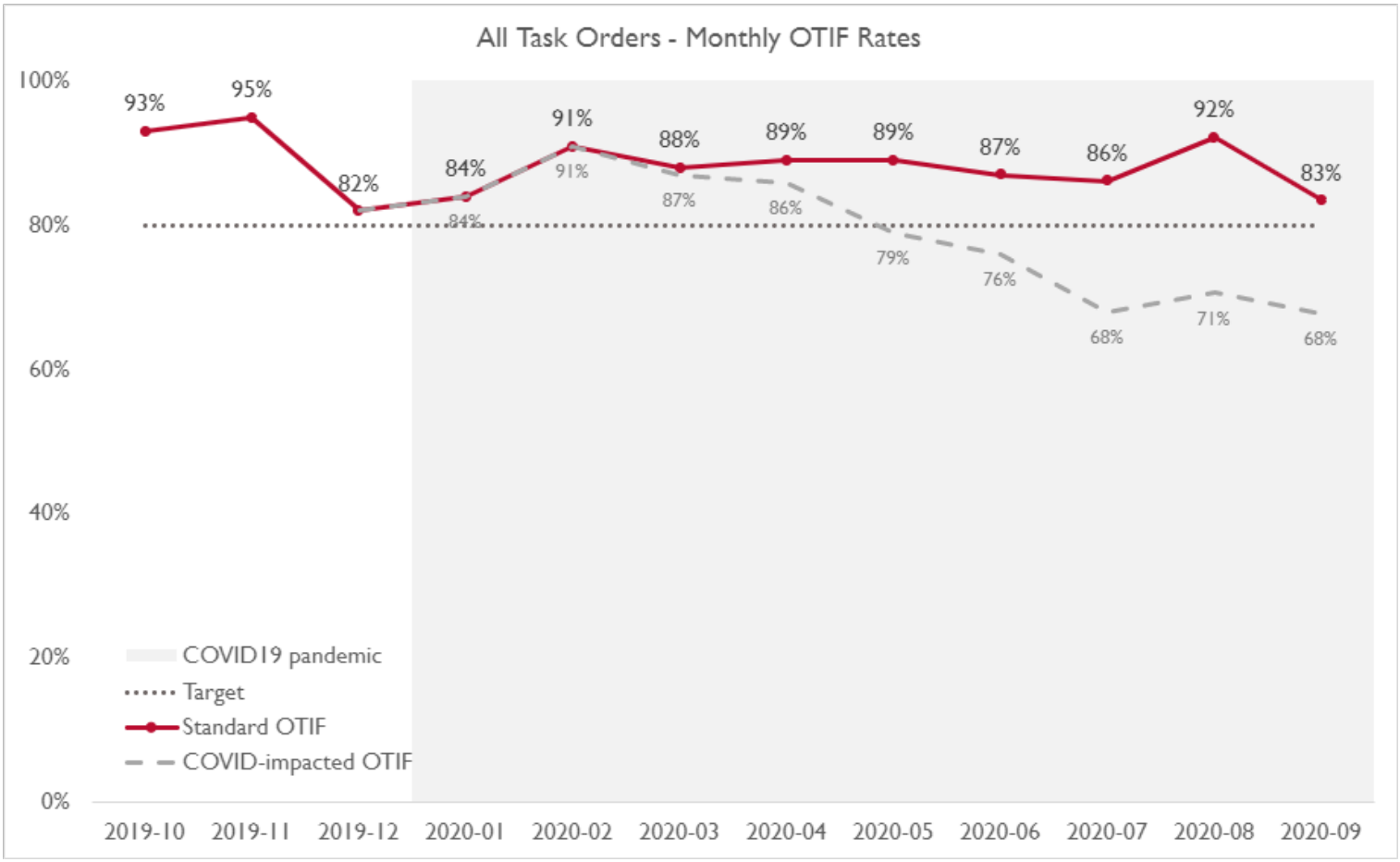



The project continued to feel the brunt of pandemic-related disruptions in Q4 FY 2020. (See Exhibit 2.) The initial impact in China primarily affected the supply of active pharmaceutical ingredients, key starting materials, and other raw materials. Orders planned for delivery in January and February were largely in later stages of manufacturer fulfillment and were delivered on-time. However, as the pandemic escalated, the number of impacted orders started to rise because of supplier and logistics impact. This impact has been the longest on viral load/early infant diagnosis (VL/EID) commodities with suppliers prioritizing manufacturing of

[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.

COVID-19–related products. While the impact of COVID-19 on manufacturing operations and logistics has eased since the start of the pandemic, operations are still not close to pre-COVID conditions; on-time delivery performance is expected to be significantly disrupted over the next several months.

Exhibit 2. OTIF October 2019–September 2020




Significant efforts were made in Q4 to stem the initial impacts of COVID-19 on freight and logistics as deliveries faced a shipping environment defined by historic COVID-19 shutdowns. The project continues to adapt to unforeseen shifts in the marketplace.

## Value to the U.S. Taxpayer and the U.S. Government's International Health Programs

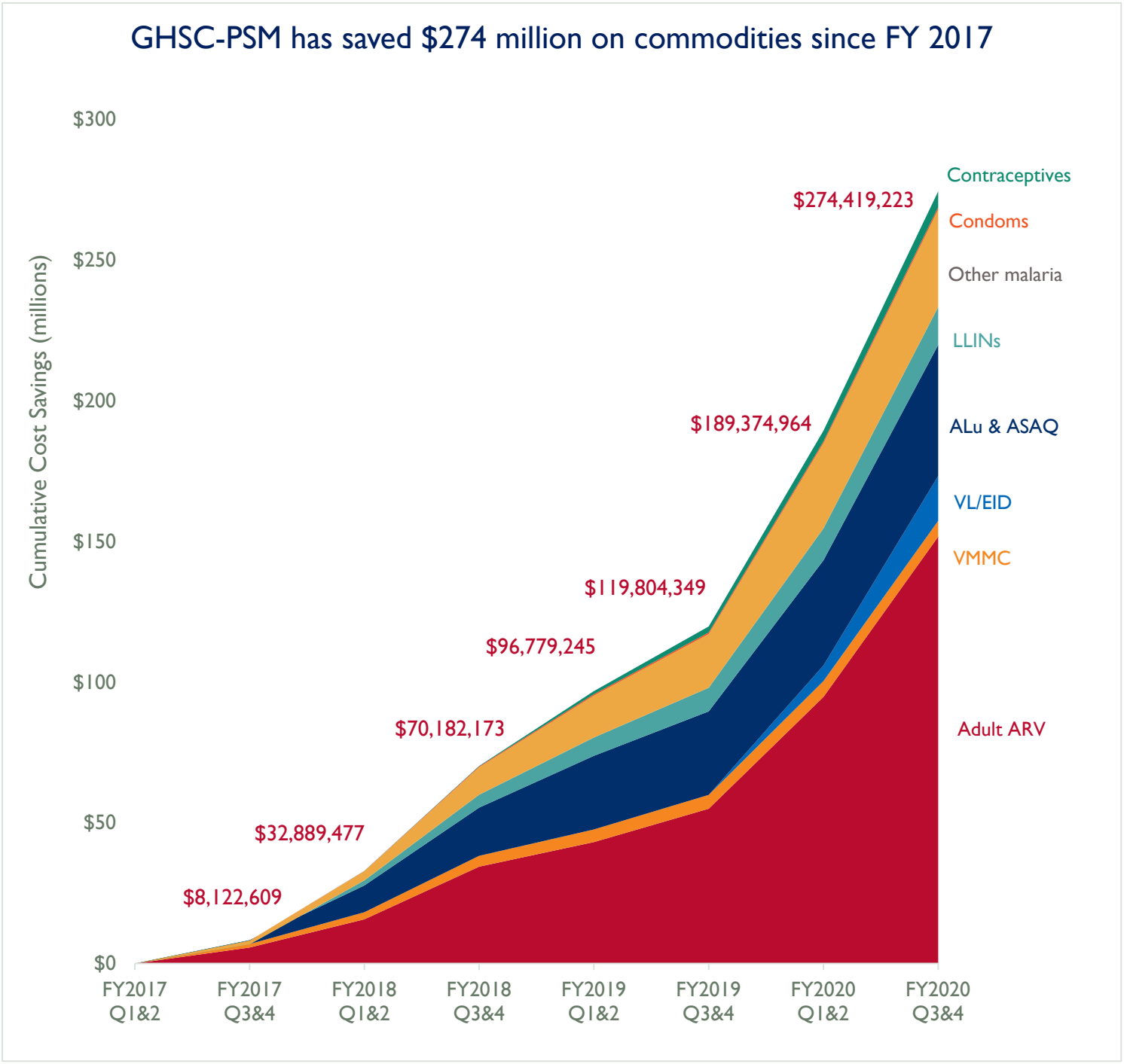
GHSC-PSM works to achieve best value for the U.S. taxpayer by implementing approaches that result in lower costs for commodities and freight.

### *Cost-savings on medicines and health commodities*

GHSC-PSM conducts regular and detailed analysis to understand the markets for the medicines and health commodities we procure and to bring this knowledge to negotiations with suppliers. Through carefully negotiating long-term contracts with suppliers, for major product groups, including VL testing this year, the

project has saved $274.4 million on commodities over the life of the project, including $154.6 million in FY 2020, as shown in Exhibit 3[3].

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




[3] Cost-savings are calculated based on orders placed in the period. Cost-savings values in those periods may be updated to reflect any subsequent changes to those orders.

To produce long-term value and sustainability, GHSC-PSM achieved these cost-savings while working to ensure suppliers will maintain their interest in the market, and expanding the number of suppliers in many commodity categories such as condoms and mRDTs, so the USG can benefit from a competitive supplier base. This analysis appears in Section C1b.

***Cost-savings on logistics***

GHSC-PSM saved $31.2 million on logistics over the life of the project. GHSC-PSM saves money on logistics by managing through a fourth-party logistics (4PL) model that competes lanes between shipping companies (known as third-party logistics providers, or 3PLs) to improve service and reduce costs. This leads to cost-savings on shipping rates from an alternative approach with limited or no competition for shipping lanes (a simple 3PL approach) through scale and competition.

As of April 2019,[4] logistics savings were calculated as the difference between the rates awarded to the selected 3PL and the average of the two most expensive 3PLs.[5] This method provided a comparison for all shipping lanes and simulates the rates that would likely be obtained under a non-competitive, 3PL model. Based on this methodology the project generated $20.3 million in cost-savings because of open competition for freight lanes.

| Task Order | Benefits of Competing Freight Lanes |
|---|---|
| Task Order 1 | $13,959,044 |
| Task Order 2 | $5,841,653 |
| Task Order 3 | $525,171 |
| Task Order 4 | $23,880 |
| Grand Total | $20,349,749 |

In April 2020, GHSC-PSM recognized that the airfreight market rates were increasing rapidly because of the COVID-19 pandemic. As a result, the project, in consultation with USAID, decided to manage air shipment pricing under a spot bid model and review ocean shipment case by case with the expectation that there would be nominal impact on that pricing. During this time, the project placed a hold on the Annual 3PL Rate Refresh. The ocean rate refresh will be undertaken in Q1 FY21 and the airfreight refresh later in the year when the market settles. Because the benchmark for calculating the Benefit of Competing Freight Lanes relies on the Annual 3PL Rate Refresh, the project cannot report on the quantitative cost-savings of these benefits for the GHSC-PSM FY 2020 IDIQ Annual Report and the GHSC-PSM FY 2021 IDIQ Semiannual Report. However, many notable benefits were observed during this time and are documented throughout this report.

GHSC-PSM saved money on logistics through optimizing the project's network of regional distribution centers (RDCs). Savings are generated through:

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

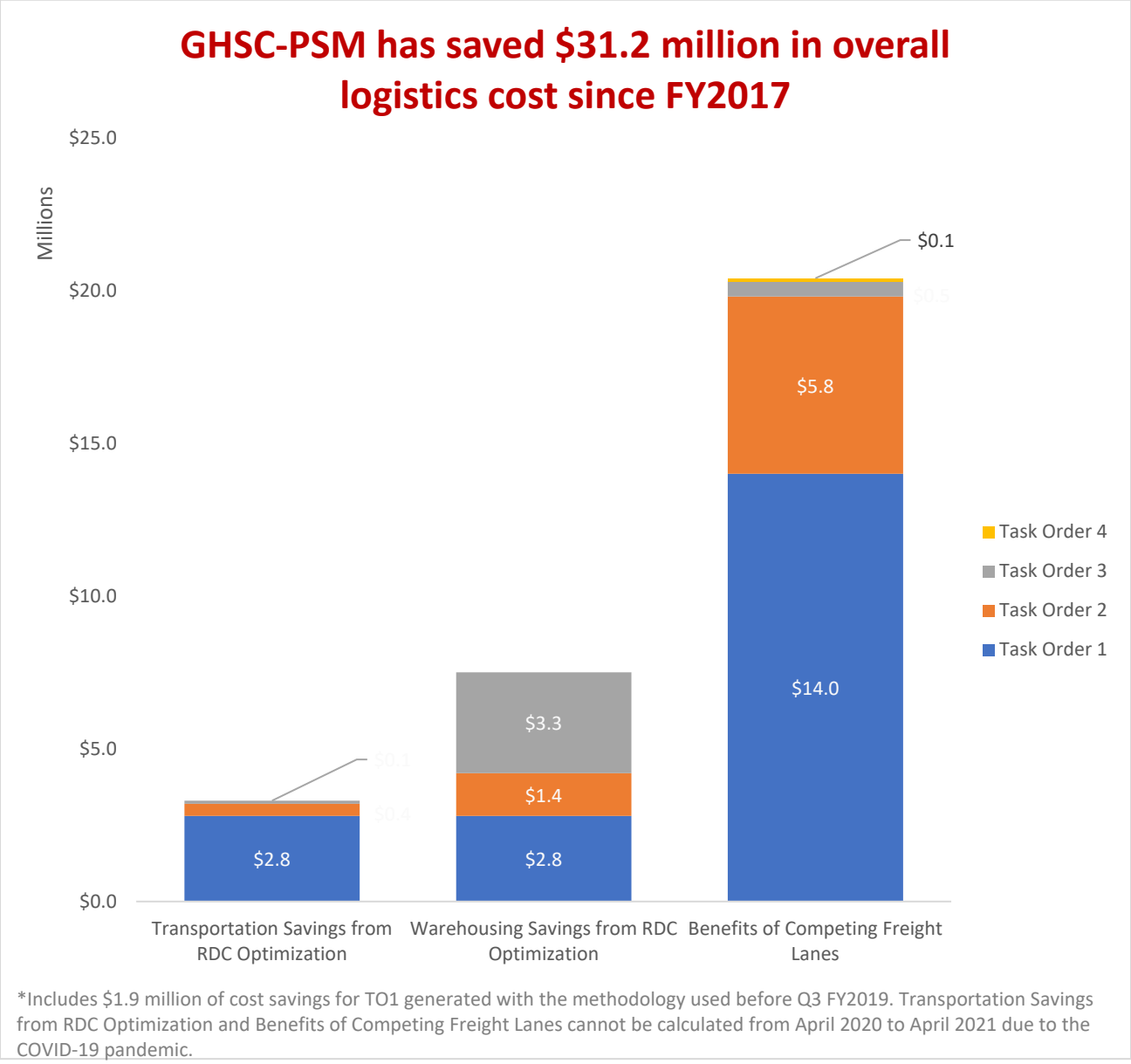
[4] From FY 2017 through Q2 2019, the benchmark for comparison was the quoted rates on shipping lanes from the shipping company that handled the majority of shipments at the inception of the project. Cost-savings were captured only for the HIV/AIDS Task Order. Total cost-savings generated during this period was $1,942,009. For a more detailed narrative surrounding this methodology, please refer to Q4 FY2019 Annual Report.

[5] The two 3PLs used for creating the benchmark can vary depending on how many quotes were submitted for a given lane.

The project also saved money on freight by implementing a 4PL model, competing all lanes and actively managing four 3PLs that service more than 7,100 lanes. The scale of the opportunity attracted many qualified freight-forwarders, and the competition drove down prices. More information on this analysis appears in Section C1b.

Total cost-savings on logistics to date were $31.2 million, which includes $10.8 million in transportation and warehousing costs from optimizing the RDC network, and $20.3 million from competing freight lanes. (See Exhibit 4.)

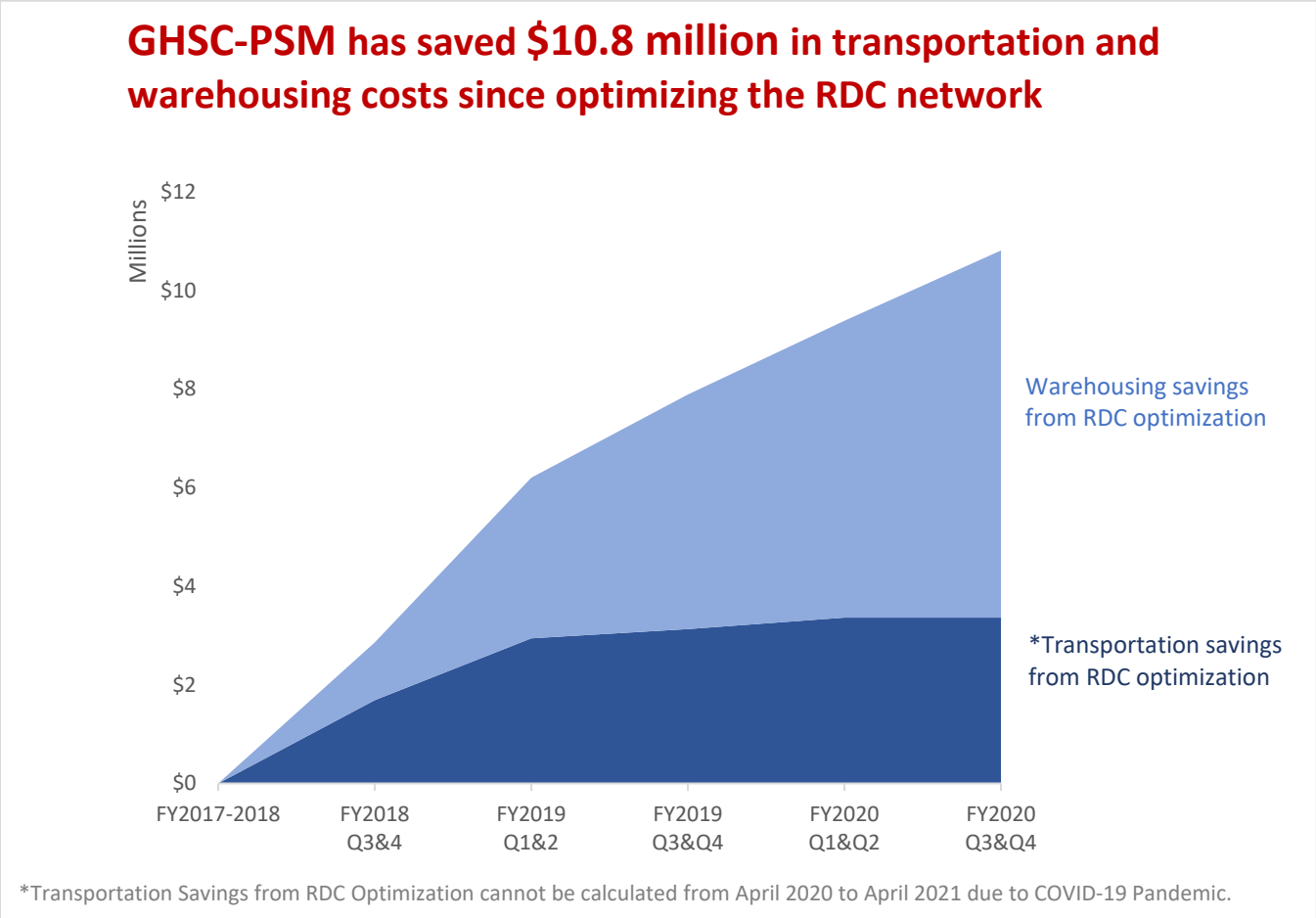
Exhibit 4. Logistics Cost-savings Breakdown




*Includes $1.9 million of cost savings for TO1 generated with the methodology used before Q3 FY2019. Transportation Savings from RDC Optimization and Benefits of Competing Freight Lanes cannot be calculated from April 2020 to April 2021 due to the COVID-19 pandemic.

GHSC-PSM saved $10.8 million in transportation and warehousing costs since optimizing the RDC network. In Exhibit 5, the light blue represents warehousing savings from RDC optimization, and the dark blue represents transportation savings from RDC optimization.

Exhibit 5. RDC Optimization Cost-savings




## Health Areas

GHSC-PSM provides procurement services and technical assistance to strengthen supply chains and promote global collaboration for the U.S. Government's programs for HIV/AIDS, malaria, FP/RH, MNCH, and emerging health threats. We provide highlights of project achievements below.

### *HIV/AIDS*

***TLD cost-savings.*** Throughout FY 2020, GHSC-PSM continued to generate TLD cost-savings for patients. Rather than setting an annual cost, which would have fixed the price at $72 per patient, the project competed the preferred first-line ARV on a quarterly basis and negotiated a price of $61 per patient. For more information see section B1. HIV/AIDS.

***Scaling up multi-month dispensing (MMD).*** MMD packages for first-line treatment of tenofovir/lamivudine/dolutegravir (TLD) became even more critical during the pandemic. While GHSC-PSM was already procuring and delivering 90-count and 180-count bottles of TLD early in FY 2020, by the end of the fiscal year, the project had rapidly scaled up MMD and delivered more than 13 million bottles of TLD to 20 countries. For more information see section B1. HIV/AIDS.

GHSC-PSM has delivered enough anti-retroviral therapy to provide nearly **10.6 million patient-years of HIV treatment to date.**

This includes **5.9 million patient-years of TLD treatment delivered to date.**

***Standardizing service-level agreements.*** GHSC-PSM implemented global contracts with three main viral-load (VL) and early infant diagnosis (EID) manufacturers to procure reagents and consumables while also including service and maintenance requirements. These agreements are generating an estimated savings of $15 to $20 million per year on average. For more information, see section B1. HIV/AIDS.

***Reducing processing cycle times.*** Throughout FY 2020, GHSC-PSM used automated allocation tools and streamlined sourcing strategies to reduce processing cycles times for essential medicines and voluntary medical male circumcision kits. Overall, the order processing cycle time for voluntary medical male circumcision (VMMC) kits was reduced by three weeks. For more information, see section B1. HIV/AIDS.

***Meeting HIV treatment goals.*** In Q4, GHSC-PSM delivered nearly 1.1 million patient-years of adult ARV, despite supply-chain interruptions and delays posed by COVID-19. For more information, see section B1. HIV/AIDS.

***Preparing for the transition to doultegravir (DTG) 10mg.*** As GHSC-PSM awaits the U.S. FDA's approval of the new DTG 10mg dispersible tablet for optimized pediatric treatment, the project worked with four PEPFAR countries to model scenarios and better prepare for the transition once it begins. For more information, see section B1. HIV/AIDS.

***Mitigating VL testing impacts.*** VL suppliers continued to report reagent and consumable manufacturing constraints because of COVID-19. To address these challenges, GHSC-PSM held bi-weekly order management calls with VL suppliers to identify solutions and ensure uninterrupted testing for people living with HIV. For more information, see section B1. HIV/AIDS.

### *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 to improve strategic planning, logistics, data analytics, and capacity building while providing global leadership in supply, demand, financing, and product development. (See box.)

To date, GHSC-PSM has procured $722.5 million in malaria medicines and commodities **for 30 countries.**

This includes **treatment for 28.5 million infections in Q4.**

In FY 2020, GHSC-PSM facilitated the distribution of 32 million **LLINs** in 13 countries.

***Commodity risk profile.*** In FY 2020, the COVID-19 pandemic significantly impacted many GHSC-PSM suppliers, creating additional risk and lengthening lead times. To proactively manage this, GHSC-PSM segmented commodities by volume and programmatic impact to evaluate and develop commodity risk profiles. The profiles, updated monthly, examine the geographical sourcing of commodities, market and supplier-specific impact on production, and sourcing of key starting materials, raw material, and packaging materials, to mitigate and minimize near-term and long-term supply disruptions.

***On-time delivery.*** GHSC-PSM achieved consistently high OTD performance for malaria drugs and commodities in Q4—97 percent (76 percent COVID-impacted) for the quarter. For more information, see section B2. Malaria.

***Sourcing and procurement strategies.*** The impact of COVID-19 on upstream malaria commodity supply chains continued during Q4. In FY 2020, GHSC-PSM conducted assessments developing mitigation strategies for maintaining critical products' availability, responded to a major market shift with malaria rapid diagnostic tests (mRDT) and collaborated with global partners to address urgent supply constraints. The project issued a short-term tender to diversify supply and meet expected demand for FY 2021. For more information, see section B2. Malaria.

***Quality assurance (QA).*** In FY 2020, the Quality Assurance Management System, which provides real-time malaria commodity QA data to inform planning and decision-making for shipments and other activities, was made fully operational. The project implemented modified QA processes to mitigate the impacts of COVID-19 and reduce lead times. The project also addressed quality concerns with two long-lasting insecticide-treated net (LLIN) manufacturers and a rapid diagnostic test (RDT) manufacturer resulting from their poor quality management processes. The project concluded one manufacturer LLIN investigation who produced LLINs using a process that was not WHO approved. For more information, see section B2. Malaria.

***Global standards.*** GHSC-PSM has been closely coordinating with Global Fund to support suppliers to meet the deadlines for compliance with GS1 standards. In Q4, the project held a series of webinars to educate and prepare LLIN suppliers to reach key milestones. The deadline for Phase 1 for LLIN suppliers passed in Q3; targeted compliance of 50 percent was achieved. For more information, see section B2. Malaria.

***Reprioritization of Stock Based on Stock Out Data.*** In FY 2020, GHSC-PSM prioritized orders based on need and exchanging goods availability dates (GADs) with suppliers for specific countries in more dire need of stock based on data submitted. By working with countries and suppliers, the procurement team was able to swap orders based on stock data. To improve stock status. In FY 2020, 29 countries submitted data to the Procurement Planning and Monitoring Report for malaria (PPMRm). The PPMRm collects and reports information on stock status and host governments' and other donors' shipments. The visibility into stock status and shipment information enables PMI, the project and countries to prioritize, expedite, transfer, or delay procurements or shipments and facilitate the review of forecasts and supply plans to optimize procurements. The project began upgrading the platform in Q2 to capture more information and streamline reporting with automated features expected to increase the accuracy and timeliness of reports.

***Distribution of LLINs.*** In FY 2020, many countries continued to deliver LLINs for continuous distribution, and a few launched or continued large-scale LLIN distribution campaigns as a key malaria prevention strategy. However, many campaigns were delayed because of COVID-19. A total of over 32 million LLINs were distributed to protect over 64 million people in 13 countries (Angola, Burma, Cameroon, Ethiopia, Ghana, Liberia, Malawi, Mozambique, Niger, Nigeria, Rwanda, Sierra Leone, and Uganda) in FY 2020. The project also supported planning, construction, and improvements of warehouses for the LLINs, which require large storage space with controlled temperature to maintain quality. For more information, see section B2. Malaria

***Family Planning and Reproductive Health***
GHSC-PSM's support for USAID's voluntary FP/RH programs achieved several major milestones in Q4 and throughout FY 2020. For more information, see section B3: Family Planning and Reproductive Health.

***On-time delivery.*** GHSC-PSM delivered 94% percent (86 percent COVID-impacted) of FP/RH commodities on time in Q4. For more information, see section B3: Family Planning and Reproductive Health.

To date, GHSC-PSM has delivered more than 302.5 million contraceptives to supported countries. These contraceptives, when combined with proper counseling and correct use, are estimated to **provide 73 million couple years of protection.**

This includes **5.9 million couple-years of protection** in Q4.

***Collaboration with global stakeholders.*** In Q4, the project continued to build global partners' awareness of and support for the U.S. Government's FP/RH priorities and programs, and to support USAID's leadership in FP/RH commodity availability through the following actions:

- The project provided ongoing support for the strategic development of the Global Family-Planning Visibility and Analytics Network (GFPVAN). It continued a new initiative with the United Nations Population Fund (UNFPA) to identify mechanisms to harmonize the exchange of program commodity demand data.
- GHSC-PSM's Procurement Planning and Monitoring Report (PPMR) team received and processed 242 reports from 36 countries and 68 programs. In total, over 367 inventory issues were routed through the PPMR workstream and addressed during the year.
    - The project fully transitioned the PPMR to Reproductive Health Supply Coalition while serving as a key player in supporting the development and implementation of the GFPVAN by training in-country stakeholders to access the platform shipment data and share information in support of collaborative supply planning.
- In Q4, GHSC-PSM released a report on last-mile market research to identify and categorize existing international dynamic routing offerings. The project reviewed past performance and experiences in the last-mile market, conducted interviews with select providers, and synthesized the findings to develop a comprehensive list of offerings and insights on current trends.

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

***Contraceptive security tracking.*** GHSC-PSM finalized its report on the 2019 Contraceptive Security Indicators Survey (CS Survey). In Q4, the project began disseminating the survey results to partners through virtual presentations and other online forums, an emphasis on how to navigate the dashboard and how to

use the data. The survey results are intended to enable decision-makers in countries and the global health community to monitor progress towards contraceptive security and inform policies, program planning, and advocacy for increased resources. For more information, see section B3: Family Planning and Reproductive Health.

***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 providing global technical leadership on such commodities.

To date, GHSC-PSM has delivered **$12.4 million** in maternal, newborn and child health commodities, including **$1.2 million to seven countries in Q4**.

***Delivering commodities***. In Q4, GHSC-PSM delivered nearly $1.2 million in MNCH drugs and commodities. For more information, see section B4: Maternal, Newborn, and Child Health.

***Improving the availability of quality oxytocin and other uterotonics.*** The project supported the governments of Ghana, Liberia, Malawi and Mozambique to improve the availability of quality oxytocin throughout FY 2020. These efforts resulted in increased oxytocin reimbursement prices in Ghana, including additional misoprostol quantities for postpartum hemorrhage (PPH) in Liberia's national quantification and oxytocin quality degradation analysis in Mozambique.

At the global level, the project co-authored a peer-reviewed journal article that documents the latest information on oxytocin quality risks and outlines cold chain and oxytocin management and manufacturing best practices. For more information, see section B4: Maternal, Newborn, and Child Health.

***Improving MNCH data availability and use.*** The project supported End-Use Verification (EUV) survey data collection and analysis on MNCH commodities in Benin, Burkina Faso, Democratic Republic of the Congo, Ethiopia, Ghana, Guinea, Liberia, Mali, Nigeria and Zambia, though six reports were delayed because of COVID-19 lockdowns in Q3. With virtual assistance, all six countries resumed data collection in Q4 and the project piloted new oxytocin storage questions in Liberia. GHSC-PSM also surveyed 15 countries in FY 2020 to gauge to what extent MNCH commodities are included in national LMISs and determine where support could be provided to improve MNCH data quality and use. The survey results were used to design a follow-on activity focused on creating an MNCH data use and analytics tool catalog. For more information, see section B4: Maternal, Newborn, and Child Health.

***Improving Newborn and Child Health (NBCH) commodity management and availability.*** Throughout FY 2020, Liberia and Mali have acted on GHSC-PSM recommendations to improve availability and ensure the quality of select NBCH commodities. Mali now lists amoxicillin dispersible tablets (DT) in their national policies as the preferred treatment for childhood pneumonia and has dedicated resources to procure, manage, and track amoxicillin DT and oral rehydration salts (ORS) co-packaged with zinc. Similarly, in FY 2020, Liberia quantified NBCH commodities for the first time, procured and began to distribute amoxicillin DT to facilities, and plans to integrate amoxicillin DT as well as ORS-zinc co-pack into its Reproductive Health Program commodities list to dedicate resources for their procurement and management. For more information, see section B4: Maternal, Newborn, and Child Health.

***Working with the private sector to ensure the quality of MNCH commodities.*** In FY 2020, GHSC-PSM completed its assessments of private wholesaler capacity in Mozambique and Zambia to supply quality-assured MNCH commodities. Following the assessments, the project interviewed 14 technical experts in Q4 to gain a global view of these wholesalers and their role in health supply chains. As a result, the project will

work to strengthen wholesaler associations in FY 2021. For more information, see section B4: Maternal, Newborn and Child Health.

***Providing global MNCH leadership.*** Throughout FY 2020, GHSC-PSM worked with partners to update global MNCH commodity quantification guidance for countries to use when supply planning (originally developed by the UN) and will support disseminating this guidance in FY 2021. The project published guidance on the impact of COVID-19 on MNCH commodity supply, including recommendations to mitigate interruptions delays and develop more detailed guidance and provide targeted support to countries during the pandemic. Finally, the project presented lessons learned at several global MNCH and PPH forums throughout FY 2020. For more information, see section B4: Maternal, Newborn, and Child Health.

***Other Emerging Health Threats***
In Q4, GHSC-PSM delivered 160 thousand bottles of mosquito repellent to Ecuador. For more information, see section B5 Other Emerging Health Threats.

***Emergency supply-chain preparedness (ESCP)***. In Q4, GHSC-PSM conducted emergency supply-chain workshops in Peru and the Caribbean. The project led activities to support the institutionalization of ESCP (beyond Zika response) in the Dominican Republic, including advocacy and policy recommendations, which led the MOH to establish a cross-agency ESC committee. For more information, see section B5: Other Emerging Health Threats.

### Strengthening Health Institutions

GHSC-PSM manages 34 country or regional offices. Supported by headquarters-based experts, these offices provide wide-ranging technical assistance to strengthen national health supply chains.

COVID-19 began to significantly affect the program in late Q2, with travel restrictions and other public health measures greatly limiting in-person training and other capacity-building activities. Staff based in the U.S. shifted to remote support for all activities. This shift to remote support included many forecasting and supply planning activities, training programs, and even supportive supervision where internet and cellular connectivity allow. GHSC-PSM also evaluated various learning management systems to support requests from country programs seeking online learning opportunities, aiming to match the most appropriate platforms with various learning needs. The ability to conduct in-person activities varies from country to country, depending on public health policies and restrictions, GHSC-PSM's policies, connectivity, and local transmission levels.

Meanwhile, several years of investment in strengthening supply-chain systems yield important innovations and positive results on many fronts. Examples include:

- In **Indonesia**, a recording of a virtual eLMIS training program received more than 20,000 views and 100 questions on YouTube. The event provided two options for attendance, with 1,000 attending by Zoom and 2,700 by YouTube.
- In **Pakistan**, GHSC-PSM supported the first-ever long-term (five-year) forecast for the districts of Charsadda, Lakki Marwat, Mohmand, and Swat. The forecast will be used by the provincial government of Khyber Pakhtunkhwa to advocate for a significant increase in its financing for public health commodities.
- In **South Sudan**, GHSC-PSM developed a call center application—based on private-sector technology—that works with Voice over Internet Protocol (VoIP) and the local cellular network to call health facilities and capture national stock supply data to improve the availability and quality of

data for family-planning commodities and ensure that supplies are consistently available at service delivery points (SDPs).

- In **Zambia**, GHSC-PSM designed and deployed four customized advanced analytics tools through a remote engagement model that allowed the work to continue without interruption and or the need for international travel. In addition to replacing time-consuming, manual processes, these tools facilitate speedy action to prevent supply risks. These remote solutions are ideal for supply-chain management during the COVID-19 pandemic. The tools were designed to be automated and to be easily deployable in other countries' contexts.
- In **Zimbabwe**, GHSC-PSM developed an innovative analytics approach using linear regression to determine the seasonality pattern of malaria commodities, overcoming quarterly data limitations for this kind of analysis. The model predicted that elimination sites (those in areas close to malaria elimination) receiving a relatively small quantity of seasonal malaria commodities would have a less than five percent chance of stockout. The relatively small investment would amount to less than two percent of the malaria commodities distributed nationwide.

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

SECTION A

# 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 their 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[6]) 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. In FY 2020, the project procured commodities or provided TA to 62 countries (see Exhibit 6 below).

## A2. About This Report

We are pleased to present our performance report for FY 2020 (October 1, 2019 through September 30, 2020). 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 and context indicators** for July 1 through September 30, 2020 (quarterly indicators) and October 1, 2019 to September 30, 2020 (annual indicators).

[6] 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.

Given the size and complexity of GHSC-PSM, this report summarizes our primary efforts and achievements in FY 2020. It reflects only a fraction of the project's efforts each day to help people around the world live healthier lives.

Exhibit 6. Countries for which GHSC-PSM procured commodities (proc.) or provided technical assistance (TA) in FY 2020 (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 | ● | | Republic of the Union of Myanmar | ● | ● |
| 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 | ● | ● | | | |

SECTION B

# PROGRESS BY HEALTH AREA

In this section, we summarize 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 anti-retrovirals (ARVs) to provide **10.6 million patient-years of HIV treatment over the life of the project,** including nearly **1.1 million patient-years of treatment in Q4**.

To date, GHSC-PSM has delivered more than **41.7 million bottles of tenofovir/lamivudine/dolutegravir (TLD)** to 41 countries, which would provide more than **5.9 million patient-years** of treatment for adult patients.

**Multi-month dispensing** packages of TLD first-line treatment accounted for **88 percent of all quantities delivered** in Q4.

**A total 41 countries procured HIV/AIDS medicines and commodities and received health supply-chain systems strengthening** with HIV/AIDS funding.

Thanks to multi-month dispensing (MMD) patients have likely saved **more than 8.4 million trips** to the pharmacy in Q4 and **28.9 million over the life of the project**.

GHSC-PSM brought **improved product visibility** into HIV commodities in **105 central and regional warehouses in 23 PEPFAR countries and 8,812 health facilities** in **10 PEPFAR countries**.

In Q4, **17 countries** procured **23.6 million viral-load tests** to support testing scale-up, while viral-load and early infant diagnosis contracts have generated **$16.8 million in savings through Q4**.

### Introduction: Reflections on FY 2020

FY 2020 began on an upbeat note. GHSC-PSM delivered 29 million bottles of tenofovir/lamivudine/dolutegravir (TLD) to 21 countries to facilitate transitioning fully to TLD, a key PEPFAR priority. The project regularly engaged with USAID and other global donors as well as Ministries of Health and clinical partners to share TLD transition updates and data, while continuously working on drawing down on legacy ARVs.

Also, GHSC-PSM generated cost-savings on TLD throughout the transition. As a relatively new drug on the market, the project anticipated that TLD cost per patient would likely fluctuate over time. To leverage potential savings, rather than set an annual cost, GHSC-PSM competed this preferred first-line ARV on a quarterly basis. A fixed annual price would have been set at $72 per patient compared with $61 GHSC-PSM negotiated in Q3. By taking this approach, the project saved an estimated $7.6 million over the course of FY 2020.

As the Q1 FY 2020 ended and Q2 began, the project became acutely aware of COVID-19's potential and growing impact on the global health supply chain. In February, the project established a COVID-19 Management Task Force to monitor, manage, and to the extent possible, mitigate the impact of the pandemic as it began to affect GHSC-PSM's supply of active pharmaceutical ingredients (APIs) and key starting materials for ARVs from China. As COVID-19 spread further outside of China into Europe and India, the supply of finished products such as reagents, condoms, ARVs, and essential medicines was also threatened.

GHSC-PSM's COVID-19 management task force worked with suppliers to move up the goods availability date (GAD) for TLD and brought forward several RDC orders for different HIV/AIDS commodities, thus accelerating their distribution. GHSC-PSM also worked diligently with in-country partners to secure import waivers and ensure customs clearance could be expedited for product delivery. Also, GHSC-PSM provided suppliers with long-term supply plans and encouraged them to stockpile commodities to enable a more resilient supply chain and to weather COVID-19 impacts.

PEPFAR-supported countries adopted a deliberate strategy of accelerating multi-month dispensing (MMD) to get larger quantities of ARVs into the hands of patients much earlier than originally planned and before country lockdowns may have prevented distribution. A key tool GHSC-PSM used to help plan for this acceleration was the Multi-Month Simulation tool, enabling national stakeholders to run MMD simulations and determine the optimal strategy for their country. At the global level, these tools allowed the project to analyze the total impact of MMD acceleration and to act quickly.

Armed with the analytics results, GHSC-PSM quickly realized that additional and significant procurements were required. In March the project immediately went back out to the market and firmed up an additional 4.2 million 90-count TLD bottles (totaling $66 million). Also, GHSC-PSM pushed through another 158 orders for other ARVs that totaled $109 million. This early and aggressive action enabled manufacturers to secure supplies of the necessary raw materials in a difficult market. Importantly, it also secured additional supplies to top up national supply chains that had themselves responded so aggressively to deal with the pandemic.

Finally, at the country level, GHSC-PSM provided continuous support in FY 2020 to USAID missions to ensure they have the necessary HIV/AIDS commodity data, analysis, and forecasting models for the upcoming year. This helps to directly inform and support planning for PEPFAR's Country Operational Plans.

In the wake of the pandemic's impact on the supply chain, GHSC-PSM continued to meet and sometimes exceed its performance targets:

- ***Reducing prices, enhancing performance, and standardizing service-level agreements for early infant diagnosis and viral-load testing.*** Leveraging PEPFAR's global reach, GHSC-PSM implemented global contracts with three key suppliers of viral-load and early infant diagnosis (VL/EID) reagents and consumables. The contracts cover procurement of reagents and consumables as well as regular, detailed maintenance and service requirements to improve network performance, address equipment breakdowns, and reduce service interruption for HIV laboratory diagnostic equipment. This new framework transforms how PEPFAR and international funders work with countries to manage their VL/EID testing programs through standardized reporting and allows for direct and automated reporting of testing operational data. See box at right for cost-savings.

**Standardizing Service-Level Agreements**

Global VL and EID agreements with three key suppliers are generating an estimated savings of approximately **$15 to $20 million per year ($2.50 per patient test)**.

- ***Scaling up MMD availability of ARVs.*** In the first quarter of FY 2020 alone, GHSC-PSM delivered 2.8 million units of cartonless 90-count TLD bottles to 10 countries and pre-positioned the product at RDCs to ensure deliveries to countries. By the end of FY 2020, the project had delivered 13.9 million 90-count bottles and more than 200,000 180-count bottles of TLD to 20 countries over the life of the project. The availability of MMD bottles of TLD reduced the number of patient visits to health facilities and allowed for appointment spacing between patients, while also saving patients' traveling time to their respective clinics and any potential lost wages.

Through MMD, patients have likely saved more than **28 million trips to the pharmacy** over the life of the project.

- ***Reducing cycle times for essential medicines and voluntary medical male circumcision (VMMC) kits.*** GHSC-PSM's automated allocation tools and streamlined sourcing strategies have resulted in reduced processing cycle times for essential medicines and VMMC kits. GHSC-PSM uses these tools and assesses allocations according to several criteria, including tiered kit pricing, landed lead times, supplier past performance, freight costs, and container optimization, which in turn are ensuring appropriate and expeditious order allocation. The overall order processing cycle time for VMMC kits was reduced by three weeks as compared to VMMC kit orders placed under FY 2019 fixed-price agreements.

- ***Reducing essential medicines cycle time and improving on-time delivery performance.*** In August 2019, GHSC-PSM finalized new long-term agreements (LTAs) with six key wholesalers focusing on reducing cycle time and improving on-time delivery through a streamlined sourcing strategy and an improved automated allocation tool. Orders placed under this LTA structure resulted in a 12.7 percent reduction in cycle time compared to orders placed under the previous LTA structure. Cycle time is measured from the moment a procurement specialist receives an order through the process of order allocation and submission to the country office for approval. Under the current LTA, essential medicines OTD improved by 10 percent (from 85 to 95 percent).

Looking to FY 2021 and beyond, GHSC-PSM is preparing countries to transition to dolutegravir 10mg for optimized pediatric treatment while continuing with MMD for TLD and scaling up MMD for other commodities such as pre-exposure prophylaxis (PrEP). The application of other differentiated service delivery models including decentralized drug distribution will also be expanded on as the project continues to focus on a patient-centric, data-driven, and country-led global health supply chain for HIV/AIDS lifesaving commodities.

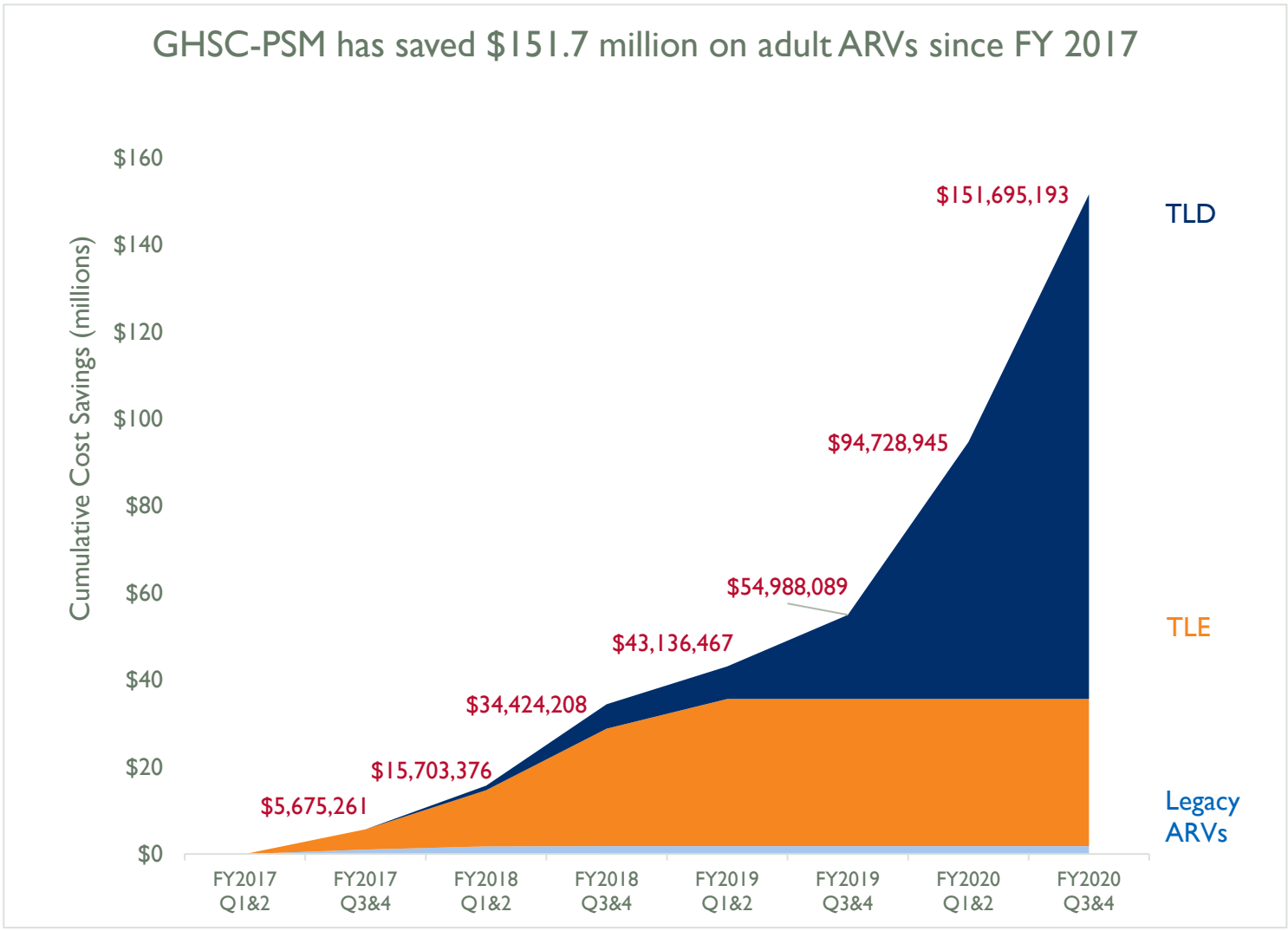
## Procurement

GHSC-PSM has procured more than $2.2 billion in HIV commodities over the life of the project, with $773.4 million worth of procurements in FY 2020. Adult ARVs made up 67 percent of all procurements by value in FY 2020.

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

GHSC-PSM's strategic sourcing activities generated significant cost-savings for PEPFAR and the countries and people served by its HIV programs. As shown in Exhibit 7, for adult first-line ARVs alone, GHSC-PSM saved $151.7 million over the life of the contract compared to established baseline prices, including $96.7 million in FY 2020. This fiscal year, the project shifted its strategy to seek new prices from its ARV vendors on a quarterly rather than an annual basis. The project can therefore secure better prices more frequently than in previous years. Also, GHSC-PSM has increased its procurement of 90-count bottles of TLD, in support of multi-month dispensing (MMD) approaches rolling out across many PEPFAR countries this year. The average per-tablet price in 90-count packaging was about 5.16 percent lower than the 30-count bottles in Q4, driving cost-savings as more TLD volume shifts in this direction.

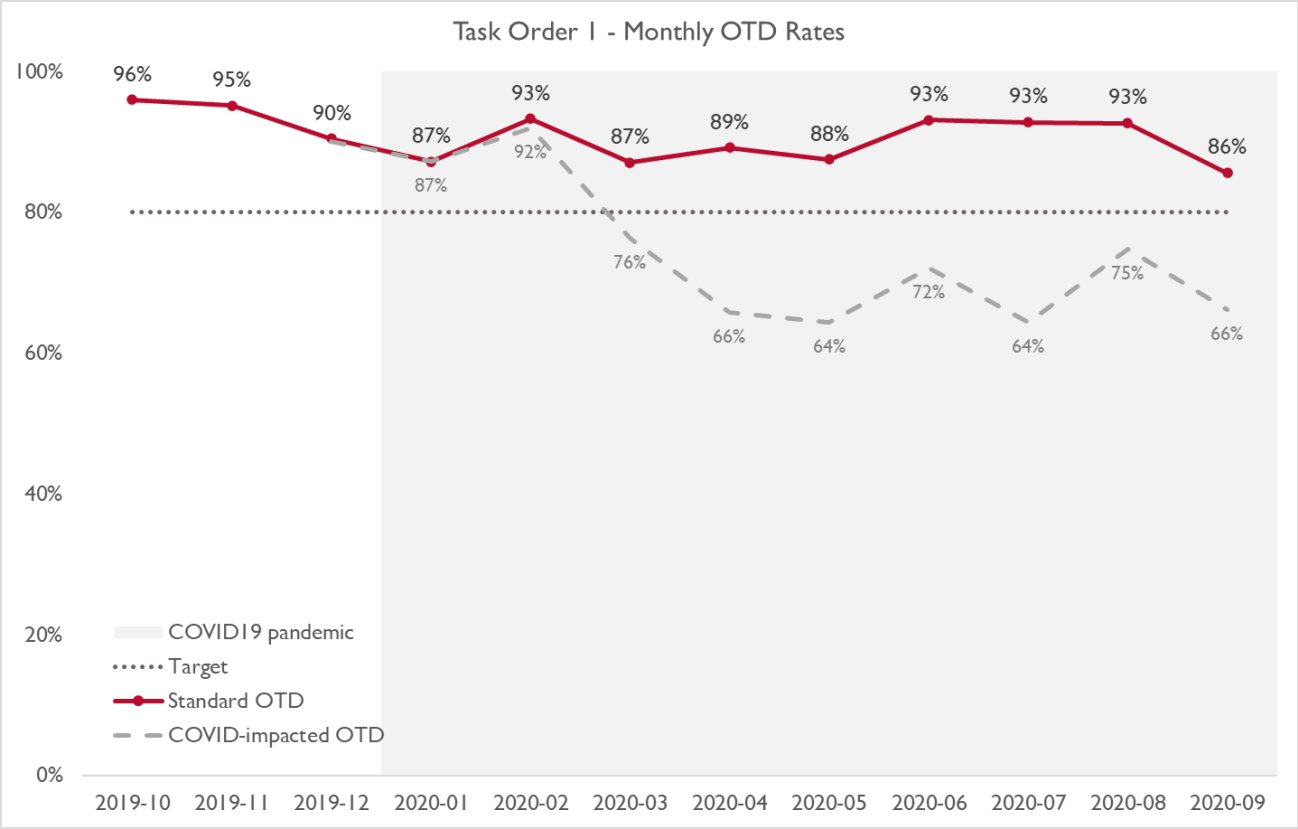
Exhibit 7. Life-of-Project Cost-Savings From GHSC-PSM Procurement of ARVs



## Deliveries

GHSC-PSM delivered $532 million in HIV commodities to countries in FY 2020. Timeliness of GHSC-PSM deliveries remained consistently strong for standard OTD over the reporting period, as shown in Exhibit 8. Despite COVID-19, in Q4, OTD was at 89 percent for HIV. GHSC-PSM's on-time in-full (OTIF) rate measures the percentage of deliveries during a given period delivered on-time and in-full. Delivery of late orders in a subsequent month to the agreed-upon delivery date drives down the OTIF rate, as can delivery of split shipments, which helps explain the difference between OTD and OTIF rates. For OTIF, project performance continued to exceed the target of 80 percent, averaging 87 percent over FY 2020. See Annex for further details.

Exhibit 8. HIV Commodities, OTD




## Supporting PEPFAR's HIV Prevention Agenda

***Pre-exposure prophylaxis***

Daily, oral PrEP using the anti-retroviral medicines tenofovir/emtricitabine (TE) or tenofovir/lamivudine (TL) dramatically reduces the risk of HIV infection in people who take it as directed. In Q4, GHSC-PSM delivered $2.4 million worth (more than 500,000 bottles) of PrEP to the Côte d'Ivoire, Democratic Republic of the Congo (DRC), Haiti, and Republic of Tanzania.

USAID also approved the procurement of more than $11 million of PrEP (2.8 million bottles) in Q4 in preparation for FY 2021 shipments to Botswana, Cameroon, Ethiopia, Haiti, Mozambique, Nepal, Nigeria, Rwanda, Tanzania, Ukraine, Vietnam, Zambia, and Zimbabwe.

***Condoms***

In Q4, GHSC-PSM finalized the male condom and lubricant sourcing event that will establish long-term agreements through the remainder of the project. To better ensure the project is working with ethical manufacturers, GHSC-PSM included a comprehensive social responsibility questionnaire in the request for proposal. The questionnaire was developed in collaboration with UNFPA, and covers areas such as human resource policy, labor standards, health, and safety assessments.

**Commodities Procured for HIV/AIDS Programs**

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

***VMMC kits***

As mentioned earlier, GHSC-PSM implemented new LTAs with four VMMC kit suppliers that enabled efficiencies in sourcing and procuring VMMC kits. By placing a strong emphasis on total landed cost—or the charge associated with getting a shipment to its destination—and container optimization, GHSC-PSM saw a 10 percent average reduction in the total landed cost per kit from orders placed under the previous LTAs. A significant contribution to cost reduction was the focus on consolidating reusable kit orders where 99 percent of reusable kits were shipped by ocean under the new LTAs compared to only 56 percent under the previous strategy.

In FY 2020, the number of USAID-approved orders for VMMC kits totaled $12.8 million for 1.6 million kits across10 countries. Approximately 30 percent of FY 2020 VMMC kits were delivered to countries, with another 40 percent expected to be delivered by the end of Q1 FY2021.

In August 2020, GHSC-PSM worked with GHSC-QA and USAID to update the VMMC kit specifications (i.e., clearer labeling, change of suture, and removal and change of scalpel), and finalized all updated specifications with suppliers for the remainder of the current LTAs that end in Q1 2021. In line with this, GHSC-PSM released a new RFP in September for VMMC kits to enable the new sourcing strategy and LTAs for VMMC kits, which will go into effect in Q1 2021.

***Tuberculosis preventive treatment***

Tuberculosis (TB) is the leading cause of death among people living with HIV (PLHIV), causing more than one-third of all AIDS-related deaths. To reduce the risk of active TB, the World Health Organization (WHO) recommends that PLHIV who are unlikely to have active TB should receive TB preventive treatment (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.

**TPT Treatment Options**

- 6, 9, or up to 36 months of daily isoniazid
- 6–9 months of daily Q-TIB (FDC of isoniazid, B6, and cotrimoxazole)
- Weekly dose of isoniazid/rifapentine (3HP) for 3 months

The project continued to investigate potential contamination with the sole manufacturer of rifapentine in Q4. As such, all orders of commodities that include rifapentine remain on hold. GHSC-PSM continues to procure isoniazid for isoniazid preventive therapy (IPT) and the fixed-dose combination therapy, Q-TIB, to prevent opportunistic infections in PLHIV. In Q4, the project processed orders for the Republic of Cameroon, Côte d'Ivoire, DRC, Kingdom of Lesotho, Federal Republic of Nigeria, United Republic of Tanzania, Republic of Zambia, and Zimbabwe to ensure continuous supply in FY 2021.

### Supporting the First 95: Testing

In support of rapid test kit (RTK) availability to reach the first 95 (HIV diagnosis), GHSC-PSM provides forecasting and supply planning as well as in-country logistics support to the Global Health Supply Chain Program-Rapid Test Kit (GHSC-RTK) project (implemented by Remote Medical International), which undertakes the actual procurement. The project also promotes better management of RTK orders and deliveries through the regional- and central-level stock data collected through the Warehouse AIDS Data Visibility, Evaluation and Reporting, or ADVISER, initiative. GHSC-PSM shares these data with GHSC-RTK monthly to guide RTK procurement planning and to triangulate data, reviewing HIV testing targets against RTK stock in countries with PEPFAR-supported HIV testing programs.

### Supporting the Second 95: Treatment

***TLD transition and multi-month dispensing***

To help achieve HIV treatment goals, GHSC-PSM continued to support PEPFAR countries' transition to TLD[7], the preferred first-line ARV. See box at right for scale-up figures.

**Scaling Up Supply of TLD**

To date, the project has delivered **41.7 million bottles of TLD** to **24 countries**.

This is enough to provide more than **5.8 million patient-years of TLD treatment**.

This was achieved despite the supply-chain interruptions and delays caused by the pandemic, with several key suppliers operating at reduced production capacity as noted throughout the report. The project mitigated and limited the impact of the pandemic on product availability in country through planning, procurement, inventory management (facilitated by the project's RDC network) and intense coordination with supplier and logistics partners.

MMD packages for first-line treatment of TLD accounted for 88 percent of all quantities delivered in FY 2020. The project primarily delivered 90-count bottles of TLD, as well as 180-count bottles to Côte d'Ivoire, DRC and Uganda. In Q4, GHSC-PSM developed and shared Version 2.0 of a Multi-Month Simulation (MuMS) Excel tool with country teams. The tool allowed for high-level scenario planning to facilitate in-country conversations with local and international stakeholders on the feasibility of rapid MMD rollout. The updated MuMs tool included increased functionality, including the ability to simulate phased transitions and to account for patient populations already on MMD.

To ensure close coordination with key stakeholders on TLD uptake, the project regularly shares data and facilitates technical coordination meetings. This quarter, GHSC-PSM retired the First-Line ARV Transition, or FLAT, technical working group, with USAID and initiated a series of country-focused meetings. During the Country Progress Towards Key PEPFAR Initiatives – A Supply Chain Perspective Meeting (i.e., Country First meetings), supply-chain-related support and progress towards key PEPFAR initiatives including adult and pediatric DTG transitions, MMD, DDD, and PrEP are reviewed.


Pharmacist Alexey Garcia Ramos taking stock of MMD bottles of TLD at the ART Pharmacy at Oshakati Intermediate Hospital. *Photo credit: GHSC-PSM/Farida Mushi.*

[7]The 24 countries for life of project through Q4 are: Botswana, Burkina Faso, Burundi, Cameroon, DRC, Cote D'Ivoire, El Salvador, Ethiopia, Haiti, Mozambique, Namibia, Nigeria, Panama, Pap Peru, Rwanda, Eswatini (Swaziland), Tanzania, Togo, Uganda, Ukraine, Vietnam, Zambia, and Zimbabwe.

These meetings will be held at least once a quarter for HIV/AIDS Task Order supported countries.

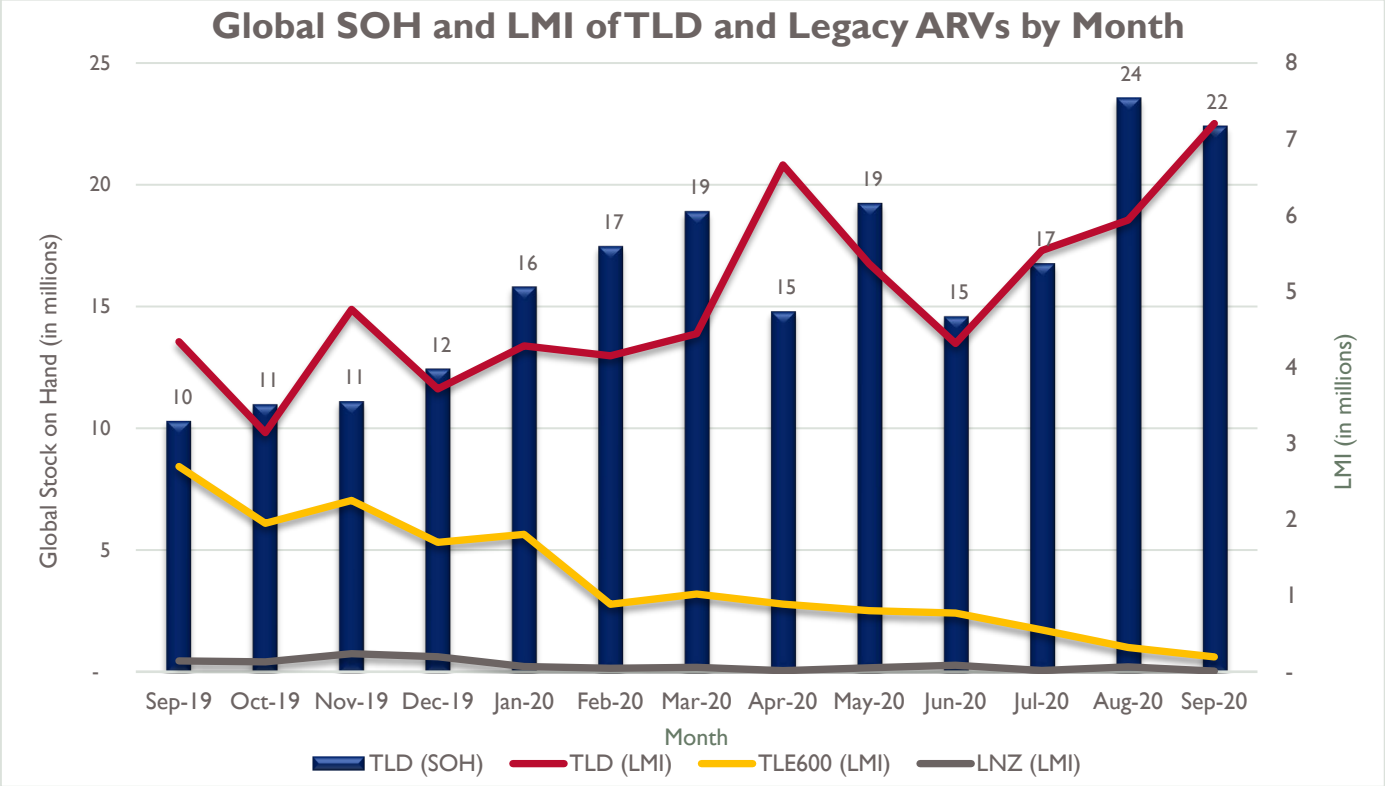
***Legacy ARV drawdown***

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 32 central and 73 regional warehouses in 23 countries through First-Line ARV Reporting and Evaluation (FLARE) reports.

Per PEPFAR guidance, GHSC-PSM halted procurement and actively supported the transition of patients away from legacy ARVs containing nevirapine, such as lamivudine/zidovudine/nevirapine (LZN). GHSC-PSM aligned ARVs in the project's product catalog with the PEPFAR formulary to promote optimal ARV regimen ordering. Weekly reports are submitted to USAID outlining any second-line or suboptimal products that are ordered by partner countries so that both parties can engage country counterparts to determine if a better product should be selected.

According to the data collected in the FLARE reports, global issues of LNZ and TLE600 have decreased 98 percent and 91 percent, respectively, since September 2019. (See Exhibit 9.)

Exhibit 9. Drawdown of stock-on-hand and reduced consumption of LZN from September 2019 to September 2020[8]




[8] Countries included in this analysis were Botswana, Burundi, Cameroon, Côte d'Ivoire, DRC, Eswatini, Ethiopia, Ghana, Haiti, the Kingdom of Lesotho, Mozambique, Namibia, Nigeria, Rwanda, Uganda, Vietnam, Zambia and Zimbabwe.

The analysis above shows successful drawdown of efavirenz- and nevirapine-based regimens and an overall increase in TLD stock-on-hand each month from September 2019 to September 2020.

***Pediatric ARVs***

As GHSC-PSM awaits the U.S. FDA's tentative approval of the new Dolutegravir (DTG)10mg dispersible tablet, which will help further reduce the pill burden for children living with HIV while maintaining dosage flexibility, the project modeled the transition to DTG 10mg in four PEPFAR countries—Mozambique, Nigeria, Zambia, and Zimbabwe.

The transition modeling took into consideration several elements of the supply chain, such as current stock status of pediatric ARVs in country, projected stocks needed for transition to DTG 10mg, and potential expiries.

**Key Pediatric Medicines**

- Abacavir/lamivudine 120/60 mg
- Lopinavir/ritonavir 100/25 mg
- Lopinavir/ritonavir 40/10 mg pellets
- Lopinavir/ritonavir 40/10 mg granules

GHSC-PSM presented the models to the Office of the Global AIDS Coordinator at the end of September. The project continues to work with clinical partners, suppliers, and Ministries of Health to raise their awareness regarding what the transition will look like and when DTG 10mg will be available to countries.

## Supporting the Third 95: Viral-Load Testing

***Implementing viral-load awards***

As noted above, GHSC-PSM continued to build on the implementation of the three contract awards in Q4 under the global VL/EID request for proposal (RFP). Since the implementation of the new awards early in 2020, procurement savings through September reached $16.8 million. In Q4 the project launched the key performance indicator (KPI) reporting process with the three contract awardees. This included submission and validation of pilot KPI reports and performance review meetings with suppliers in Nigeria, Uganda, and Zimbabwe. Through coordinated efforts among GHSC-PSM, USAID, U.S. Centers for Disease Control and Prevention, Ministries of Health, and laboratory technical working groups (TWGs), country consultations regarding operational instrument data-sharing authorizations were also initiated. The government of Mozambique has already endorsed the agreement.

***Testing impacts and mitigation***

In Q4, all VL suppliers continued to report reagent and consumable manufacturing constraints, affecting capacity and product availability because of COVID-19. This resulted in partial fulfilment of orders by GHSC-PSM suppliers GHSC-PSM (especially for shared consumables manufactured by third parties) and uncertainty around planning and allocation. GHSC-PSM and suppliers also experienced challenges with international flights, especially for items requiring cold chain, and in-country logistics challenges, including delays with clearance procedures, but to a lesser extent than in Q3. VL suppliers experienced more significant negative COVID-19 effects on their on-time performance because of in-country importation and logistics challenges.

Lab technician in Zimbabwe holding a blood collection vacutainer or tube. *Photo credit: GHSC-PSM/Tafadzwa Ufumeli.*

These challenges were addressed in bi-weekly order management calls with the VL suppliers to ensure that testing programs are not interrupted because of product shortages. In Q4 GHSC-PSM continued collecting additional monthly data directly from the VL suppliers on tests consumed and stock-on-hand in key countries to better monitor the impact of COVID-19 on testing.

GHSC-PSM and USAID also started analyzing VL and EID data monthly from 17 countries after receiving reports that COVID-19 testing had affected HIV VL and EID specimen testing. This was to mitigate the likelihood of HIV test stockouts in countries as the two diseases share similar testing platforms especially during the extraction process.

***Expanding and improving laboratory quantification and network optimization***

In Q4, GHSC-PSM completed development of ForLabPlus to include COVID-19, in addition to HIV and TB. The advantage of ForLabPlus is that it can be used to quantify lab commodity needs for multiple diseases, track equipment utilization rates for each disease area, and help forecasters understand true demand to better inform supply planning. So far, GHSC-PSM is using the tool to conduct national laboratory commodity forecasting in two countries—Eswatini and Malawi.

GHSC-PSM completed the in-house training for the superusers on the Opti-Dx tool; a web-based network optimization software. Malawi and Uganda were selected as pilot countries and will begin piloting the tool in FY 2021. The objective of the tool is to increase patient access to HIV and other disease testing by using national data to create a geospatial module of a diagnostic network to identify opportunities for network optimization.

GHSC-PSM, in collaboration with LLamasoft and the Global Fund, completed optimization of the referral network for HIV and TB specimens in Mali in Q4. Also, GHSC-PSM is in the final stages of completing network optimization for Indonesia using the new developed Opti-Dx tool.

## Stock Tracking, Oversight, and Planning for HIV/AIDS

GHSC-PSM is working to improve data visibility and analysis of HIV commodity inventories at all levels of the supply chain. The project reviews inventory data on a monthly basis for more than 25 HIV medicines and commodities at central and regional warehouse levels in 23 PEPFAR countries to identify stock imbalances. Data generated at this level include the status of first-line ARV drawdown, the transition to TLD, and HIV commodity stock-out 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.

In Q4, through data collection and analysis at central and regional warehouses, GHSC-PSM identified 16 risks of HIV commodity stockouts in 9 countries and quickly resolved them. The project continued standardizing HIV product names and formulations across all countries for streamlined and improved data quality.

## Global Collaboration

GHSC-PSM presented on various HIV/AIDS-related topics at three virtual conferences in Q4—the International AIDS Society (IAS) 2020 conference, the first-ever IAS COVID-19 conference, and the Health and Humanitarian Logistics 2020 conference. The topics ranged from end-to-end stock data visibility to sustaining the gains of the specimen referral network program during COVID-19 in Nigeria and using supply-chain constraint analyses to accelerate MMD during COVID-19 in low- and middle-income countries.

## Country Support

The HIV task order funds supply-chain systems strengthening in 30 countries.

*"We have not experienced a shortage of ARVs in the last nine months despite COVID-related restrictions and we have ensured that clients receive their medication by reaching those who could not travel to the sites."*

Sam Omalla, Supply Chain Management Officer, Regional Health Integration to Enhance Services in Eastern Uganda

With the onset of COVID-19, **Uganda** faced significant interruptions in health service delivery, limiting access to lifesaving commodities. PLHIV were particularly affected as travel restrictions impacted access to anti-retroviral therapy (ART). While the Ugandan Ministry of Health was in the midst of transitioning to TLD and scaling up MMD, they wanted to ensure patients would remain on their treatment as the pandemic progressed. GHSC-PSM worked closely with the Ministry of Health, procurement agents, and key donors on instituting a weekly stock status review meeting. At this meeting, stakeholders regularly discussed and addressed topics such as, inter-warehouse transfers, informed "push" of commodities to service delivery points to kickstart the use of TLD 90, and redistribution of HIV/AIDS commodities from overstocked service delivery points to those running low. Through close collaboration and coordination among stakeholders, patients continued to access to their ART without interruption.

In **Indonesia,** the VL testing utilization rate declined significantly during COVID-19 because of mandated lockdowns and physical distancing measures, leading to an increasing number of reagents at risk of expiry. To ensure usage of the reagents and avoid expiry as much as possible, GHSC-PSM coordinated with the Jakarta Provincial Health Office and identified 642 VL reagents that would expire in Fatmawati Hospital in October 2020. By the end of September, GHSC-PSM successfully re-allocated 480 of these VL reagents to Dharmais Hospital because of its high VL testing utilization rate, leading to the successful use of these commodities for patient testing in Jakarta Province and minimizing loss to expiry.

## B2. Malaria

Delivered enough anti-malarial medicine to treat over **268.4 million infections**, including **28.5 million** in Q4.

**A total of 29 countries procured malaria medicines and commodities,** and **22 countries received health supply-chain systems strengthening** with malaria funding under the contract.

Supported distribution of LLINs to provide **protection from malaria for over 27.6 million people** in Q4 and over 64 million people in FY 2020.

Continued to implement and evaluate sourcing strategies for **assessing malaria commodity market health** and mitigating risks for commodity security and quality.

Under the PMI-funded malaria task order, GHSC-PSM supplies lifesaving prevention and treatment medicines, malaria rapid diagnostic tests (mRDTs), and LLINs. The project offers partner countries new approaches to strategic planning, logistics, data visibility, analytics, and capacity building in line with PMI strategies. GHSC-PSM also provides technical guidance to strengthen global supply, demand, financing, and the introduction of new malaria medicines and commodities. Finally, GHSC-PSM also provides continuous support to USAID missions to ensure they have the necessary malaria commodity data, analysis, and forecasting models to directly inform and support development of PMI's Malaria Operational Plans.

### Introduction: Reflections on FY 2020

At the start of FY 2020, GHSC-PSM had made important progress; the project was collaborating with global partners to diversify the supplier playing field, improve the way countries measure and manage their stock, and better ensure the quality of products. When the COVID-19 pandemic destabilized global manufacturing and logistical systems, the production and transport of vital commodities and medicine for malaria were at risk.

The project established a COVID-19 Management Task Force in February 2020 to monitor, manage, and to the extent possible, mitigate the impact of the pandemic. The Task Force worked diligently to adapt to the shifting conditions and ensure adequate malaria supply availability. By the end of Q4, it became apparent that the robust response to these challenges has helped the project move into a more diverse, more connected, and stronger position.

When COVID-19 began to disrupt the malaria commodity supply chain—primarily mRDTs—the project had already lost one manufacturer who needed to shut down to upgrade to WHO qualification status. Then a major mRDT manufacturer cancelled all orders to move production to what promised to be a larger and more lucrative market associated with COVID-19 testing. In response, GHSC-PSM, as part of the Malaria RDT Task Force, worked with 27 major suppliers and donors t to bring more manufacturers into the supply chain through an mRDT Supplier Summit, identify consolidated mRDT demand for the remainder of 2020

into 2021, coordinate orders and suppliers, and prioritize the countries with the greatest need. This display of solidarity and coordinated action served to strengthen the basis for all future work under GHSC-PSM.

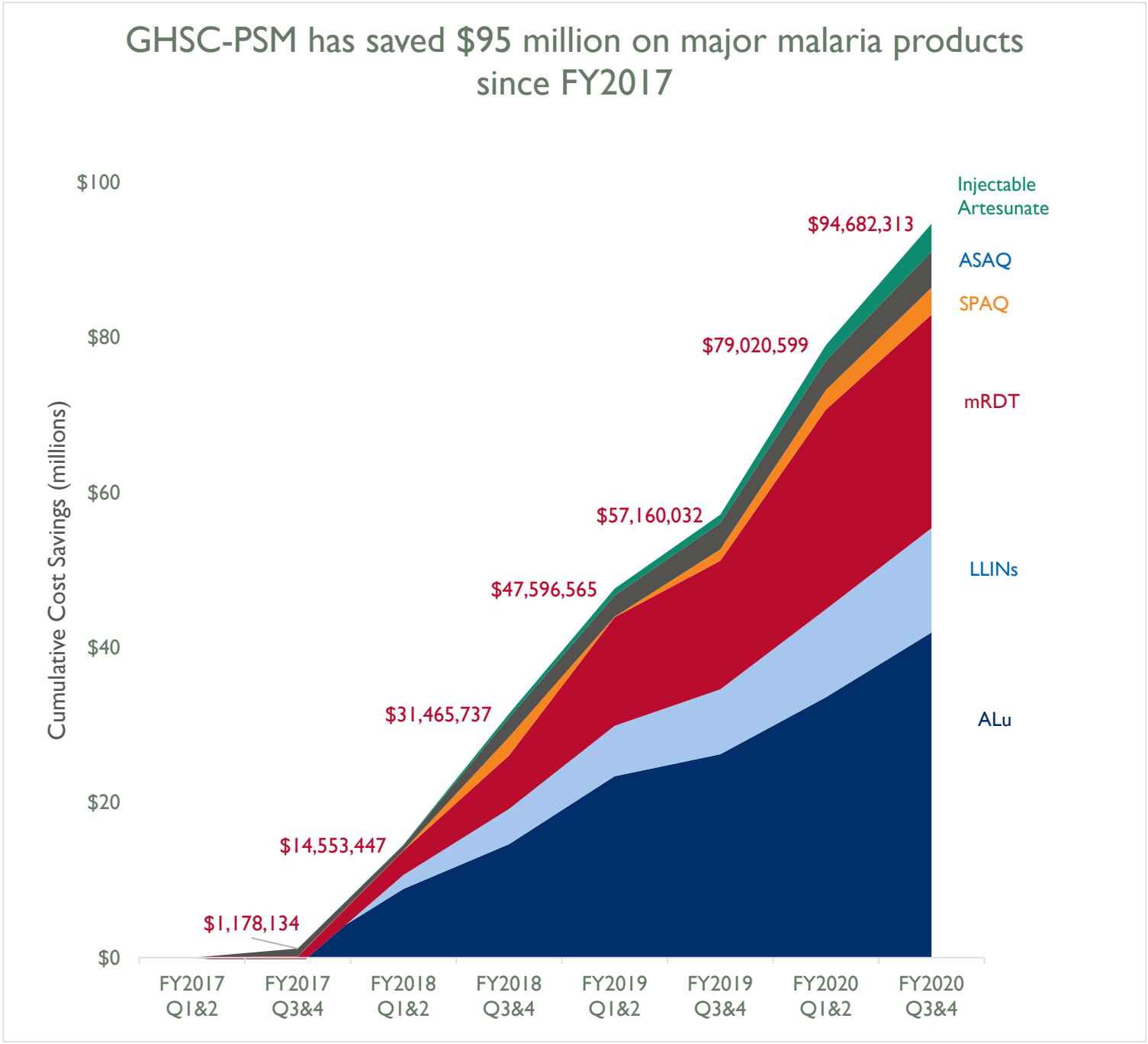
The pandemic also exacerbated the increasing challenge of sourcing key starting materials and APIs for malaria medicine. For example, the plant used to manufacture artemisinin is cultivated only in China and despite efforts to develop a synthetic alternative, supply chains remain subject to disruptions. India is the primary source of artemisinin-based combination therapies (ACTs), and production has been severely curtailed by the pandemic. The primary challenge for the immediate future is mitigating the risks associated with the overreliance on product from one country.

In the short term, GHSC-PSM developed a tracking tool to facilitate forecasting and reallocation of stock on hand, worked with countries to reduce the temptation to stockpile, and, in collaboration with global stakeholders, succeeded in getting the major manufacturer to reconsider their exit from the mRDT market. In the long term, the project continues to examine opportunities to strengthen its market position, refine stock reallocations, explore new sourcing strategies, promote sustainable pricing, and prequalify additional suppliers. FY 2021 will require continued transition of PMI technical assistance toward strategic and tailored country-specific solutions while maintaining a global presence and voice on the malaria commodity platform.

### Cost-savings on Malaria Commodities

Over the life of the project, GHSC-PSM has achieved $95 million in cost-savings for major malaria commodities. (See Exhibit 10.) These savings represent 16 percent of the total spending on these product categories over the life of the project, and 13 percent of the total value spent on malaria products overall. Much of these savings were achieved as a result of strategic sourcing initiatives over the life of the project that focused on diversifying the supplier base for key commodities and locking in fixed and tiered pricing.

Exhibit 10. GHSC-PSM has saved $95 million on major malaria products since FY 2017




### Commodity Sourcing, Procurement, and Delivery

The ongoing fallout of the COVID-19 pandemic continues to affect malaria commodity supply chains. GHSC-PSM regularly assesses the viability of existing sources of critical commodities, including KSMs and API, and uses these assessments in developing strategies to ensure the products are available despite factors such as constrained supply and limited transit options.

***Commodity risk profile***
In FY 2020, the COVID-19 pandemic significantly impacted many GHSC-PSM suppliers, creating additional risk and longer lead times across the project. To proactively manage this, GHSC-PSM segmented commodities by volume and programmatic impact to evaluate and develop commodity risk profiles. The profiles, updated monthly, examine the geographical sourcing of commodities, market and supplier-specific impact on production, and sourcing of KSMs, raw material, and packaging materials, in an effort to mitigate and minimize near-term and long-term supply disruptions.

***Strategic sourcing***
In FY 2020, GHSC-PSM strategic sourcing of malaria commodities focused on:

- ***Evaluating and developing FY 2021 sourcing strategies.*** GHSC-PSM implemented new sourcing strategies across all product categories during FY 2020. Evaluations will continue into FY 2021; information is being used to assess market health, evaluate the effectiveness of existing strategies, and identify opportunities to better achieve project objectives in the future.
- ***Sourcing malaria RDTs in an environment of constrained supply.*** The COVID-19 pandemic impacted the availability of mRDTs in multiple ways, most notably by government-imposed lockdowns limiting production volumes and manufacturers re-allocating resources to meet demand for COVID-19 tests. These factors resulted in extended lead times, order fulfillment delays, and concerns about the market's ability to supply the number of quality-assured mRDTs to meet global demand. To mitigate the impact of the constraints imposed by COVID-19, GHSC-PSM applied two measures.

    1. Accelerated efforts to qualify new suppliers capable of meeting strict eligibility standards.

    2. Issued a short-term tender to meet the expected demand for mRDTs through Q1 FY 2021. The tender's goal is to maximize available production capacity and help suppliers achieve economies of scale despite increased production and logistics costs. Suppliers were requested to quantify the maximum number of units they could offer for three prescribed GADs and to quote a market price reflective of the current conditions. The project then allocated the units to fulfill the remaining demand using an in-house optimization tool designed to minimize the total landed cost incurred by GHSC-PSM recipient countries.

- ***Finalizing long-term agreements (LTAs)***. FY 2020 saw the conclusion of a multi-year effort to execute LTAs with fixed pricing across all major product categories in the malaria portfolio. Establishing fixed prices improves the ability of GHSC-PSM and its recipient countries to plan, reduces the tendering burden for the project and its suppliers, and enables strategies to achieve best value and increase visibility throughout the supply chain.

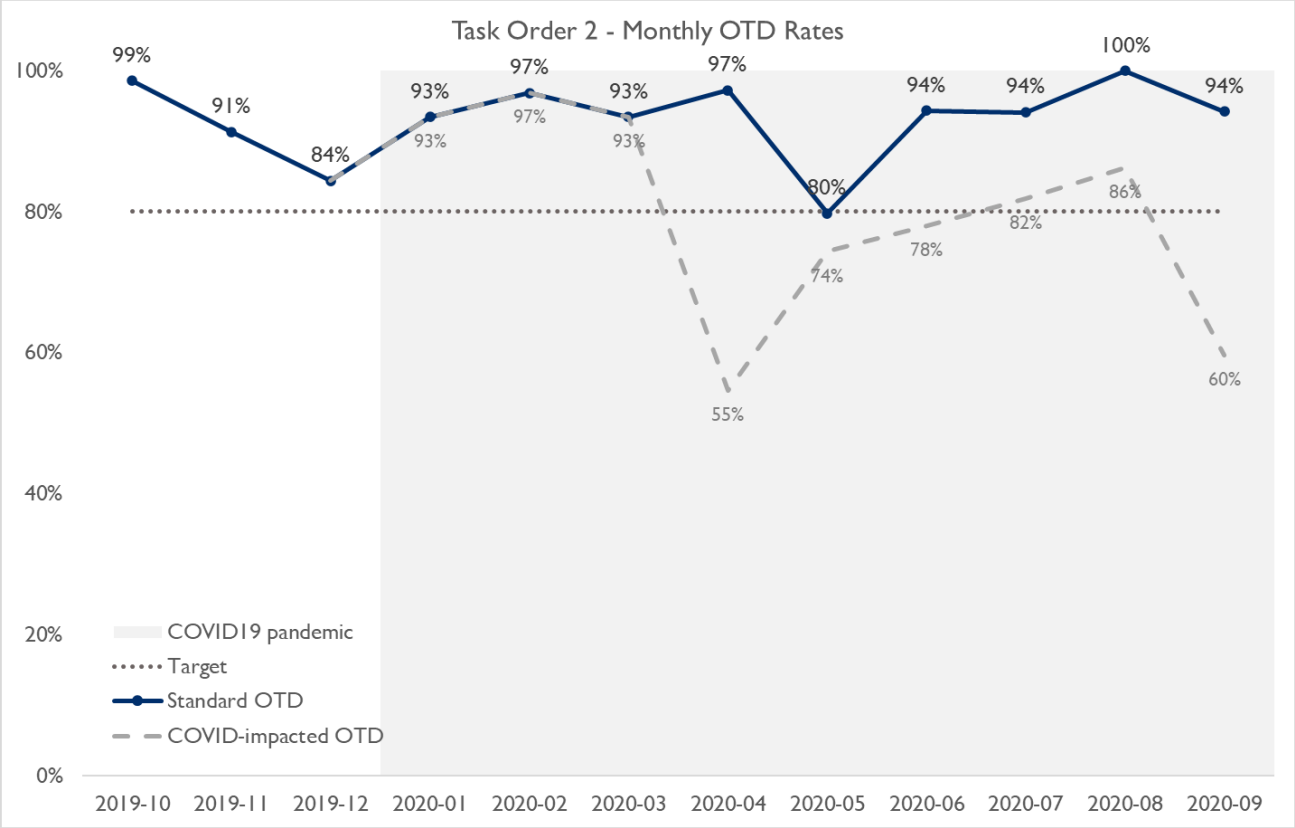
***Funding Allocation Tool***
The Malaria Task Order Funding Allocation Tool was designed in Q3 and Q4 to better understand a country's financial situation before going to market to place an order. This tool incorporates Monthly Financial Statements (MFS), previously approved ROs, country pipeline, and emergency loan funding to provide a holistic picture of a country's funding status. GHSC-PSM runs the tool on a biweekly basis to determine an order's funding status; an order can be country pipeline funded, funded through an emergency loan, or placed on hold until the next fiscal year obligation is received. In FY 2020, GHSC-PSM decided to go to market only if an order has funding to prevent losing committed GADs with suppliers and to reduce the strain on supplier relationships because of purchase order delays while waiting for funding.

***Procurement and deliveries***

Since the start of the project, GHSC-PSM has procured malaria commodities[9] for 30 countries (all PMI countries and regional programs as well as two USAID malaria countries). Over the life of the project, GHSC-PSM has procured $722.5 million of malaria medicines and commodities, including $56.6 million in Q4.

***OTD and OTIF.*** GHSC-PSM achieved an on-time delivery (OTD) rate of 91 percent in Q1, 94 percent in Q2, 88 percent in Q3, and 97 percent in Q4. Project performance continued to exceed the target of 80 percent, averaging 95 percent over the course of FY 2020. (See Exhibit 11.) GHSC-PSM's on-time in-full (OTIF) rate measures the percentage of deliveries during a given period delivered on-time and in-full. Delivery of late orders in a subsequent month to the agreed-upon delivery date drives down the OTIF rate, as can delivery of split shipments, which helps explain the difference between OTD and OTIF rates. For OTIF, project performance continued to exceed the target of 80 percent, averaging 90 percent over FY 2020. See Annex for further details.

Exhibit 11. Malaria Commodities, OTD




***Global sourcing collaboration.*** In April 2020, one of the project's largest mRDT suppliers notified the project and other global procurers that their mRDT production lines would be reallocated to COVID-19 RDTs and that they would not accept orders for mRDTs after April 15, 2020. In response, the project took three steps to mitigate country-level risk, which involved allocating existing supply based on country

[9] 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, Kingdom of Thailand.

urgency, collaborating with global partners, and issuing the short-term volume-based tender (discussed above) for additional supply through Q1 FY 2021.

Through Q3, the project also reallocated 31 million mRDTs and prevented stockouts in seven countries. To determine how to reallocate the Plasmodium falciparum (Pf) Histidine-Rich Protein -2 (HRP2)-based mRDTs the project created a mathematical optimization model based on supplier capacity and country stock levels. The relocation was an extensive undertaking that involved coordinating with suppliers, repackaging commodities, and adjusting logistics.

In Q4, GHSC-PSM continued to participate in the Pharma Task Force, mRDT Task Force, and IRS/ITN Task Force and met bimonthly with United Nations Children's Fund (UNICEF) and Global Fund to align priorities for strengthening supplier capacity and response. The biweekly Global Donor TWG continues to meet regularly to coordinate actions and resolve problems with suppliers who are unable to fulfill demands because of capacity constraints as a result of COVID-19. Also, in Q4, the project began working on the strategy for final review of mRDTs. These task forces continue to exchange information and update GHSC-PSM on potential market risk and better collaboration across the global malaria community.

### Pre-positioning Strategy for Artesunate Injectable and ACTs

In Q3, GHSC-PSM developed a pre-positioning strategy for malaria commodities to ensure continuous supply of artesunate injectable despite severe market constraints caused by COVID-19. The artesunate injectable market is dual source, but because of a production shortage in early 2020, production capacity was significantly reduced, leaving global donors scrambling to place orders for production in Q4 FY 2020 and Q1 FY 2021. To secure production slots, GHSC-PSM placed several large pre-positioning orders with requested deliveries through Q2 FY 2021.

Using the prepositioning strategy, the project could deliver commodities earlier than with a traditional fulfillment strategy. Requisition orders for artesunate injectables entered in Q3 for delivery in Q2 FY 2021 would likely have experienced up to three-month delays between estimated delivery date and actual deliveries. However, based on current ROs and estimates, GHSC-PSM's pre-positioned stock has covered the entirety of demand within scope. Typical production lead times for artesunate injectable are set at 10 weeks; however, for pre-positioning orders placed in this quarter, the shortest production lead times were 16 weeks, with many pre-positioned orders having upwards of 20 weeks lead time. Without prepositioning, ROs entered this quarter for delivery in early 2021 would have had a significantly lesser opportunity to deliver closer to the Requested Delivery Dates. This was particularly the case for those orders received after pre-positioning orders were placed, given the shorter time window between RO entry date and RDD. The project will regularly reassess the strategy and place new orders in anticipation of upcoming malaria operational plan (MOP) demand while market constraints persist.

Also, because of constraints in the lumefantrine market, GHSC-PSM pre-positioned orders for ACTs by placing inventory orders (IOs) directly with the suppliers. This strategy helped alleviate longer-than-usual production times because of COVID-19 and allowed suppliers to be better prepared for orders and procure key starting materials. These IOs were then reassigned to countries that had requested delivery dates before the end of Q2 FY 2021 based on their stock status and need. The project plans to reassess the strategy once the initial order allocations are made and place new orders in anticipation of upcoming malaria operational plan (MOP) demand while market constraints persist.

## Quality Assurance

In FY 2020, the project made significant adjustments to QA/QC activities to mitigate delays related to COVID-19 testing and shipping restrictions for samples and commodities. To determine where inspections could be reduced, the project took a risk-based approach that relied on assessing historical data by commodity type and introduced remote inspections for consignments that could not be inspected in-person. The project explored activities such as using checklists that allowed suppliers to self-inspect commodities and select samples for third party testing as soon as the production was completed to expedite shipments. The project monitored the efficiency of allowing suppliers to self-inspect commodities and select samples throughout Q3 and found that this initiative was ineffective and, in fact, extended pick-up times, and resulted in a higher percentage of inspection discrepancies. In Q4 the project reinstated in-person and remote inspections performed by GHSC-PSM's QC network.

**High Level of Productivity**

GHSC-PSM maintained a high level of productivity in FY 2020 despite constraints posed by COVID-19, issuing 354 certificates of conformance (CoC) that ensured quality requirements were met and allowed commodities to be released for distribution. The CoC per commodity type is 228 for pharmaceuticals, 53 for mRDTs, and 73 for LLINs.

***Prequalification***

In FY 2020, the project also completed the review and prequalification of 17 new products; 4 pharmaceutical products, 9 mRDT products, and 4 LLIN products to expand the project's supplier pool and allow for greater flexibility and access to commodities amid COVID-19 constraints. The project also onboarded a new LLIN testing lab to allow greater flexibility in the project pool for testing LLINs.

***New SPAQ supplier added***

GHSC-PSM evaluated and procured sulfadoxine-pyrimethamine + amodiaquine (SPAQ) from a new supplier. The supplier was in the process of acquiring WHO pre-qualification status and encountered nonconformity following the WHO review. To determine if the project could continue its engagement with the supplier, GHSC-PSM conducted an evaluation that included review of corrective action preventive action (CAPA) reports from the supplier for the findings reported by the WHO, review of batch records, and enhanced testing to ensure the safety and efficacy of the SPAQ lots procured. These QA activities allowed the project to procure SPAQ from the supplier.

***Quality Assurance Management System in use***

In FY 2020, the Quality Assurance Management System (QAMS), which provides real-time malaria commodity QA data to inform planning and decision-making for shipments and other activities, was made fully operational. In Q4, the project continued to refine and operationalize QA reason codes approved by PMI, and COVID-19-related reason codes and flags, to monitor and report delays related to QA/QC. The project also back-entered QA data generated before instituting the QAMS system so that the system is now the sole resource for QA/QC data for the life of the project.

***Reduced testing cost-savings and key performance indicators***

The most direct COVID-19 impacts were seen during Q3 and Q4, yet the malaria task order QA KPIs continued to exceed targets. See table below.

Exhibit 12. KPI targets and percent lead times of orders completed within target QA lead time for FY 2020

| Period | KPI Target - QA lead time | KPI excluding COVID19 Exceptions | KPI for all orders including COVID19 Exceptions |
|---|---|---|---|
| Q1, FY 2020 | 80% | NA | 93.75 |
| Q2, FY 2020 | 80% | NA | 87% |
| Q3, FY 2020 | 80% | 100% | 91.4% |
| Q4, FY 2020 | 80% | 96.7% | 79.1% |

Much of this performance can be attributed to the risk-based adjustments implemented for QA/QC activities. The project continued to implement the risk-based testing protocol in Q4. The combination of the risk-based protocol and the risk-based adjustments made in response to COVID-19 yielded cost-savings of $241,603 in FY 2020.

### Addressing challenges because of LLIN manufacturer quality issues

In FY 2020 GHSC-PSM concluded activities that began in FY 2019 related to an LLIN manufacturer's quality issues. The project completed post-shipment testing of the LLINs that were part of the initial investigation. The project discovered that the LLIN supplier had used the incorrect binder to manufacture the LLINs and provided these results to PMI. As a result, the project took corrective action to mitigate the risk of delivering poor quality LLINs that did not adhere to WHO requirements by reporting findings to the WHO and deeming the supplier ineligible for procurement by the project. The project also drafted a process to more broadly address LLIN manufacturers' QMS, which was presented to PMI.

GHSC-PSM investigated quality issues with another LLIN manufacturer that had reported incorrect quantities of insecticide in two lots of LLINs and manipulated certificates of completion. The project notified the WHO Prequalification (PQ) Programme, launched an investigation, and submitted a report to WHO and PMI. The supplier provided their investigation report along with CAPAs, and as a result was able to mitigate reoccurrence of the issue. The supplier will keep GHSC-PSM abreast of implementation of the CAPAs and upon the full implementation of CAPA will be reconsidered for eligibility for procurement. Additionally, the project procured LLINs from another qualified supplier to meet PMI's needs.

### Addressing challenges because of mRDT manufacturer quality issues

The project continued to investigate quality issues for an mRDT supplier, and identified that the root cause of the issues was weak QMS controls during the manufacturing process and qualification of products. GHSC-PSM provided recommendations to PMI to inform decisions on future use of the supplier and identified alternative suppliers that could fill the gap while the current supplier addressed the concerns indicated in the WHO inspection report. GHSC-PSM also partnered with the Global Fund to develop and implement a plan to ensure safety and efficacy of future procurements, which included technical guidance to mitigate risk and impact on supply chains in the current constrained mRDT market.

### Adoption of Standards-Based Identification, Barcoding, and Data Sharing Standards

In FY 2020, 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, which involve a phased implementation grounded in GS1 Healthcare Standards with the objective of creating an enabling environment for data exchange and visibility, are detailed in section C1, where a breakdown of compliance rates across product category is also provided.

Since publication of the *Recommended Identification, Capture, and Data Sharing Specifications for Long Lasting Insecticidal Nets* in FY 2019, GHSC-PSM has been closely coordinating with Global Fund's procurement agent for LLINs, IDA Foundation, to take the next steps in supporting suppliers to meet the deadline for compliance with GS1 standards.

Through the TraceNet Working Group, the project contributed to the finalization of an Attribute Guide for LLINs in Q3. To educate and prepare suppliers to reach the deadline, in Q4 the project held a series of three webinars on registering with GS1, Assigning GTINs and Global Location Numbers (GLNs), Good Practices for Implementing Automated Identification and Data Capture (AIDC), and an Introduction to Global Data Synchronization Network (GDSN) and Good Practices for GDSN Synchronization. Recordings of the webinars and their respective slide decks were provided to suppliers as resources to assist them with the implementation of GS1 standards. Each webinar was developed by a group of stakeholders including Global Fund, GS1 Global, GHSC-PSM, and 1WorldSync. The first webinar was attended by 55 participants and the second two by 35 participants, which included LLIN manufacturers, GS1 member organizations, GS1 Global, Global Fund, PMI, and GHSC-PSM.

The Phase 1 deadline for LLIN suppliers, which requires the allocation of standardized identifiers (Global Trade Item Numbers [GTINs] and Global Location Numbers [GLNs]) was in Q3. The project's LLIN suppliers exceeded the targeted compliance of 50 percent with 100 percent compliance by the end of Q4. Much of this success was because of the collaborative inputs in the development of the GS1 recommendations document, the educational webinars, and the dedication of the project's supplier engagement team. Efforts to move suppliers to the Phase 2 milestone, which requires labeling nets and poly bags, and synchronization of master data through the Global Data Synchronization Network (GDSN), began in Q4 and will be reported following the Phase 2 deadline of December 30, 2020.

### Prioritizing Orders and Redirecting Supply to Prevent Stock Outs

In FY 2020, to address country need and market constraints, GHSC-PSM, working closely with USAID, prioritized orders based on need and conducted order transfers to improve stock status. Below is an example of how the project leveraged data, country collaboration, and market constraints to ensure that countries in need of product avoided a stock-out.

In Lao People's Democratic Republic (PDR), ACTs and primaquine were set to expire in early Q1 FY 2021 and a funding gap limited the government's ability to procure replacement supply. Upon receipt of an emergency request from the country's malaria program, PMI committed to funding the gap. Given the urgency, GHSC-PSM planned to fulfill the supply from a regional distribution center (RDC) to reduce the lead time. At the same time, a major mRDT supplier announced its transition from malaria to the COVID-19 market and available supplies were drastically reduced. In Q3, the project redirected an order of 50,000 RDTs from one country to Lao PDR and initiated procurement from other suppliers for the rest of the required quantity. The 50,000 mRDTs were delivered in Q4 to mitigate the stockout risk. The project continues to monitor the progress of procurement and delivery of the rest of the shipment.

In FY 2020, 29 countries submitted data to the Procurement Planning and Monitoring Report for malaria (PPMRm). The PPMRm collects and reports information on stock status and on host governments' and other donors' shipments. The visibility into stock status and shipment information enables PMI, the project, and countries to make decisions on prioritizing, expediting, transferring, or delaying procurements or shipments, and facilitates review of forecasts and supply plans to optimize procurements.

Based on PPMRm data, the following actions were taken at the global or national level in Q4:

- **Angola**: The project noted an excess stock of artesunate 100 mg and 50 mg suppositories. To avoid expiries, the project recommended that the National Malaria Control Program (NMCP) coordinate a national distribution of this product to all service delivery points based on forecasted needs, which the NMCP then followed. Also, GHSC-PSM recommended that the Ministry of Health (MOH) defer procurement of artesunate suppositories until FY 2022, facilitate timely last-mile distribution of the received shipment, and closely monitor utilization at the service delivery points.

- **Burma**: In 2019, the project placed an order for 500,000 LLINs for Burma with a requested delivery date of August 31, 2020. Because of COVID-19 causing port congestion out of China, GHSC-PSM expected delayed delivery in November. However, the project prioritized the shipment for inspection and delivery, and successfully delivered the shipment in August as planned. These LLINs will be deployed for continuous distribution in Burma's high malaria risk areas.

### LLIN Distribution Support

In FY 2020, many countries continued to deliver LLINs for continuous distribution, and a few launched or continued large-scale LLIN distribution campaigns as a key malaria prevention strategy. However, most campaigns were delayed because of COVID-19. These massive initiatives ensure beneficiaries receive the nets they need, particularly in high-impact areas. While the actual distributions can last just a few weeks, logistics, supply planning, procurement, and pre-positioning the nets can take months. In FY 2020, the project distributed almost 30.8 million LLINs, enough to protect nearly 61.6 million people in total. (See Exhibit 13.)

Exhibit 13. Number of LLINs distributed in FY 2020 per country and people protected, assuming two people for every net.

| Country | Insecticide treated nets (LLINs) | Number of people protected |
|---|---|---|
| Angola | 1,000,000 | 2,000,000 |
| Burkina Faso | 1,785,504 | 3,571,008 |
| Burma | 800,000 | 1,600,000 |
| Cameroon | 1,658 | 3,316 |
| Ethiopia | 3,099,257 | 6,198,514 |
| Ghana | 114,999 | 229,998 |
| Kenya | 497,250 | 994,500 |
| Liberia | 289,100 | 578,200 |
| Malawi | 1,334,030 | 2,668,060 |
| Mozambique | 1,313,432 | 2,626,864 |
| Niger | 917,360 | 1,834,720 |
| Nigeria | 9,335,830 | 18,671,660 |
| Rwanda | 8,311,148 | 16,622,296 |
| Sierra Leone | 572,257 | 1,144,514 |
| Uganda | 1,425,851 | 2,851,702 |
| FY 2020 Total | 30,797,676 | 61,595,352 |

GHSC-PSM supported LLIN distribution activities. including:

- **Angola:** In Q4, GHSC-PSM distributed 1,000,000 LLINs through a 3PL for continuous distribution to pregnant women during antenatal care visits and children under five years of age in six PMI provinces.
- **Ethiopia:** The project provided technical assistance to the MOH in procuring and distributing 3.1 million LLINs to 5.62 million at-risk people in 1.2 million households in the South Nations Nationalities People (SNNP), Benishangul-gumuz, Gambella, Afar, and Amhara regional states. GHSC-PSM supported 102 woredas (districts) to organize community mobilization activities, oriented 7,383 campaign coordinators in the context of COVID-19, and deployed 1,241 health post-level supervisors and campaign coordinators. To ensure proper protection from COVID-19, the project provided face masks and alcohol-based hand sanitizer, limited crowds, disinfected distribution areas, and adapted social and behavior change communication interventions.
- **Liberia:** GHSC-PSM supported the National Malaria Control Program (NMCP) in conducting last-mile distribution immediately upon delivery from the central medical store to the county depots. The project contracted with 3PLs to facilitate transportation of 36,750 LLINs in Q4, to depots and health facilities in Bong and Montserrado Counties. The LLINs helped to reduce local facility stock-outs and malaria cases among pregnant women and children under five.
- **Mali**: In collaboration with the NMCP and PSI, the project distributed 49,500 LLINs to all health districts to support continuous distribution in Q4.

In addition to distribution, the project also provided storage for the LLINs, as the LLINs are bulky and require large storage space with controlled temperature to maintain quality. Storage support included:

- Renting 3PL warehouses in Angola, Ghana, Malawi, Nigeria, and Zambia
- Renting a private warehouse in Burundi, Cameroon, Liberia, Mali, Mozambique, and Zimbabwe
- Paying for storage space in warehouses owned by governments or counterparts in Rwanda and Uganda

### Stockout Reduction Initiative

Despite ongoing PMI investments, facilities often experience stockouts for critical malaria commodities and performance for several countries has not improved over time, although visibility of stock status exists. PMI is committed to a global initiative to support reduction of malaria commodities' stockout rates at service delivery points over the next 2-3 years. In FY 2020, GHSC-PSM provided technical assistance in developing a playbook that lays out a robust approach for guiding PMI and its implementing partners to target PMI's investments to reduce stockouts. In Q4 GHSC-PSM field offices in the PMI-supported countries identified prioritized root causes of stockouts and proposed targeted solutions. These root causes and solutions further guided countries to develop their FY 2021 work plans for activities to address the root causes and to develop investment plans for PMI for reducing stockout rates at SDPs. The project will be piloting the playbook in a few selected countries in Q1 FY 2021 to refine the playbook and the corresponding tools.

## Country Support

GHSC-PSM provided supply-chain systems strengthening support for malaria medicines and commodities in 22 countries in FY 2020.[10] Activities in Q4 included:

**Burkina Faso.** GHSC-PSM provided technical and financial assistance to the Human Resources Production Department, or DPRH, to supervise instruction on the integrated logistics management information system (LMIS) curriculum in public and private health schools. The objective of this supervision was to identify strengths, weaknesses, and difficulties encountered during the course and to make recommendations for improvement. Seven public health schools out of nine visited, and 13 private schools out of 32 visited, conducted the integrated LMIS course during the academic year. The supervisors met with 27 students who had taken the course. The students agreed that the course enabled them to effectively execute the required tasks at the health facilities during their field internship, ensuring that they are well prepared to manage health commodities once they start their professional careers.

**Cambodia.** GHSC-PSM worked with the National Center for Parasitology, Entomology and Malaria Control to organize a workshop aimed at building the capacity of national and subnational government counterparts to improve the use of the Malaria Information System. The workshop was targeted at health facilities in the intensified plan (IP2) areas that account for approximately 80 percent of total reported malaria cases. A total of 109 participants from seven provinces attended the workshop held in Q4. The workshop focused on improving data collection, validation, and analysis, ensuring timely reporting of complete and accurate data that will be used for decision-making.

**Cameroon.** In Q4, GHSC-PSM worked with the NMCP to ensure successful implementation of the seasonal malaria chemoprevention (SMC) campaign. Activities focused on improving visibility into commodity stock data by assisting the district supply-chain focal points to collect end-of-cycle logistics data in Excel, as the reports were not captured properly in the DHIS2. GHSC-PSM analyzed the data, identified sites at risk of stock-outs, and coordinated targeted reallocation of SPAQ. Also, the project sponsored four district supply-chain focal points to conduct supervision activities in 14 health areas in five districts in the Far North, and in 28 health areas in seven districts in the North to ensure accurate prepositioning of SPAQ for cycles 3 and 4 of the campaign. In collaboration with the regional medical store, GHSC-PSM supported the distribution ***of 608,500 SPAQ low dose treatments and 3,033,850 SPAQ high dose treatments, in a total of 446 health areas***.

**Ethiopia.** GHSC-PSM provided support to 16 health facilities in Dire Dawa, Harari, and Oromia regions to improve their storage space and dispensing areas and minimize waste. The project developed and ran an assessment tool to optimize these conditions. Based on this information, GHSC-PSM provided guidance on appropriate floor layout design and adequate specifications and the budget needed for storage and dispensing equipment and furniture, with the goal of improving the management of malaria and other pharmaceutical commodities at these health facilities.

**Guinea.** In Q3 FY 2020, GHSC-PSM supported the Central Pharmacy of Guinea (PCG) to install automated temperature and humidity sensors to the depots of Conakry, Labe and Boke. The sensors optimize monitoring of the condition of health products and ensure that all products remain safe and effective for patients. In Q4 FY 2020, the project extended the availability of the wireless temperature and humidity measurement system to the depots of Kankan, Faranah, and Nzérékoré. The new system allows for generation and transmission of temperature and humidity data in real time. Four PCG staff in Kankan,

[10] 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.

Nzerekore and Faranah were trained on conducting periodic review of temperature and humidity data and on analyzing this data to enable informed decision-making.

**Sierra Leone.** In August, GHSC-PSM supported the Malaria Quantification Technical Working Group (TWG) to conduct a multi-year (2021–2023) forecast of malaria commodity needs using demographic, health management information system, and consumption data. GHSC-PSM provided technical assistance throughout the forecasting process, supporting collection of stock data to inform the exercise, verifying and analyzing the stock data to ensure accuracy and completeness, and ensuring a complete annual and high-quality quantification report and procurement plan. The quantification results were used to develop the budget proposal that the Sierra Leone NMCP submitted to the Global Fund, as part of the three-year grant proposal. The quantification results will also be used by the PMI team in Sierra Leone to confirm that the quantities of malaria commodities allocated in the FY2020 MOP are adequate.

## B3. Family Planning and Reproductive Health

Delivered more than 302.5 million contraceptives to supported countries to date. These contraceptives, when combined with proper counseling and correct use, are estimated to provide **73.3 million couple-years of protection**, **including 5.9 million in Q4 FY 2020.**

**Procured FP/RH commodities for twenty-four countries**,[11] and provided **health supply-chain systems-strengthening support** to **22 countries** with FP/RH funding.

Released a report on **current trends in the last-mile market** following interviews with select providers in an effort to share information with the greater last-mile distribution community.

Continued to successfully fulfill USAID-supported countries' orders in a timely manner, **achieving 94 percent (87 percent COVID-impacted) OTD** in Q4.

**Fully transitioned the PPMR to Reproductive Health Supplies Coalition (RHSC)** while continuing to serve as a key player for supporting the development and **implementation of the GFPVAN** by training in-country stakeholders to use the platform to access shipment data and share information in support of collaborative supply planning.

Launched the **online dashboard** for the **Contraceptive Security (CS) Indicators Survey** and began dissemination of the 2019 survey results to FP stakeholders, including USAID, United Nations Population Fund (UNFPA), GHSC-PSM country directors, and FP leads.

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 global supply, increase financing, and introduce new FP/RH commodities.

### Introduction: Reflections on FY 2020

In the past year, GHSC-PSM expanded its supplier base to achieve greater contraceptive security, fostered data visibility for decision-making, improved supply-chain resiliency, and continued to provide support to countries, Ministry of Health staff, and partners.

GHSC-PSM worked with activity leads and country offices in implementing workarounds to ensure program continuity in the face of COVID-19, such as conducting virtual workshops, switching to other communications methods, and maximizing the use of staff on the ground to advance activities. The project sought creative methods to ensure reliable supply, such as leveraging stock from the RDC as suppliers had to slow or stop production of FP/RH commodities for a period of time because of the pandemic. As a result of these efforts, GHSC-PSM managed to achieve 87 percent OTD in COVID-19–impacted areas.

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

Throughout the year, ensuring data visibility and using data to make sound decisions were overriding themes across all the technical areas that encompass the FP/RH portfolio of core activities. As detailed below, the project aimed to achieve end-to-end data visibility and create an enabling environment whereby countries can use the data to plan as well as advocate for funding to achieve greater contraceptive security.

. Social marketing activities enabled the project to expand the supplier base and provide another option for ensuring the availability of contraceptive options. By continuously engaging social marketing organizations (SMOs) and monitoring their unique requirements, needs, and stock-level data, GHSC-PSM could ensure continuous availability of social marketing products, particularly in an environment of constrained supply. This ensured that generic alternatives were available where needed, thereby preventing stock-outs for some SMOs and improving their method mix to support choice. Overall, GHSC-PSM now has greater visibility into the USAID-supported social marketing landscape, which continues to stabilize the social marketing supply chain.

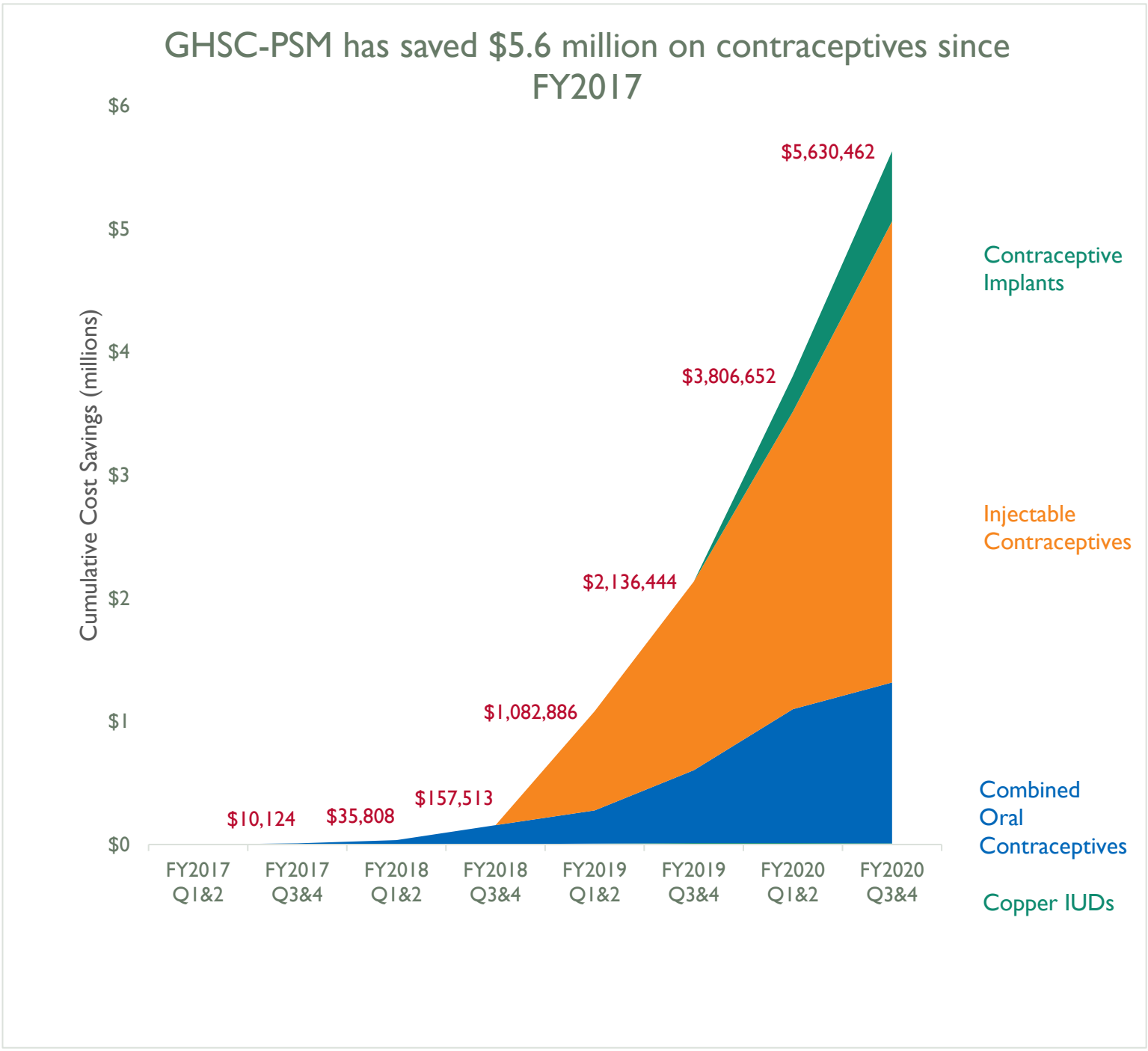
In the area of global collaboration, in addition to GHSC-PSM's participation in the Global Family-Planning Visibility and Analytics Network (GFPVAN), the project presented the online Contraceptives Security Indicators and Interactive Dashboard to the global community. This will enable lower- and middle-income countries to access a wide range of data from their own and other countries to help with planning and decision making. GHSC-PSM's mandate as chair of the RHSC Systems Strengthening Working Group (SSWG) ended this year but the project continues to be engaged and has presented webinars and participated in several working group discussions.

Supply-chain resiliency and expanding focus on the private sector will be themes driving the project toward achieving contraceptive security. GHSC-PSM will aim to continue to expand its supplier base by establishing contracts with multiple suppliers and continue to focus on improving the availability of products up and down the supply chain and, specifically, the last mile.

### Cost-savings on Contraceptives

GHSC-PSM's strategic sourcing activities generate significant cost-savings for USAID through diversifying the supply base, adding generic products to historically constrained and non-competitive markets, and negotiating new supply contracts. As shown in Exhibit 14, the project has saved $5.6 million on combined oral contraceptives, injectable contraceptives, copper-bearing intrauterine devices (IUDs), and implants over the life of the project. These savings represent about 5.5 percent of the procurement value of these key commodities over the life of the project, and about 3.7 percent of contraceptive spending overall, which are significant outcomes in these constrained markets.

Exhibit 14. GHSC-PSM has saved $5.6 million on contraceptives since FY 2017




The biggest savings driver continues to be intramuscular depot-medroxyprogesterone acetate (DMPA-IM). Following supply constraints with the brand-name supplier, GHSC-PSM introduced two generic suppliers, which has brought significant cost benefits in addition to securing the supply. All procurements of DMPA-IM were from generic suppliers in FY 2020, yielding significant cost-savings this year. While procurements from the brand-name supplier will re-start again in FY 2021 and although the project is seeing price increases

because of API price fluctuations, having generic suppliers in the mix will continue to yield cost-savings while improving supply security for countries. The project is also now tracking savings on two-rod contraceptive implants. Before FY 2020, GHSC-PSM paid a single global access price for all implants. In Q2, the project secured a new supplier of two-rod implants at a lower price point, helping to generate significant savings on this product. Generics now represent 34 percent of procurements by value for this product.

### Addressing FP/RH Priorities

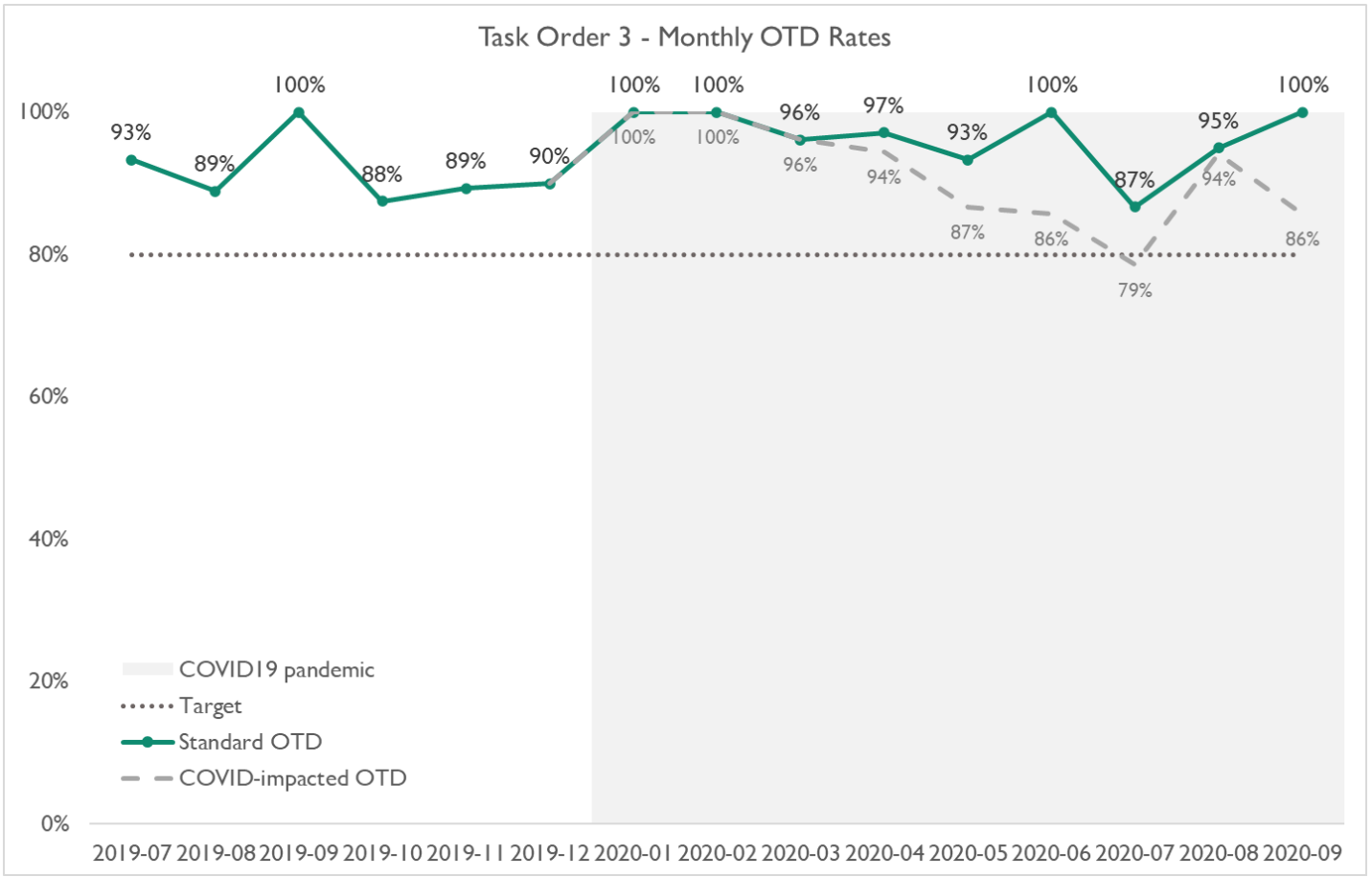
GHSC-PSM addressed USAID's FP/RH priorities by managing and continuously improving its global supply operations; partnering with countries to build self-reliant supply chains; and leading with knowledge and evidence. In Q4, COVID-19 restrictions continued to prevent project staff from traveling to or 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 strategies to ensure program continuity where possible.

### Commodity Sourcing and Procurement

#### *OTD and OTIF*

GHSC-PSM achieved consistently high on-time delivery (OTD) for FP/RH commodities during FY 2020, as shown in the table below. The project achieved a high on-time in full delivery (95 percent) for the same period. For OTIF, project performance continued to exceed the target of 80 percent, averaging 92 percent over FY 2020. See Annex for further details.

Exhibit 15. FP/RH commodities, OTD



***Securing reliable supply while saving costs***

In FY 2020, GHSC-PSM ensured a continuous and reliable supply of commodities to various countries despite severe global supply shortages of injectable, implantable, and oral contraceptives, and shocks triggered by the COVID-19 pandemic.

GHSC-PSM achieved an annual OTD of 95 percent. Furthermore, the FP/RH Task Order team leveraged the project's strong vendor management strategy by negotiating an exclusive long-term minimum supply commitment for a product that often has constrained supply.

**Commodities Procured for FP/RH Programs**

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

***Expanded supplier base and product portfolio***

In FY 2020, GHSC-PSM updated the FP/RH commodity sourcing strategy and planned for Commodity Council 5, to be convened in Q1 of FY 2021. These actions addressed all contraceptive commodity categories—injectables, orals, implants, and IUDs/hormonal intrauterine systems (IUS)—and provided a strong strategic roadmap for procurement and associated activities in the near (one-year) and medium (three-year) term. Also, GHSC-PSM conducted ad-hoc strategic commodity reviews (for injectables and orals) to assess accomplishments and confirm that the strategies remained relevant in the challenging global environment.

Implementation of these strategies led to the award of new contracts, onboarding of suppliers (injectables), and contract modifications to extend existing long-term agreements, thus ensuring a strong contractual framework for the supply of the key FP/RH commodities through the end of the project.

Also, operationalization of the strategies led to the smooth introduction of several generic contraceptives, namely, injectables and implants. In each case, GHSC-PSM developed reference documents to help present the new products, compare them with the existing products within the category, and detail key supply- chain information (logistics, lead time, registration details) to support product introduction in-country. The quick adoption of a generic DMPA-IM and two-rod implant ensured that countries continued to receive injectables while innovator products were unavailable, while also resulting in substantial cost-savings. In FY2020, GHSC-PSM also successfully finalized a procurement LTA with a second generic manufacturer of DMPA-IM within a tight timeline, based on which the first deliveries in destination countries will take place in FY2021.

***Pathways to increasing access to Hormonal Intrauterine System***

In FY 2020, GHSC-PSM, along with donors and key partners, engaged in a holistic approach to support increased access to hormonal intrauterine system (IUS), building on the significant momentum among partners in-country and donors, to strategize and roll out the introduction of a quality-assured product(s) at an affordable public-sector price. In FY 2020, GHSC-PSM released round two of its Hormonal IUS request for quotation (RFQ). In FY 2021, GHSC-PSM will conclude evaluation of submitted responses and intends to introduce the hormonal IUS into the USAID Catalog.

To support efforts toward introducing hormonal IUS into the USAID product portfolio, GHSC-PSM conducted outreach to social marketing organizations (SMOs) to gauge interest in the product and relevant information that could support introduction into local programming. Overall, the outreach confirmed SMO interest in pioneering the product with donor support.

***Product catalog development***

In FY 2020, GHSC-PSM created an initial mock-up for the FP/RH Task Order FY 2021 family-planning and condom product catalog. Product data points and suggested design were developed following interviews with staff across the project, in consultation with USAID, in consideration for use among USAID Missions and global partners. The catalog will provide item-specific data, photos to highlight product specifications, presentation and attributes, and general information about FP/RH Task Order activities, such as the GFPVAN and GS1 data collection. The preemptive development of the draft catalog in FY 2020, tailored to address the needs of various targeted audiences and use areas, will aid in the immediate start of the FY 2021 activity for the final layout and distribution of this revised catalog.

GHSC-PSM considerably expanded the product portfolio FY 2019 and FY 2020 with the addition of generic products in all main commodity categories (injectables, orals, implants) while the supply markets saw an increase in challenges related to systemic shortages, production, and COVID-19 impacts. Given these developments, GHSC-PSM and USAID jointly developed an FP/RH state of supply in Q4 for the USAID Commodity Security and Logistics team that captured the latest supply details of products within each commodity category in the context of COVID-19 and other market dynamics. The state of supply is shared with USAID activity managers and GHSC-PSM country teams to increase visibility and assist country teams to plan their orders accordingly. Also, GHSC-PSM is working to develop a new holistic FP/RH product information catalog in anticipation of the FY 2021 Catalog Refresh activity.

***Social marketing engagement activities***

In FY 2020, the need for a more robust approach and strategy for social marketing organization (SMO) engagement was critical, given the lack of visibility into procurement-related activities by SMOs. GHSC-PSM developed an engagement strategy that identified gaps and challenges in social marketing activities, such as inadequate insight into SMO demand forecasts and stock-level data, global SMO product supply constraints, SMO project contracts/transitions, and social marketing branding regulations. The project initially aimed the strategy to focus on select countries but ultimately covered all SMOs and FP/RH products. Key activities to achieve the SMO strategy objectives (see highlight box) included:

**SMO Strategy Objectives**

Improve and maintain visibility into the social marketing landscape and activities of USAID-funded SMOs.

Ensure visibility informs demand and supply planning and procurement activities.

Facilitate identification of disconnects and opportunities for action.

- Mapping the SMO landscape. This provided much needed visibility into previously grey areas such as contract dates, supported brands and ownership, product portfolios, stock-level data, and demand forecasts. Mapping will continue in FY 2021 on an ongoing basis to stay abreast of the changing landscape as it evolves.

- Continuously analyzing SMO needs with regard to the global supply environment for products such as DMPA-IM, DMPA-SC, oral contraceptives, and specialty condoms. This is critical for informing demand and supply planning as well as procurement strategies for SMOs.

- Consolidating SMO procurements for the past decade into a database and PowerBI dashboard. This resulted in an Excel database and a PowerBI dashboard of SMO condoms and contraceptive procurements between 2000 and 2019 that provides a historical snapshot of product type, quantities, and brands delivered to SMOs per year. Subsequent procurements will be incorporated annually.

The change-oriented nature of these activities throughout FY 2020 was instrumental in the optimization of the social marketing supply chain and will continue to serve as a roadmap. Specific country examples include:

- In FY 2020, the project ensured a reliable supply of contraceptives during SMO transitions in DRC (Population Services International (PSI)), Ghana (Health Keepers Network), Madagascar (AIDSMARK), Mali (Keneya Jemu Kan), Nigeria (Society For Family Health); and extensions/follow-ons in Ghana (Total Family Health Organisation), Malawi (PSI), Mali (Palladium/Jigi), and Nepal (Contraceptive Retail Sales) through long-term insight into social marketing procurement needs, monitoring of contract dates, and stock levels. These efforts helped to inform demand and supply decisions and mitigate supply-chain disruptions common with transitions.

- Despite the global supply constraint of DMPA-IM, DMPA-SC and certain oral contraceptives, GHSC-PSM analyzed SMO stock-level data and demand forecasts, SMO unique branding, and in-country regulatory requirements to develop informed allocation plans and provide generic alternatives. GHSC-PSM also used these data to advocate country needs at the Consensus Planning Group (CPG) when DMPA-SC orders were prioritized. These actions ensured uninterrupted supply for SMOs in countries such as Bangladesh, Ghana, Madagascar, Mali, Nepal, Bangladesh, Senegal, Togo, and Uganda.

In FY 2020, GHSC-PSM also prepared for the procurement of a generic DMPA-IM from a local manufacturer in Bangladesh for the Social Marketing Company (SMC). This resulted in an LTA that includes and frames the procurement of a social marketing trade package product, of which first deliveries will take place in FY2021. This proved to be a challenging process given that it was the supplier's first donor-funded procurement and supply of social marketing trade packaging which has unique branding and regulatory requirements. Through strategic communication and coordination with the supplier, the USAID Mission and SMC, all critical procurement areas were anticipated, confirmed, and aligned. These included local branding and pharmaceutical regulations and requirements, registration and MOH patient leaflet requirements. As a result, all required approvals were obtained permitting the production of the social marketing brand at source and timely supply in September 2020 during a global supply shortage of DMPA-IM. The procurement also bypassed the need for in-country overbranding, thereby saving production and freight costs and reducing the lead time for SMC. For other SMOs, if the product becomes available globally, the use of this option could reduce pressure on the market for this product and in-country overbranding.

***Blue Lady logo brand strengthening***

The Blue Lady logo is the single most recognizable symbol of the FP pills distributed worldwide by USAID since the 1960s. The logo was created to help standardize package design that could be used on all USAID-funded oral contraceptives. That way, clients and clinicians would be assured of the product's quality and authenticity and branding would be consistent when using multiple manufacturers. In FY 2020, GHSC-PSM developed updated Blue Lady Logo Guidelines with the goal of strengthening and protecting the integrity of the Blue Lady brand. Also, GHSC-PSM developed a Blue Lady Logo web page to provide information and guidance about the Blue Lady Logo and allow stakeholders to report issues observed regarding the logo in the market (such as suspicion of counterfeit products, branding issues etc.) through an easy-to-use reporting tool. The web page and reporting tool will go live in FY 2021. This work was done to support the Blue Lady logo trademark which was registered on September 15, 2020 and is the only trademark owned by USAID. The goal of registration is to protect the image of quality the logo has conveyed for almost 50 years.

## Collaboration with Global Stakeholders

In Q4, the project continued to build global partners' awareness of and support for the U.S. Government's FP/RH priorities and programs, and to support USAID's leadership in FP/RH commodity availability through the following activities.

***Systems Strengthening Working Group (SSWG)***
In FY 2020, GHSC-PSM chaired the bi-annual meeting of the RHSC SSWG. Participants led discussions and presentations focused on workforce development, data visibility, and FP/RH supplies in humanitarian settings, among other topics. Following the transfer of the RHSC SSWG chair position from the project, GHSC-PSM initiated discussions with the new chair in Q4 around potential webinar topics for FY 2021, given the lack of in-person meetings because of COVID-19. Webinars led by GHSC-PSM will aim to align both with project objectives as well as the RHSC SSWG work plan.

***Tracking contraceptive security***
In 2019, GHSC-PSM conducted an updated Contraceptive Security Indicators survey in 43 countries. The data, along with an online, interactive dashboard and report, and a new landing page featuring all historical CS Indicators datasets and other resources, were published on the project website in FY 2020 Q4. Survey components included leadership and coordination, finance and procurement, commodities, policy, supply chain, quality, and the private sector. Of the countries surveyed:

- 92 percent with FP2020 commitments (35 out of 38 countries) have committed to increase domestic financing for contraceptives; however, the proportion of government spending to total spending on FP commodities has decreased since 2017 (from 41 to 38 percent).

- 51 percent (21 out of 41 countries reporting) had a funding gap for contraceptive commodities (spending did not meet the forecasted demand for the most recent year).

- 10 percent (4 out of 39 countries reporting) have policies that hinder the ability of the private sector to provide contraceptives,

- 80 percent (32 out of 40 countries reporting) require testing of contraceptives at the national quality control laboratory.

- 63 percent (19 out of 30 countries reporting) have a government-led private-sector engagement plan that includes FP/RH.

In Q4, GHSC-PSM began dissemination of the results of the survey, which was conducted in 2019, to partners through virtual presentations and other online forums, with an emphasis on how to navigate the dashboard and how to use the data. In the immediate weeks following the launch of the landing page and dashboard, 583 individuals (unique page views) accessed the dashboard and 158 accessed the landing page. This compared to 412 individuals who accessed the dashboard during a similar timeframe following the launch of the 2017 CS Indicators Survey, which represents an increase of more than 40 percent. Among the many social media posts that were disseminated to announce the launch of the 2019 CS Indicators dataset and dashboard, the most popular post garnered 1,953 impressions and 20 engagements. Following discussions with the project, the RHSC is anticipated to survey seven additional Latin American countries in the coming year.

The survey results are intended to enable decision-makers in countries and the global health community to monitor progress towards contraceptive security as well as inform policies, program planning, and advocacy for increased resources.

***Dissemination of total market method mix analyses***

In FY 2020, GHSC-PSM awarded a Task Order to IQVIA to update and disseminate total market analyses conducted in FY 2018 and FY 2019. This was aimed at enabling stakeholders to better understand the availability of contraceptive supplies in Kenya and South Africa. In Q3 and Q4, IQVIA presented the results of the Kenya and South Africa analyses to stakeholders in those countries, including USAID Missions, MOH, and implementing partners, as well as the Total Market Approach Working Group and USAID/Washington. In FY 2021, IQVIA intends to publish the results of the Kenya and South Africa analyses.

***Last-mile market research***

Last-mile distribution is a critical step in the supply chain to ensure clients have access to lifesaving medicines and supplies and a full range of modern contraceptive choices when and where they need them. Dynamic route optimization tools can help facilitate cost-efficient planning for distribution managers and help them tackle some of these challenges.

As part of GHSC-PSM's commitment to sharing information and collaborating with the greater last-mile distribution community, the project released a report on market research conducted to identify and categorize existing dynamic routing offerings. The team reviewed past performance and experiences in the last-mile market, conducted interviews with select providers, and synthesized the findings from the reviews and interviews to develop a comprehensive list of offerings and insights on current trends.

***Coordination with UNFPA***

In the first half of FY 2020, GHSC-PSM actively participated in coordination activities with UNFPA, such as quality-assurance and procurement discussions, Coordinated Supply Planning (CSP)/CPG routine meetings, and GFPVAN coordination meetings. Strong coordination with UNFPA through the CSP/CPG and supplier relationship management during the second half of the year when COVID-19 significantly exacerbated global supply-chain shortages of injectables and implants facilitated supply allocation and improved access to countries.

Building on the desk research and in-country case studies conducted in FY 2019, GHSC-PSM conducted interviews with FP/RH suppliers in FY 2020 to understand manufacturing opportunities and constraints regarding harmonization of secondary and tertiary packaging with UNFPA. Also, the interviews aimed to explore opportunities for optimizing packaging to support the needs of in-country supply chains as well as opportunities to implement greener packaging specifications. In FY 2021, GHSC-PSM will disseminate the findings and recommendations of this work.

GHSC-PSM in FY 2020 also played a major role in efforts to merge Coordinated Assistance for Reproductive Health Supplies (CARhs) and CSP into the CPG under the GFPVAN. Following this merger, PPMR administrators identified and resolved a total of 52 action requests. The merger will continue to increase efficiencies to support coordinated supply planning through the use of a single platform.

***Enhanced procurement planning tool***

In FY 2020, GHSC-PSM initiated the development of a modernized forecasting and supply planning software, the Quantification Analytics Tool (QAT). The new software will replace the legacy supply planning solution, PipeLine, and improve planning performance by increasing data visibility through its capability to interface with upstream procurement systems such as ARTMIS, downstream with in-country warehouse management systems and LMISs, and with the GFPVAN specifically to exchange FP/RH commodities supply plan data.

With QAT, countries can use a single platform that integrates forecasting and supply planning, that works online and offline, has updated supply planning algorithms, and has improved data analytics and reporting capabilities.

***Enhancing visibility of FP supplies data***

GHSC-PSM continued to serve 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, as MOH and SMO's demand plan and shipments information, and improve collaboration across stakeholders. Key GHSC-PSM contributions to GFPVAN in FY 2020 included:

- Trained representatives from Ministries of Health, UNFPA, USAID, and other partners in three pilot countries, Ghana, Malawi, and Nigeria, to use the GFPVAN platform to access upstream order/shipment data from UNFPA and GHSC-PSM and to share their inventory and supply plan data in support of collaborative demand and supply planning.

- Worked closely with Ministry representatives in Ghana and Malawi to use data in the GFPVAN platform and the GFPVAN network to avert stockouts/overstock through creating three new shipments, cancelling one shipment, and providing critical information on donor orders.
- Enhanced the feed between ARTMIS and the GFPVAN to include male/female condom order and shipment data.

- Developed three dashboards that enable access to critical contraceptive inventory data for GFPVAN members.

***Global collaboration to avert stockouts and enhance supply planning***

In FY 2020, GHSC-PSM's Procurement Planning and Monitoring Report (PPMR) team received and processed 242 reports from 36 countries and 68 programs. In total, over 367 inventory issues were routed through the PPMR workstream and addressed. Based on data on stock imbalances in the PPMR, the project worked with the CARhs group to:

- Create 31 new shipments for more than two dozen countries, including Bangladesh, Benin, Burundi, Ethiopia, Madagascar, Nigeria, Senegal, and Tanzania.

- Expedite 24 shipments to countries such as Bangladesh, Benin, Burkina Faso, Guinea, Kenya, Liberia, Nigeria, Madagascar, Pakistan, Tanzania, Togo, and Uganda to prevent or mitigate stockouts.

- Postpone or cancel 29 shipments to countries including Burundi, Burkina Faso, Guinea, Liberia, and Togo to reduce or avoid overstock situations and prevent commodity expiries.

- Achieve 32 in-country product transfers among programs in Benin, Côte d'Ivoire, Ghana, Madagascar, Tanzania, and Togo. As a result, FP programs could replenish their stocks and increase cross-program collaboration.

Overall, stock issues identified and resolved through the PPMR saved the RH global community approximately $2 million through transfers of products and the postponement or cancellation of orders.

***Supply chain resiliency***

COVID-19 significantly disrupted supply chains that distribute public health commodities at the last mile. To support in-country recovery efforts following the COVID-19 pandemic, in FY 2020, GHSC-PSM initiated a new activity to develop the Recovery Strategies for Supply Chain Post-Black Swan Event Field Guide that in-country decision-makers can use to support post-Black Swan recovery efforts at the last mile. The guide, which incorporates input from select country directors and USAID, helps decision-makers plan for recovery, weigh the information and advice they have received and make informed decisions. It introduces principles of more frequent planning cycles following rare "black swan" events like a pandemic where demand is projected, adjusted and frequently assessed to prioritize and reprioritize supply plans. This process provides stakeholders with a process to think through their recovery strategy—not just internally within an organization but as part of the supply-chain network. The field guide is currently in the last stage of finalization. Once finalized, it will be widely disseminated through various platforms such as the IAPHL, the GHSC-PSM project website, RHSC, Twitter, LinkedIn, amongst others to reach the largest in-country stakeholders.

**Transition of PPMR to RHSC**

The PPMR fully transition from GHSC-PSM to RHSC in Q4. Beginning October 1, both PPMR administrators were seconded to RHSC by GHSC-PSM and thus joined the GFPVAN in the role of Control Tower Global Analysts. The country data analyst, in conjunction with other GFPVAN Control Tower members and country partners, will work to identify and develop actionable solutions to supply chain related issues as they arise through the GFPVAN with the goal of mitigating the risk of stockouts, shortages, and overstocks. The merger will continue to improve efficiency and coordinated supply planning through the use of a single platform.

The guide outlines insights and experience from historical events across the three major types of supply-chain shocks: demand shocks, supply shocks and when supply and demand shocks are combined. Lessons learned from GHSC-PSM management of the global supply chain show that a coordinated effort, with frequent and open communications across the extended supply chain, are key to resilience.

## Country Support

Below, are examples of the technical assistance that GHSC-PSM provided to strengthen in-country[12] supply chains for FP/RH commodities this reporting period.

Kitting exercise in South Sudan. *Photo credit: GHSC-PSM*

**South Sudan.** The GHSC-PSM project conducts kitting exercises for FP commodities three times a year to ensure an uninterrupted supply of contraceptives in South Sudan. Since early 2018, GHSC-PSM has worked on kitting activities in collaboration with various stakeholders, including the MOH, UNDP, and UNFPA. Previous kitting cycles were challenged by kit content inconsistencies, incorrect kit labels, and difficulties tracking commodities correctly. To address these challenges for distribution cycles 11 and 12 (June to October 2020) GHSC-PSM took steps to increase kitting process monitoring by deploying Taroworks, a real-time, cloud-based monitoring platform. This platform allowed the project to oversee the two kitting processes remotely, because of COVID-19.

Taroworks enhanced the quality of the kitting exercise and helped avert potential kitting errors in 2,700 basic kits and 477 supplementary kits by increasing visibility into the kitting contents and making it easier to correct errors. For example, real-time data into Taroworks meant that there was a simple way to validate the data and conduct quality-assurance exercises each day of the kitting activity, rather than in one larger QA exercise at the end, when it would be more difficult to fix mistakes.

**Zambia.** GHSC-PSM sponsored and participated in a virtual three-day FP annual review meeting in Q4, along with teams from Kenya, the United States, and Zambia as well as MOH national and sub-national staff, local and international partners, and FP donors. The in-person meeting was originally scheduled for April but was postponed because of COVID-19 restrictions.

Discussions focused on successes and challenges in FP programming as well as prioritization of interventions and activities for the next 12 months. Participants developed key strategies to enhance FP programming and included them in the revised Zambia Family-Planning Costed Implementation Plan (FP-CIP 2021–2026).

[12] GHSC-PSM procured FP/RH commodities for the following countries: AFRICA: Angola, Benin, Burundi, DRC, Ghana, Guinea, Liberia, Madagascar, Malawi, Mali, Mozambique, Nigeria, Rwanda, Senegal, Tanzania, Togo, Uganda, Zambia; LAC: Haiti; ASIA: People's Democratic Republic of Bangladesh and 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, Panama; ASIA/NEAR EAST: Nepal, Pakistan.

## B4. Maternal, Newborn, and Child Health

**Seven countries procured MNCH medicines and commodities** and **19 countries received health supply-chain systems strengthening** with MCH support in Q4.

By the end of Q4, the project had procured **$12.4 million in MNCH commodities over the life of the project, including $1.2 million in Q4**.

The project published an assessment report and other materials on the **capacity of private wholesalers** in Zambia and Mozambique to supply quality-assured MNCH commodities.

Under the Maternal and Child Health (MCH) task order, GHSC-PSM supports efforts to prevent child and maternal deaths by increasing access to quality-assured medicines and supplies for MNCH. In collaboration with USAID, the project provides global technical leadership on MNCH commodities and ensures that supply-chain management considerations are included in global dialogue and initiatives.

This section of the GHSC-PSM annual report will first reflect on MCH FY 2020 milestones and challenges and then summarize the achievements of each MNCH supply-chain area, including the achievements of our country offices. The section will address the following areas: improving the availability of quality oxytocin; improving MNCH commodity data availability and use; strengthening systems to improve management of quality-assured newborn and child health (NBCH) commodities; ensuring the availability of quality-assured MNCH commodities in the private sector; global MNCH leadership; and procurement, deliveries and systems strengthening to countries.

### Introduction: Reflections on FY 2020

The MCH task order reached several notable MNCH supply-chain milestones this year. A major milestone was developing an oxytocin degradation modeling tool that analyzes temperature and commodity data to understand what proportion of transported oxytocin has maintained its quality by the time it reaches the point of delivery. This tool can help governments better understand the need to maintain oxytocin through the cold chain and have data on hand to advocate for alternative, non-heat-sensitive uterotonics in some situations to prevent and treat postpartum hemorrhage (PPH).

The project also launched the EUV toolkit, a consolidation of EUV lessons to date that standardizes sampling, training, and implementation. This toolkit will allow for trend analysis on the collected data and increase understanding of MNCH commodity management practices and impacts. The project conducted two rapid assessments related to NBCH in Liberia and Mali. These revealed opportunities to increase awareness and use of recommended products and formulations for the treatment of diarrhea, pneumonia, and birth asphyxia. Both countries developed action plans based on project recommendations to transition to these formulations and made progress by updating national standard treatment guidelines (Mali); conducted quantification for select commodities for the first time (Liberia and Mali); and worked with GHSC-PSM to advocate for adoption and integration of these commodities into the countries' national supply chains in FY 2021. Specific progress in these areas is described below.

***Looking forward***

In FY 2021, GHSC-PSM will implement the oxytocin tool, using it to shape national policies that ensure supply of the correct mix of PPH commodities to safely care for pregnant women; follow-on NBCH activities will help increase access to vital child health commodities; and EUV surveys will provide insights into the impact of countries' supply-chain work on MNCH commodity availability. GHSC-PSM will continue private-sector capacity building through domestic MNCH commodity wholesalers. The project will develop and pilot a curriculum to strengthen wholesaler associations and co-design (with partners in this area) targeted interventions to enhance wholesaler capacity. Greater detail on where and how many of these activities will be implemented are included below.

The project seeks to empower its country office staff as they are well placed to advise which interventions achieve the most lasting impact on commodity security. This will be achieved in FY 2021 through initiatives such as:

- Enhancing countries' analytics tools for supply-chain decisions and performance monitoring.
- Developing a catalog of country tools that will allow countries to learn from one another and assist them to build on established tools.
- Facilitating frequent and strategic collaborations across the countries the project supports through regularly scheduled webinars, listservs, and facilitated discussions. This will include sharing and discussing global trends and country lessons and successes to improve MNCH commodity management among project staff and with partners when appropriate.

***Addressing COVID-19 challenges***

In FY 2020, GHSC-PSM continued to implement core activities in the MCH portfolio despite several challenges posed by COVID-19. While a brief pause on select MCH core activities at the onset of lockdowns in the face of the pandemic was required in Q3, activities have since resumed and been modified to accommodate a more virtual working environment. More on how the project has supported countries' management of MNCH commodities in the time of COVID-19 is included under Global Technical Leadership below.

## Improving the Availability of Quality Oxytocin

Oxytocin, the recommended product for preventing and treating PPH, is a heat-sensitive uterotonic that requires transport and storage under refrigerated conditions, i.e., cold chain, to prevent product degradation. Keeping oxytocin within a proper temperature range is a common challenge in many countries where cold chain infrastructure is limited and, in some cases, countries must consider storing and distributing alternative uterotonics (such as misoprostol for PPH).

***Country-level efforts***

**Ghana.** In FY 2020, GHSC-PSM provided technical assistance, made supply-chain recommendations, and advocated to the Ghana Health Services (GHS) to help improve oxytocin injection quality. As a result, GHS implemented two key policy-level changes. These changes will help ensure women receive affordable, quality-assured oxytocin at the point of care:

- Added oxytocin to the national framework contract to control oxytocin prices, assure product quality, and

A midwife in Ghana takes oxytocin from cold storage, where it is kept to maintain its quality. *Photo credit: GHSC-PSM/Bobby Neptune*

maintain consistent availability throughout the country.

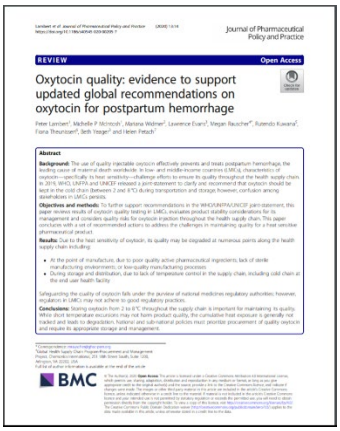
- In partnership with the National Health Insurance Scheme (NHIS), increased the NHIS designated reimbursement price for oxytocin from 0.11 to 4.63 Ghanaian Cedis to ensure that the price reflects manufacturing costs associated with quality assured oxytocin.

**Liberia.** GHSC-PSM provided technical assistance to Liberia's Family Health Division (FHD) to improve selection and supply-chain management practices for uterotonics. These activities are summarized below.

- The project convened government and partner stakeholders to review best practices for oxytocin storage, recent oxytocin quality evidence, and updated global recommendations for PPH. During the discussion, stakeholders agreed to expand the use of misoprostol in facility settings without refrigeration and to support efforts to integrate oxytocin into the vaccine cold chain in accordance with government policy.
- As a result of the project-led discussions, Liberia's March 2020 quantification included additional quantities of misoprostol for PPH and, by the end of FY 2020, orders for additional misoprostol for PPH were in process by UNFPA.
- FHD also started to work closely with the West African Coast Initiative, supported by the West African Health Organization, to develop Liberia's PPH guidelines; these guidelines will provide a foundation to implement effective interventions for reducing the burden of PPH.
- FHD has strongly adhered to the recommendations from GHSC-PSM to use both misoprostol and oxytocin in the management of PPH and the project will continue to work with FHD to advocate for continuous supply of lifesaving uterotonics in health facilities.

**Mozambique.** GHSC-PSM partnered with Monash University in FY 2020 to assess oxytocin management practices in Mozambique and understand the potential impact of long storage durations at ambient temperatures on product quality. GHSC-PSM and Monash University combined data from national logistics and management information systems (LMISs), temperature databases, ***and oxytocin degradation studies to predict oxytocin degradation patterns under real low- and middle-income country (LMIC) supply-chain conditions.*** In FY 2020, based on the analysis of this data, the project developed a predictive degradation tool for oxytocin. In FY 2021, GHSC-PSM will draft findings and recommendations, share results with the Ministry of Health, and co-develop a concrete action plan to carry forward key recommendations.

***Increasing the global knowledge base on oxytocin storage and management***
In Q3, the *Journal of Pharmaceutical Policy and Practice* published a peer-reviewed article entitled, "Oxytocin quality: evidence to support updated global recommendations on oxytocin for postpartum hemorrhage." GHSC-PSM led the authorship of this article in collaboration with WHO, UNFPA, the Promoting Quality Medicines Program, Concept Foundation, and Monash University. In Q3 and Q4 FY 2020, GHSC-PSM disseminated the article to MCH-supported countries and continues to use the article as evidence to advocate for improved oxytocin storage and management.


Journal of Pharmaceutical Policy and Practice

REVIEW Open Access

Oxytocin quality: evidence to support updated global recommendations on oxytocin for postpartum hemorrhage

BMC

In May 2020 GHSC-PSM published a peer-reviewed oxytocin article in the *Journal of Pharmaceutical Policy and Practice.*

## Improving MNCH Commodity Data Availability and Use

***End-Use Verification (EUV) Survey***
The EUV survey collects data on commodity availability, storage conditions, and factors that affect commodity availability at service delivery points. Typically, the EUV is implemented in countries where national LMISs are either not available or do not include consistent data on commodities. Originally, the EUV was developed to collect data specifically on malaria

commodities. However, GHSC-PSM expanded the EUV to include MNCH and FP/RH commodities for better understanding of stock levels and consumption, and ultimately improving availability of these products.

In FY 2020, the project supported data collection on MNCH commodities through EUV surveys in 10 countries. The table below depicts GHSC-PSM country offices that collected, analyzed, and submitted EUV reports during each quarter of FY 2020.

Exhibit 16. MNCH EUV surveys conducted in FY20

| Quarter | Countries that conducted the EUV survey |
|---|---|
| 1 | DRC, Liberia, Mali |
| 2 | Ethiopia, Nigeria, Zambia |
| 3 | Burkina Faso |
| 4 | Benin, DRC, Ghana, Guinea, Liberia, Mali |

In Q1, the project helped finalize reports for three countries and provided in-person training for analyzing EUV data to the Mali EUV team. In Q2, GHSC-PSM helped submit three EUV reports and provided virtual training to the Zambia EUV team on data extraction.

Six EUV reports were delayed because of the onset of COVID-19, but data collection was re-initiated in Q4 as lockdown measures were lifted. The six reports will be finalized and submitted to USAID in FY 2021.

To continually improve the EUV survey, oxytocin storage indicators were updated in Q3 to better understand how oxytocin is being integrated into the cold chain in GHSC-PSM-supported countries. These questions were piloted with the Liberia country office in Q4, and the results will be used to advocate for better storage practices. In FY 2021, the updated indicators will be added to every MNCH EUV report to track oxytocin storage status in GHSC-PSM-supported countries.

***Data use for MNCH commodity decisions***

Over the past several years, LMICs have made significant investments in data management of health commodities, including LMISs. When health data are accessible, accurate, and easy to analyze, supply-chain actors can make informed decisions for efficient commodity management. When designed effectively, electronic LMIS (eLMIS) platforms equip supply-chain managers with the tools to analyze national logistics information and examine commodity-specific data, consumption trends, and supply-chain variation within and across regions and facilities.

In FY 2020, GHSC-PSM conducted a data use survey in 15 GHSC-PSM-supported countries to map which MNCH commodity data are available across electronic and paper-based systems for health, logistics and warehouse management and the ease of use of existing data analytics functions. The project found that:

- Many countries use both paper-based and electronic systems, which can challenge efforts to manage, coordinate, and analyze data on MNCH commodity availability.

- Supply-chain staff often face the time-consuming challenge of manually entering, consolidating, and analyzing logistics-related data, which delays decision-making and hinders their ability to respond promptly to challenges.

The next phase of this activity aims to create a data use and analytics tool catalog for GHSC-PSM staff in all 19 countries supported by the MCH task order (see "Procurement, Deliveries and Systems Strengthening" for a full list) where they can search solutions and pull programming code and other related information to

meet their MNCH commodity data analytics needs. The catalog will be designed and implemented in FY 2021.

### Strengthening Systems to Improve Management of Quality-Assured NBCH Commodities

Increasing global availability of amoxicillin dispersible tablets (DT), co-packaged oral rehydration salts (ORS), and zinc (ORS+zinc), and appropriate newborn resuscitation equipment has been identified as a crucial step in reducing preventable child and newborn deaths. In FY 2020, Liberia and Mali were assessed to (1) identify the main barriers to access of these products and (2) develop action plans to increase commodity availability.

Integrating critical newborn health commodities and equipment, such as resuscitation devices to address birth asphyxia, into the supply chain helps ensure access to the products. Doctors and midwives in the pictured Ghanaian labor ward depend on reliable access to fully functioning resuscitation equipment. *Photo credit: GHSC-PSM/Bobby Neptune*

**Liberia.** The Liberia assessment, conducted early in FY 2020, revealed several challenges:

- The government was not procuring amoxicillin DT as a part of its national supply chain. The preference was for other formulations, including powder for suspension.
- While some partners did procure the commodity for use in Liberia, it was exclusively through the community health assistant (CHA) program.
- ORS+zinc was also only available through the partner-supported CHA program.
- Newborn resuscitation equipment was available at facilities to some extent, but it was exclusively provided through ad hoc partner donations directly to service delivery points.

GHSC-PSM worked with the government and MNCH partners to develop an action plan. As a result:

- The government of Liberia quantified amoxicillin DT and ORS+zinc for the first time.
- The project began working with the MOH and central medical stores to ensure the latest shipment of amoxicillin DT (which arrived in Q4) is distributed and used for treating childhood pneumonia.
- Liberia's FHD has prioritized integration of amoxicillin DT and ORS+zinc into the Reproductive-Health Program commodities list. This designation will likely allow for increased dedicated resources for procuring and managing amoxicillin DT and ORS+zinc and add them to the data collection systems to monitor availability and consumption patterns.

**Mali.** The Mali assessment was conducted at the end of FY 2019. As a result:

- The government adopted protocols for pneumonia treatment that list amoxicillin DT as the preferred first-line treatment for pneumonia in children under five. This policy change will trigger

the central medical stores to initiate procurements of the DT formulation and begin to manage and avail the commodities for use in facilities. The community level will continue to receive amoxicillin DT through service delivery partners outside of the national public supply chain before the commodity is integrated.

- GHSC-PSM in Mali advocated for a systematic integration of the DT formulation into the national system and will continue to support integration of these commodities into the national system through FY 2021 activities.

### Ensuring the Availability of Quality-Assured MNCH Commodities in the Private Sector

A critical component of reaching health goals in LMICs is improving the availability of quality health products. Private-sector domestic wholesalers are a central actor in many health supply chains, often serving as the connection point between manufacturers of MNCH commodities and points of dispensation in public, private, and NGO sectors. In FY 2020, GHSC-PSM finalized its MNCH commodity wholesaler assessments conducted in Mozambique and Zambia. The assessment reports address the ability of domestic wholesalers to ensure the quality of MNCH commodities in support of the journey to self-reliance.

Building on these assessments, GHSC-PSM planned additional activities to improve the quality of MNCH commodities available through domestic wholesalers. In Q4, GHSC-PSM held interviews with 14 experts on the role of domestic wholesalers in health supply chains and planned a joint partner meeting on the subject to be held in FY 2021. GHSC-PSM also designed an activity to strengthen wholesaler associations and to source data on MNCH commodities to understand the supply landscape in Kenya.

### Global Technical Leadership

***Updated MNCH commodity quantification guidance***
Throughout quarters 1, 2, and 3, GHSC-PSM suggested updates and revisions to the USAID Medicines, Technologies, and Pharmaceutical Services (MTaPS) Program on the 2016 global quantification resource for MNCH commodities, "Quantification of Health Commodities: RMNCH Supplement." Originally developed under the UN Commission on Life-Saving Commodities for Women and Children, this resource helps national governments estimate needed quantities of reproductive-health and MNCH commodities. In FY 2021, GHSC-PSM will partner with MTaPS to pilot and disseminate the revised guidance.

***Technical working groups on maternal health commodities***
GHSC-PSM continues to participate in key technical working groups, including the Maternal Health Supplies Caucus (MHSC) and the Postpartum Hemorrhage Community of Practice (PPH COP). In Q4, the project prepared and delivered a presentation to the PPH COP on GHSC-PSM's oxytocin-related support in Ghana. Also, GHSC-PSM shared information collected on global product supply observations and highlights from the discussions with country offices on the impacts of COVID-19 with the UNICEF Supply Division and MHSC.

***Technical support to countries in the context of COVID-19***
The COVID-19 pandemic raised unprecedented pharmaceutical supply-chain challenges. In FY 2020, GHSC-PSM convened a discussion series on supply-chain challenges and supply-chain management best practices during a pandemic. Through these discussions, GHSC-PSM country offices and supply chain experts across the project shared information and strategies on forecasting, supply planning, inventory, warehousing, and distribution in the time of COVID-19. To understand the impact of COVID-19 on MNCH supply chains, GHSC-PSM compiled high-level market information on MNCH products in *Trends and Observations: Maintaining maternal, newborn and child health commodity supply in the time of COVID-19.*

Lastly in Q4, GHSC-PSM developed a guidance document to respond to changes in MNCH commodity needs during the COVID-19 pandemic. The document was developed for public-sector supply chain and MCH program stakeholders and includes considerations for alternative options for dispensing and distributing MNCH commodities. It will be disseminated in Q1 FY 2021.

### Procurement, Deliveries and Systems Strengthening

GHSC-PSM supported procurement of MNCH commodities for seven countries in FY 2020.[13] This includes a large procurement and delivery of 24 unique items to 8 different locations in DRC for a total of 123 lines of essential medicines and consumables. In Q4, GHSC-PSM delivered 10 unique essential medicines to Liberia including amoxicillin dispersible tablets, a product recently integrated into Liberia's Reproductive Health (RH) Program commodities list to increase its reliable supply to health facilities to treat childhood pneumonia. As described in the assessment of Liberia's supply chain for amoxicillin DT and other newborn and child health commodities, the existing RH program also manages maternal and newborn health commodities.

Through the technical activities described above, the project provided MNCH systems strengthening support to a total of 19 countries in Q4.[14]

***Nepal rolls out eLMIS***

The MCH task order provides technical assistance to Nepal as it improves its information systems for managing health commodities. Facing COVID-19 challenges, GHSC-PSM in Nepal fast-tracked the rollout of eLMIS at local-level facilities in the country and helped integrate critical COVID-19 commodities into the system so that they could be properly managed and data could be gleaned on stock and consumption levels. Achievements include:

- Through training, the project operationalized eLMIS in 113 local-level facilities in Sudurpashchim and Gandaki provinces in September 2020. Scale-up continues in other provinces to strengthen the health commodity supply chain across the country for better decision-making.

- Currently, eLMIS is operational in all central, provincial, and district stores and major hospitals.

- Earlier in 2020, GHSC-PSM also provided training on eLMIS software in 39 COVID-19 sites at the central and provincial levels, including health logistic management centers, COVID-19 medical stores, National Public Health Laboratory, COVID-19 Crisis Management Center, and other medical college and hub hospitals.

- As GHSC-PSM trains supply-chain staff on proper use of eLMIS, LMIS reporting rates have improved significantly and at the end of FY 2020, the rates averaged 93 percent.

[13] Countries that received procurement support: DRC. Ecuador, Haiti, Liberia, Malawi, Mali, Nigeria

[14] Countries that received systems strengthening support: AFRICA: Burkina Faso, Ethiopia, Ghana, Guinea, Liberia, Madagascar, Malawi, Mali, Mozambique, Nigeria, Rwanda, Zambia; LAC: El Salvador, Guatemala, Haiti, Honduras, and Panama; ASIA: Nepal, Pakistan

## B5. Other Emerging Health Threats

In Q4, following GHSC-PSM's delivery of **160 thousand mosquito repellent bottles** to Ecuador to protect pregnant women from Zika, the project supported the Ecuadorian Ministry of Health in **distributing the repellent to 8 regional warehouses** for final delivery to antenatal health care clinics across the country.

The project conducted a virtual regional workshop to build emergency supply chain (ESC) capacity for Ministry of Health supply-chain teams in Antigua and Barbuda, Guyana, Suriname, and Trinidad and Tobago to **prepare for future outbreaks of infectious disease**.

The project worked closely with the **Peruvian Ministry of Health** to design and carry out an **ESC preparedness training**. The training focused on identifying current gaps in the supply chain and developing action plans for outbreaks of infectious diseases (including COVID-19).

GHSC-PSM is working with Ministries of Health (MOHs) across Latin American and the Caribbean to provide critical Zika diagnostic and prevention supplies. GHSC-PSM is also building resilient supply chains that are equipped to face the challenge of emerging public health threats when they arise.

### Supporting the Zika Response

GHSC-PSM provides commodities for health programs to help pregnant women avoid contracting Zika, an arbovirus and sexually transmitted infection that can cause severe birth defects when it infects women during pregnancy. From early 2017 to October 2020, GHSC-PSM equipped MOHs from 14 countries with male condoms and mosquito repellent and provided technical assistance to prevent Zika's spread.

The project reached several procurement and Emergency Supply Chain (ESC) milestones in FY 2020:

- Worked with the governments of **Ecuador** and **El Salvador** over several weeks to customize national emergency response playbooks. These will strengthen protocols and plans for ESC operations for Zika and other health emergencies, such as the ongoing dengue outbreak.
- Conducted a workshop with **Jamaica, Nevis, Saint Kitts, St. Lucia, and Saint Vincent and the Grenadines** in partnership with the Organisation of Eastern Caribbean States to increase understanding of ESC response and how to develop effective and timely ESC systems in the event of an emergency.
- Assisted the **Dominican Republic**'s Ministry of Health in implementing the ESC Playbook and worked through a local organization to institutionalize ESC policies. By training the Ministry of Health and supporting development of a ministerial decree, a cross-agency ESC committee was established in Q4. The decree ensures continuity of the Ministry's ESC work, regardless of changes in government administrations; an important step to institutionalize these efforts and enhance sustainability.

- Delivered **160 thousand bottles of mosquito repellent to Ecuador** and more than **3.5 million male condoms to El Salvador** to reduce Zika transmission.

- Developed and disseminated a lessons learned document summarizing key takeaways from the extensive technical assistance provided to countries to prepare for health emergencies.

***Repellent***

In Q4, GHSC-PSM helped distribute 160,008 bottles of repellent to warehouses in Ecuador. GHSC-PSM provided technical assistance to the supply-chain staff managing this order, including for quantification, donation agreements, import permitting, warehousing, transportation, and distribution logistics. The repellent was ultimately distributed to antenatal clinics selected in coordination with USAID/Ecuador and the USAID ASSIST project.

### Emergency Supply-Chain Preparedness

In Q4, GHSC-PSM supported four Caribbean countries and Peru to improve their ESC preparedness. In the context of COVID-19, countries have been eager to improve supply-chain responsiveness and better prepare for outbreaks to limit their impact. The activities in these countries have allowed them to identify weaknesses in their routine supply chains and coordination mechanisms across government agencies, and to identify and implement solutions that address these weaknesses and put other mechanisms in place.

**Caribbean.** In Q4, the project led an accelerated four-day virtual workshop with several Caribbean nations aimed at strengthening their ESC preparedness. Participants from the MOHs in Antigua and Barbuda, Guyana, Suriname, and Trinidad and Tobago were introduced to the Emergency Supply Chain Playbook tools and resources and discussed their application and specific implications for their own ESCs. They then worked together in country teams to customize these tools and to develop next steps and action plans.

**Peru**. In early 2020, plans for a five-week ESC activity were abruptly postponed because of the COVID-19 pandemic (just a few days short of the start date). In Q4, GHSC-PSM initiated planning once again with the Peruvian MOH to launch a condensed virtual training. The event focused on one supply-chain component that the participants deemed particularly important, international procurement. GHSC-PSM adapted training materials and guided participants to identify existing day-to-day gaps in the country's procurement processes, trained participants on best practices and protocols, and facilitated creation of an action plan to close the gaps. GHSC-PSM worked with high-level MOH authorities to obtain a commitment to implement a set of short-term actions in key supply-chain areas (as identified during the workshop), especially in light of the ongoing pandemic.

SECTION C

# PROGRESS BY OBJECTIVE

## C1. Global Commodity Procurement and Logistics

**Procured $347.6 million** in health commodities. Procurement values have reached **$3.2 billion for the life of the project**.

**Delivered 1,712 line-item orders** in Q4, with a value of **$325 million**. This marked our biggest quarter to date, with **over $100 million** spent on COVID-19 response commodities and **$92 million** in adult ARVs.

**Delivered 88 percent (74 percent COVID-impacted) of line items on time**, based on the defined on-time window (within the period 14 days before or seven days after the agreed delivery date). **Delivered 87 percent (69 percent COVID-impacted) on time and in full.**

### Introduction: Reflections on FY 2020

As GHSC-PSM achieved ever-higher levels of operational effectiveness in the global health supply chain (demonstrated by six consecutive quarters of 85+ percent OTD and almost $185 million in negotiated savings on commodity costs, logistics and warehousing), FY 2020 was characterized by an increased emphasis on more strategic initiatives. These included greater integration with in-country programs, use of advanced data analytics to drive decision-making, sophisticated sourcing strategies to achieve better market health, and stronger supplier relationship management techniques to improve performance and derive more value. Building on the success of the first-line ARV transition efforts and other cross-project initiatives, GHSC-PSM focused on value-added services that supported programmatic outcomes.

The multi-month dispensing (MMD) simulation tool is one example of both the greater integration with country programs and the use of advanced analytics. With the aggressive acceleration of MMD because of the COVID-19 pandemic, the simulation tool enabled national stakeholders to run MMD simulations and determine the country's optimal strategy. This tool also allowed us to analyze the global impact of the MMD acceleration and to act quickly. Just one month after placing the project's quarterly restocking order for one ARV in March, GHSC-PSM immediately went back out to the market and firmed up an additional order valued at $66 million. New sourcing strategies designed to improve market health were introduced for all product categories for task order malaria and across many other task order product categories in FY 2020. Greater value was derived from suppliers resulting in new contracts that included vendor-stored inventory and pre-positioned stock and product shelf life extension. Perhaps the most striking advancement was in using data visualization tools, such as those developed for the COVID-19 response efforts, to convey complex information to a wide and diverse audience effectively and quickly. In FY 2021, GHSC-PSM will expand the emphasis on advanced analytics, data visualization and information sharing with internal and external actors to help orchestrate the end-to-end supply chain and drive programmatic change.

GHSC-PSM began to feel the supply-chain impacts of COVID-19 early in Q2 and activated quickly to mitigate risk and ensure a continuous product flow to countries. At that time, GHSC-PSM established a task force with representation across the project that modeled activities according to the industry standard SCOR (Supply Chain Operations Reference) model. Over seven months, the task force set up new processes and procedures, implemented system changes and developed new tools and reports that allowed GHSC-PSM to manage the impact of COVID-19.

In India, suppliers faced challenges in procurement and logistics, including reduced capacity, delays in receiving APIs and KSMs, shortages of packaging material, and lags in securing QA approval. As the situation evolved, several suppliers reported effects on their manufacturing operations as cases broke out in their facilities. Procurement-related delays varied from an average of 4–8 weeks at the beginning of the pandemic to about 2–3 weeks at the Q4 FY 2020 report submission. Logistics were impacted at origin and destination with passenger flights suspended across the globe, transshipment and border crossings delays, and port offices with minimal staff slowing the processing and clearing of products for delivery.

GHSC-PSM collaborated with Missions to expedite waivers, prioritize and split orders, where possible, and ensure demand was met across countries. The project contracted charter flights to alleviate reduced air capacity. (See Deliver/Return section below for more details.) Throughout the pandemic, GHSC-PSM collaborated with other donors such as the Global Fund and UNFPA to identify opportunities for consolidating shipments where possible.

COVID-19 tested the resiliency of GHSC-PSM's various supply-chain strategies. The continuous flow of product to the various countries throughout the pandemic, albeit with some delays, reinforced these strategies' robustness with a few minor tweaks. For example, the effective use of RDCs to mitigate supply and demand shocks validated the value of incorporating RDCs in the supply chain. Another key lesson was prioritizing effective and timely communication with all stakeholders. This allowed stakeholders to make the necessary adjustments for ensuring products were delivered to patients on time.

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

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

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

**The Global Supply Chain at a Glance**

- 89 countries served over the life of the project
- 2,318 products in the catalog provided by 368 suppliers
- Four international freight forwarders responsible for 7,249 shipping lanes

In Q4, the project maintained strong OTD and OTIF while operating within the pandemic context, continuing our focus on performance, and managing overall commodity and supply-chain costs. We did so by focusing on the following initiatives.

### More Health Through Market Dynamics, Strategic Sourcing, and Supplier Management

GHSC-PSM continues to work across the project and alongside external stakeholders to understand markets for the medicines and other health commodities that the project procures. The project

developed sourcing strategies and built strategic relationships with suppliers that shaped markets, enhanced project performance, and achieved greater value for USAID within each product category. Throughout FY 2020, GHSC-PSM continued to conduct market analysis, lead strategy development, use best sourcing practices, contribute to process improvements, lead negotiations, and continue proactive contract management with suppliers. The project continued to execute sourcing activities for products under each TO in line with the strategic sourcing calendar and undertook additional sourcing for products to support USAID's COVID response. See sections B1, B2, B3, B4, and Annex A for details.

***Supplier relationship management***
In Q4, GHSC-PSM began to resume quarterly business reviews with key suppliers while continuing proactive management of operations affected by COVID-19. These reviews had been halted in Q3 because of the pandemic. Regular meetings with suppliers provided updates on the continued impact of regional shutdowns and logistical challenges on production and delivery schedules. Commodity and supplier risk profiles continued to inform performance assessments and order allocation strategies.

**Decentralized procurement countries**

Burundi
Ethiopia
Haiti
Mozambique
Nigeria
Rwanda
Uganda
Zambia
Zimbabwe

***RDC Operations during FY 2020***
COVID-19 threatened the operations of all three RDCs in the second half of the fiscal year. The RDC in Belgium was first to be impacted because of the quick spread of the virus in Europe. The project implemented flexible staffing arrangements to protect workers and ensure operations at the RDC continued without incident. However, product transport difficulties to and from the warehouse delayed some shipments. Similarly, transportation difficulties impacted RDCs in Dubai and South Africa.

In Q4, GHSC-PSM launched two new reports on RDC operations focusing on stock availability and the KPIs of the different operators. The project now issues a monthly report on each of the three warehouse locations that include:

- Product availability by dollar value
- The split by task order, allocation, and shelf life remaining
- Inbound and outbound operations and how the contractors are conforming to their standard level agreements (SLAs)

This gives GHSC-PSM and USAID a more robust picture of product availability and allows stakeholders to identify trends and risks to be acted upon. The report is also used to communicate with the contractors running the RDCs, helping identify issues and solutions faster.

### Decentralized Procurement

GHSC-PSM continues to pursue its decentralized procurement strategy (DCP) that manages procurement of carefully selected goods and services through nine country offices. With DCP, the procurement specialist is closer to the recipient and authorized local and international suppliers. With these advantages over international procurement, DCP allows for efficient coordination and processing of any changes in specifications, quantities, or delivery terms, reducing cycle time and bolstering on-time delivery. Commodities procured under DCP include laboratory commodities, VL, and EID in all nine countries and essential medicines in Zambia.

In Q4, the project continued to manage a high volume of orders under DCP, with 88 percent OTD for the quarter; however, these orders faced challenges because of COVID-19, setting our COVID-impacted OTD at 74 percent. Examples of issues and solutions include:

- **VL/EID supply**. Two major suppliers of VL and EID test kits and consumables also manufacture COVID-19 test kits, limiting supply and impacting the DCP program in particular. GHSC-PSM monitors stock status, holds bi-weekly calls with manufacturers to identify bottlenecks, agrees on allocations to individual countries, and facilitates discussions with manufacturers, PEPFAR and USAID.
- **Latex glove procurement strategy.** As demand for latex gloves rose quickly because of COVID-19 testing, treatment and prevention activities, global supply became very limited. Prices almost quintupled from below $3.00 to $14.40 for a box of 100 nitrile examination gloves. Because GHSC-PSM's procurement quantities are relatively small, the project typically procures gloves from wholesalers who source them from several manufacturers. Further complicating supply, the U.S. Government imposed a ban on one of the largest glove manufacturers because of forced labor concerns.

  Faced with a limited supply and a lead time of up to 12 months, USAID, GHSC-PSM and the USAID Global Health Supply Chain-Quality Assurance (GHSC-QA) project agreed to change the quality-assurance protocols to increase access to a wider range of glove manufacturing sources while maintaining high QA standards. With this sourcing flexibility, delivery lead times dropped by half, to about six months.

  **Transition to a new sourcing and contracting system.** The DCP countries played a key role in successfully transitioning to the project's new sourcing and contracting system, Ivalua (see details in the next section). Although the new system facilitated the onboarding of more suppliers, DCP faced some challenges orienting the program's large number of suppliers, in part because of limited connectivity in some areas. However, utilization has improved over the last quarter.

### Driving Performance with Analytics Tools

As part of the project's continual improvement processes, GHSC-PSM strengthens existing tools to meet emerging needs and design new tools to support innovations in operations. The project is evaluating opportunities for machine learning, artificial intelligence, and robotic process automation to reduce manual intervention and redundancies to decrease cycle time and operational expenses. Recent updates that help the project better meet USAID's needs include the following:

***iValua tool.*** GHSC-PSM modernized and innovated the Source + Manage Suppliers and Contracts Module within the existing Automated Requisition Tracking Management Information System (ARTMIS). ARTMIS is a suite of health supply-chain technology solutions, providing the project with reliable data and services to country programs and missions across the globe commodity orders.

The project successfully implemented this cloud-based module update using agile methodologies in three phases spanning nine months. With 90 percent of users trained, GHSC-PSM outperformed the predecessor module's adoption benchmarks and boasted 59 percent internal adoption and more than 100 unique supplier logins. Adoption will continue to be tracked until the 75 percent stretch target has been achieved for two consecutive months.

- Phase 1, Sourcing: Module used by GHSC-PSM procurement teams to create and manage sourcing projects.

- Phase 2, Supplier Management: Module used by GHSC-PSM and vendors to manage existing supplier profiles and onboard new suppliers.

- Phase 3, Contract Management: Module used by GHSC-PSM teams to conduct internal reviews and digitally engage with suppliers for contract negotiations and approvals.

***Requisition order (RO) automation tool***. The project piloted an RO automation tool focused on lab and decentralized procurement (DCP) program commodities to reduce the number of days between RO clarification and initial RO approval for all products with long-term agreements and automate sourcing decisions and remove the manual touchpoint. In Q4, the tool was expanded to include condom procurement. This expansion has been very successful, as cycle time was reduced by 60 percent, while fulfillment was reduced from 30 days to 10 days. In Q1 FY 2021, the project plans to expand the tool to include ARVs.

***VL dashboard***. As part of its move toward next-generation predictive analytics, GHSC-PSM began planning for a VL visual management platform. This dashboard will sync with vendor databases gathering data from "smart" VL machines at the in-country level regarding machine function, quantities of tests performed, etc. These data will provide critical insights for forecasting, visibility into service needs, and performance. The project shared a proof of concept for the dashboard with USAID in Q4 and is awaiting approval for build-out.

***COVID-19 dashboard***. Over Q3 and Q4 FY 2020, the project launched and used a COVID-19 dashboard to measure COVID-19 impacts and monitor the delivery of supplies to partner countries to mitigate these impacts. This tool is regularly shared with USAID to track the COVID funding stream's procurement and usage, split into ventilator and non-ventilator procurement.

***Malaria Task Order Funding Allocation Tool***. The Malaria Task Order (or TO2) Funding Allocation Tool was designed in Q3 and Q4 in coordination with the Finance, Optimization, and Procurement teams. The purpose of this tool was to better understand a country's financial situation before going to market to place an order. (See Malaria task order section B2 for more details.)

### Global Standards

In Q2 FY 2019, GHSC-PSM implemented a new procurement requirement for suppliers of pharmaceuticals, medical devices, laboratory reagents, and sterile kits to identify and label their commodities following GS1 global standards. The requirement mandates the exchange of product master data through the GS1 GDSN, enabling suppliers to simultaneously automate master data collection and share it with multiple trade partners, providing access to timely, complete and accurate data. GHSC-PSM's implementation of GS1 will enable all trading partners—including manufacturers and suppliers, logistics providers, regulatory agencies, medical stores, and health facilities—to operate off the same, high-quality master data. In FY 2020, GHSC-PSM applied these requirements to suppliers of LLINs based on recommendations from the TraceNet Working Group. (See Malaria task order section B2 for more details.)

To provide suppliers with the time needed to make necessary investments for compliance, the requirement's implementation is divided into four phases to be carried out between December 2018 and June 2022. FY 2020 marked the deadlines for the second and third phases.

***Supplier compliance metrics development***

In FY 2020, GHSC-PSM conducted a series of interactive sessions with USAID contributors to develop a standard definition of success, metrics, and targets for global standards supplier engagement.

These stakeholders generated the following definitions of success and corresponding metrics to be reported in the quarterly report:

- Item coverage: The percentage of in-scope trade items that are compliant with the requirements, disaggregated by product category, task order, and phase. A high proportion of items that demonstrate compliance indicates that the products available for procurement through GHSC-PSM are prepared to enable supply-chain participants to leverage global standards to enable traceability. This metric is reported on a quarterly basis in this report.

- Order coverage: The percent of total order lines (distribution orders and POs) for in-scope items released for fulfillment in the past 12 months, including items that have demonstrated compliance with the requirements, disaggregated by product category, task order, and phase. A high proportion of orders procured by GHSC-PSM demonstrating compliance indicates that the products procured through the project are prepared for further traceability initiatives. This metric will be reported annually, starting with this report.

To ensure high-impact coverage, item coverage targets are measured by item category, segmented into two groups, and structured to ramp up over time, starting at the phase deadline. The groups are determined by the percent of spending in the last 12 months, with Group A comprising the top 95 percent of spend and Group B comprising the remaining 5 percent. The targets follow the table below, starting at 40 percent and 50 percent, respectively, and increasing until they reach a final 80 percent and 90 percent.

| Timing | Group A (95% of spend) | Group B (5% of spend) |
|---|---|---|
| At phase deadline | 50% compliance | 40% compliance |
| Six months post-deadline | 65% compliance | 55% compliance |
| 12 months post-deadline | 80% compliance | 70% compliance |
| 18 months post deadline | 90% compliance | 80% compliance |

***Supplier performance***

Two key groups need to be considered in global standards supplier requirements. The requirements for pharmaceuticals, medical devices, sterile kits, and reagents differ in the timeline from the requirements for LLINs.

For pharmaceuticals, medical devices, sterile kits, and reagents, suppliers demonstrate the following capabilities:

- Phase 1: Global Trade Item Numbers (GTINs) identifying trade items and levels of packaging; provide GLNs identifying their business entities and locations; label tertiary pack trade items with a barcode encoded with the GTIN, batch/lot, and expiration date.

- Phase 2: Master data submission of trade items through the GDSN.

- Phase 3: Secondary (or primary, in the case of cartonless packaging) pack trade items labeled with a GS1 DataMatrix encoded with the GTIN, batch/lot, and expiration date.

- Phase 4: Secondary (or primary, in the case of cartonless packaging) pack trade items labeled with a GS1 DataMatrix encoded with a serial number (pharmaceuticals only); logistic units labeled with a barcode encoded with a Serial Shipping Container Code (SSCC) (all categories).

Phases 1–3 is currently mandatory for in-scope suppliers. Phase 4 will be mandatory beginning June 30, 2022.

For LLINs, suppliers are required to provide evidence of the following capabilities:

- Phase 1: GTINs identifying trade items and levels of packaging; provide GLNs identifying their business entities and locations
- Phase 2: Master data submission for trade items through the GDSN; bag and LLIN labeled with a GS1 DataMatrix encoded with GTIN, batch/lot, and production date.
- Phase 3: Bale labeled with GS1-128 barcode encoded with SSCC, GTIN of contained items, count, batch/lot, and production date; individual LLINs labeled with GS1 DataMatrix encoded with serial number.

Phase 1 is currently mandatory for in-scope suppliers. Phase 2 will be mandatory beginning December 30, 2020, while Phase 3 will be mandatory beginning June 30, 2022.

The tables and chart below describe supplier compliance by item for all mandatory phases as of September 30, 2020:

| Commodity subcategory | In-scope items[15] with Phase 1 compliance (mandatory as of December 2018) | In-scope items with Phase 2 compliance (mandatory as of December 2019) | In-scope items with Phase 3 compliance (mandatory as of June 2020) |
|---|---|---|---|
| **HIV/AIDS Task Order** | | | |
| Female Condoms | 100% | 100% | 100% |
| HIV/AIDS Pharmaceuticals | 97% | 46% | 92% |
| Laboratory Consumables | 40% | 40% | 60% |
| Laboratory Reagents | 72% | 50% | 73% |
| Male Condoms | 100% | 46% | 100% |
| VMMC Kits | 55% | 27% | 46% |
| **Malaria Task Order** | | | |
| Malaria Pharmaceuticals | 88% | 44% | 92% |
| Malaria RDTs | 77% | 39% | 92% |
| **FP/RH Task Order** | | | |
| Contraceptive Implants | 100% | 67% | 100% |
| Injectable Contraceptives | 83% | 17% | 83% |
| Intrauterine Devices | 100% | 50% | 100% |

[15] In-scope trade items are defined as pharmaceuticals, medical devices, sterile kits, laboratory reagents, and long-lasting insecticidal nets that are currently listed as saleable in the GHSC-PSM product catalog and have been purchased before. As of September 30, 2020, a total of 583 trade items in the product catalog are considered in-scope for this requirement. Please note that the number of items considered in scope, and therefore compliance rates, will fluctuate quarter to quarter because of changes in active contracts, phase-out of unsaleable items, and introduction of new suppliers and trade items.

| | | | |
|---|---|---|---|
| Oral Contraceptives | 100% | 20% | 100% |
| **Cross-Cutting** | | | |
| Essential Medicines | 39% | 17% | 44% |
| Medical Supplies | 0% | 0% | 10% |
| **Grand Total** | **72%** | **37%** | **75%** |

| Commodity Subcategory | In-scope items with Phase 1 compliance (mandatory as of June 2019) |
|---|---|
| **Malaria Task Order** | |
| LLINs | 100% |

The tables below describe supplier compliance by order for all mandatory phases as of September 30, 2020:

| Commodity subcategory | Orders in the past 12 months for items that are Phase 1 compliant | Orders in the past 12 months for items that are Phase 2 compliant | Orders in the past 12 months for items that are Phase 3 compliant |
|---|---|---|---|
| **HIV/AIDS Task Order** | | | |
| Female Condoms | 100% | 100% | 100% |
| HIV/AIDS Pharmaceuticals | 98% | 48% | 88% |
| Laboratory Consumables | 88% | 88% | 88% |
| Laboratory Reagents | 85% | 79% | 93% |
| Male Condoms | 100% | 55% | 100% |
| VMMC Kits | 96% | 75% | 84% |
| **Malaria Task Order** | | | |
| Malaria Pharmaceuticals | 97% | 57% | 99% |
| Malaria RDTs | 100% | 45% | 100% |
| **FP/RH Task Order** | | | |
| Contraceptive Implants | 100% | 54% | 100% |
| Injectable Contraceptives | 96% | 6% | 96% |
| Intrauterine Devices | 100% | 75% | 100% |
| Oral Contraceptives | 100% | 0% | 100% |
| **Cross-Cutting** | | | |
| Essential Medicines | 54% | 22% | 64% |
| Medical Supplies | 0% | 0% | 10% |
| **Grand Total** | **90%** | **51%** | **89%** |

| Commodity subcategory | Orders in the past 12 months for items that are Phase 1 compliant |
|---|---|
| **Malaria Task Order** | |
| LLINs | 100% |

To achieve compliance with the Phase 1 requirement, suppliers must submit a GTIN, GLN, and GS1-compliant primary packaging sample for each item, except for LLIN suppliers, who must submit a GTIN and a GLN. Only full compliance (i.e., all three parameters met) is reflected for reported Phase 1 metrics. However, suppliers have made significant progress in achieving partial compliance across component criteria, with 80 percent of in-scope items having GTINs, 89 percent of in-scope items having GLNs, and 82 percent of in-scope items with evidence of compliant tertiary packaging. The project continues to work with suppliers on closing this gap between partial and full compliance.

GHSC-PSM continues to see a positive trend in compliance across all four phases, including a jump from 23 percent to 37 percent compliance for Phase 2 from Q3. Phase 2 GDSN compliance is lagging in most product categories. This is mostly because the GDSN concept was new to most suppliers when it was introduced and suppliers did not allocate sufficient time for implementation. Progress in supplier commitment has been significant in meeting the GDSN requirement; 76 percent of in-scope suppliers have signed a GDSN data pool contract. The learning curve to synchronize data through the GDSN is significant and some suppliers are still aggregating and loading their product master data onto the platform; this can be a lengthy process. The number of suppliers with a signed GDSN contract is a strong indicator that significant compliance growth should be realized soon as suppliers complete that work.

Phase 3 compliance was also strong, with 75 percent overall compliance, well exceeding our target of 50 percent. A lag in compliance from wholesalers drives most of the remaining gaps in Phase 1 and 3 compliance. Wholesalers' GS1 data collection process is often more complex because identifying and labeling data must engage with multiple manufacturers. The project is actively addressing this through a more frequent bi-weekly engagement cadence with each wholesaler and emphasizing GS1 compliance as a driver in future award decisions.

GHSC-PSM promotes high-performing suppliers through the project website based on the project's GS1 supplier scorecard to incentivize competitor compliance. GHSC-PSM will update the scorecard quarterly and publish results on the project's social media channels.

***Quality assurance***

Health commodity quality-assurance is a core element of GHSC-PSM processes. In collaboration with GHSC-QA, GHSC-PSM is committed to ensuring that only quality-assured health commodities are procured and distributed. It is also GHSC-PSM's responsibility to maintain the appropriate documentation supporting the quality of health commodities procured. In FY 2020, GHSC-PSM focused on two key activities:

1. Enhancing/integrating the current incident management platform (AssurX) to capture all quality incidents/investigations, including those during pre-shipment QA/QC testing/inspection. This will support the project in supplier evaluations and quarterly supplier business reviews to look into anything that might be a red flag for quality issues.

2. Reviewing work instructions and standard operating procedures (SOPs) related to quality to streamline QA/QC activities and ensuring alignment with internal departments on roles and responsibilities. The project finalized a recall/market withdrawal SOP that optimizes GSHC-QA and GHSC-PSM's collaboration and recall response process and manages other crises that have potential direct/indirect impacts on procuring quality products.

Throughout the year, GHSC-PSM worked with GHSC-QA to maintain communication flow, identify areas of mutual concern, and ensure QA requirements were incorporated into GHSC-PSM systems. Collaboration with GHSC-QA focused on:

- Continuing to ensure timely provision of information and smooth communication between GHSC-QA and procurement/country office staff.
- Addressing and providing QA input in product assessments, product qualification, and quality requirements in supplier contracts.
- Streamlined QA documentation requirements for procuring low-risk laboratory commodities to reduce cycle time, a key FY 2020 strategic goal. Rather than review QA documentation on each lab order, GHSC-PSM modified respective basic ordering agreements (BOAs) to make suppliers accountable for maintaining these records and access them upon request within 24 hours. GSHC-QA is conducting site/remote audits of these suppliers as well.
- Facilitating and identifying GHSC-PSM and GHSC-QA needs for product QC sampling/testing.
- Liaising with GHSC-QA and procurement teams to release finished products for distribution.
- Managing mandated procedures required by commodity recalls and regulatory/field safety notices.
- Continuing the improved collaboration and implementation of activities from the evaluation of the Activity Matrix between GHSC-QA, GHSC-PSM, and USAID, where applicable.
- Continuing to work on vendor qualification for local procurement (DCP) of USAID health commodities.

The project also continued to manage product quality incidents (about 140 reported in FY 2020), including four recalls (one involving multiple countries) across the HIV/AIDS, FP/RH, and MCH task orders. The number of incidents does not necessarily reflect product rejection, as quality assessments are conducted based on the situation and recommendations are made to USAID for concurrence to release or reject impacted products for distribution.

In Q4, the project:

- Continued to provide QA support to COVID-19-related activities in collaboration with GHSC-QA.
- While the work instruction SOP is still in the review process, optimized incident reporting and management through the incident management system collaborate with GHSC-QA. The project moved from manual incident notification to an e-notification that was incorporated into the AssurX system.
- Promoted continual awareness for adherence to procedures/processes to ensure quality product distribution to the end-user.

***QA for malaria commodities***

In Q4, the project continued to adjust QA/QC activities to mitigate delays because of COVID-19–related testing and shipping restrictions for samples and commodities. The project completed the review and prequalification of nine new pharmaceutical, mRDT, and LLIN products to expand the project's supplier pool and allow for greater flexibility and access to commodities amid COVID-19 constraints. GHSC-PSM also continued to collaborate with global donors on QA activities. (See section B2 for additional details on QA activities for malaria).

## Deliver/Return

### *Impacts of COVID-19 on freight and logistics*

In FY 2020, deliveries faced a shipping environment defined by unprecedented COVID-19 shutdowns. The project adapted to unforeseen shifts in the marketplace and worked closely with the 3PLs to find solutions to ensure continuous, reliable supply.

- **Freight costs.** In March, GHSC-PSM issued a rate refresh RFQ from the incumbent 3PLs for air transport. Supplier responses contained drastic increases in origin, destination, and airport to airport prices, citing COVID-19 impacts. The project shelved the rate refresh and instituted a spot quote approach to ensure GHSC-PSM was positioned to always obtain the lowest possible cost and minimize disruptions to country budgets.

  This spot model allowed the project to identify opportunities to leverage economies of scale. For example, in Nigeria and Dubai, GHSC-PSM bundled large orders that had similar agreed delivery dates and requested a large spot buy using charters. By doing so, the project managed to stay below or close to the FY 2019 rates, a significant accomplishment given COVID-19 circumstances.

- **Origin challenges.** Q4 brought little respite to the challenges to shipments out of Europe and India as the annual peak season pressure on logistics options was brought to bear. Import/export activities remained constrained, and air freight capacity remained impacted with few passenger flights because of government directives. Inter-country trucking continued to face delays caused by seasonal weather events. Europe's COVID-19 policies restricted ground handling crews. Container imbalance (more exports than imports or vice versa) meant it was harder to book refrigerated (reefer) equipment. In Africa, trucking across borders to inland countries continued to be hampered by quarantine and lengthy testing requirements. Uganda began to see improvements in clearance processing, but new requirements were imposed on drivers, leading to trucks backing up into Kenya.

- **Airfreight.** International travel bans in Europe caused flight capacity to drop sharply. Airlines either canceled flights or reduced them to just a few per week. Reduced service meant delays, backlogs, and increased rates. In normal times, 50 percent of all commercial cargo flies on passenger aircraft; thus, these travel bans had a major impact. As the only available flights were freighters or charters, prices quickly rose well above previous market prices, depending on destination. Q4 continued this trend with many small countries struggling with regular flights. Many airlines ran ad hoc schedules to serve more profitable routes. Some, looking to manage passengers and cargo, ran afoul of government regulations as they reestablish operations, leading to flight cancellations. Transshipment hubs (such as Addis Ababa) were flooded with cargo, and warehouses were choked as airlines managed cargo to economize flights to smaller destinations. Airlines also imposed "pivot" weight (a charge to "make up" for any empty space on the flight to keep the flight moving). Through all of this, each step of logistics, including import duty waivers, required proactive management and swift decision-making.

- **Ocean freight.** The ocean industry implemented a quick and disciplined approach to vessel scheduling to maintain viable capacity. As the need for cargo vessels fell, many sailings were canceled, increasing lead times. Reefer container shortages in India also required rigorous effort to identify solutions. Globally, maritime crews were not permitted to disembark at select ports because of potential COVID-19 exposure, highlighting an unseen challenge in the industry. Many ships were not allowed to dock because of country policies, leading to port delays. Cyber-attacks on shipping lines challenged booking timeliness, reduced container inventory visibility, and disrupted cargo tracking and tracing. Ocean freight cost increases were considered negligible; therefore, the project requested 3PLs to hold their pricing, thus keeping ocean costs as low as possible. By maintaining these rates, the level of effort for spot quotes was also kept low and could be better used in shipment management, as vessel schedules often changed.

- **Intra Africa.** Within the African continent, truck shipments were affected by COVID-19 testing and policies between countries that continue to impact inter-regional travel. Governments imposed quarantines and checkpoints, leading to delays at cargo entry points and driver and truck shortages. The project continued to face challenges in securing flights into small countries (e.g., Burundi, Madagascar, Malawi, Sierra Leone, and Togo) in Africa that are not on major flight paths as well as for temperature-controlled or frozen shipments. The situation is likely to remain challenging through Q1 FY 2021, as the peak travel season applies pressure to already constrained capacity. GHSC-PSM and Missions are finalizing high-priority commodity orders as early as possible to ensure central medical stores are replenished as the products move downstream.
- **Cold chain.** Airlines are averse to frozen and cold chain products, making it nearly impossible to find flights for reagents that need to be stored at –20C and re-iced every two days. To identify an appropriate cold chain solution, GHSC-PSM and the 3PLs weigh the risks on a case-by-case basis, evaluating the risk of flying cargo versus high storage costs and potential damage to temperature-sensitive reagents if flights are canceled.

**Securing Charter Flights to Overcome Flight Shortages and Avoid Stockouts**

When the international airfreight market collapsed because of COVID-19, GHSC-PSM quickly responded to deliver HIV/AIDS and malaria commodities to Nigeria. The project identified two charter flights to deliver ARVs and ACTs and identified a logistics provider in April. After overcoming various challenges, including continuously changing freight prices, collecting cargo from four suppliers during the government lockdown in India, adhering to Nigeria's quarantine restrictions, and securing special approvals and permits, the project completed the two charter flights in early May. The first delivered 352 pallets of HIV/AIDS and malaria commodities—combining HIV/AIDS and malaria commodities for the first time in project history. The second delivered 113 pallets of HIV/AIDS commodities. Both flights arrived on the same day, leading to quick clearance and delivery.

## C1b. Project Performance

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

### Timeliness of Delivery

GHSC-PSM measures on-time delivery 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.

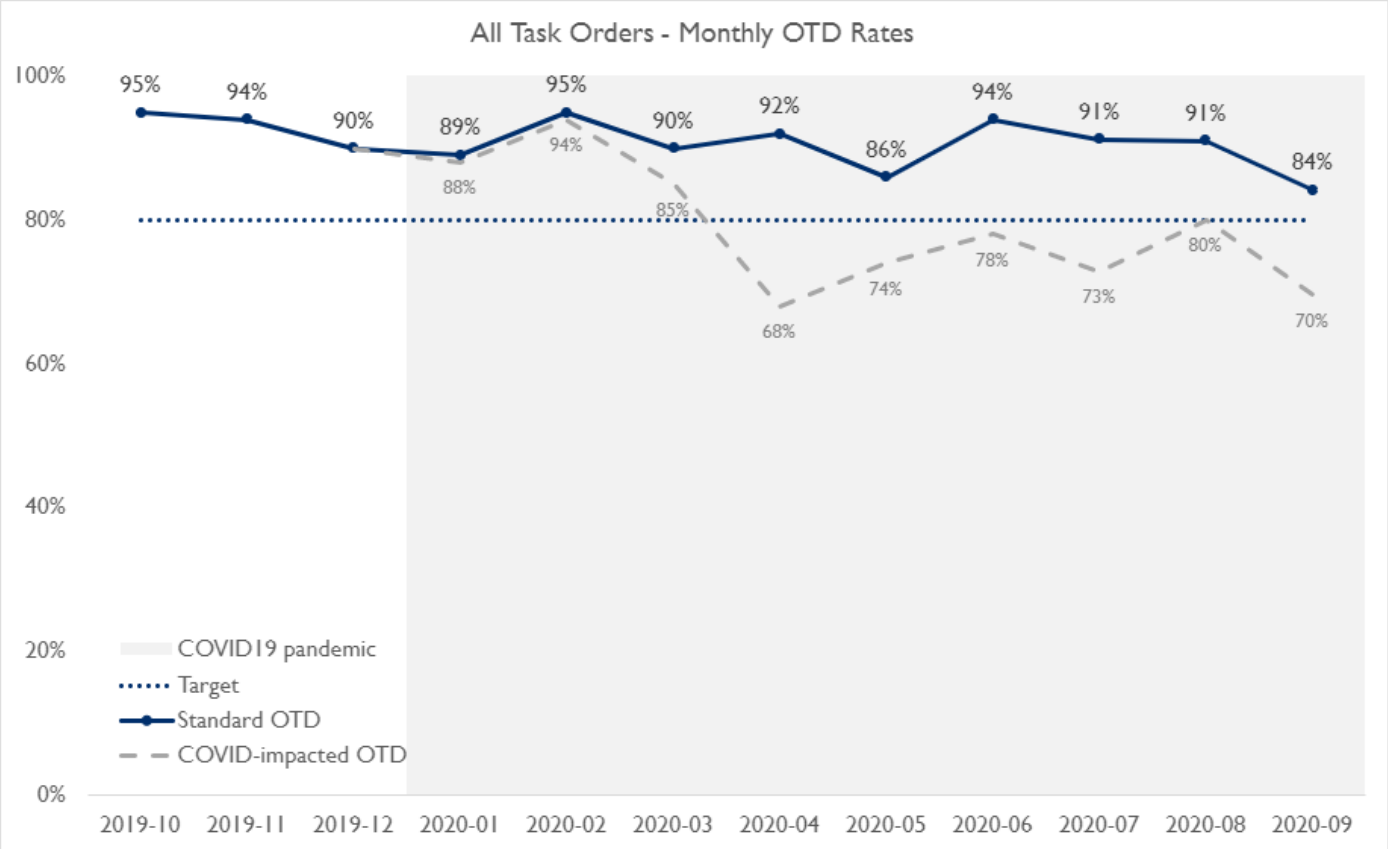
In Q4, GHSC-PSM OTD was 88 percent (74 percent COVID-impacted) and OTIF 87 percent (69 percent COVID-impacted), the fifth successive quarter OTD and OTIF have been above 85 percent. (See Exhibits 17 and 18.)

As mentioned in the Executive Summary, during the period of the COVID-19 pandemic, GHSC-PSM is presenting two versions of its usual OTD indicator:

1. The "standard" version, calculated according to the indicator definition as laid out in the project's monitoring and evaluation plan and following all associated policies

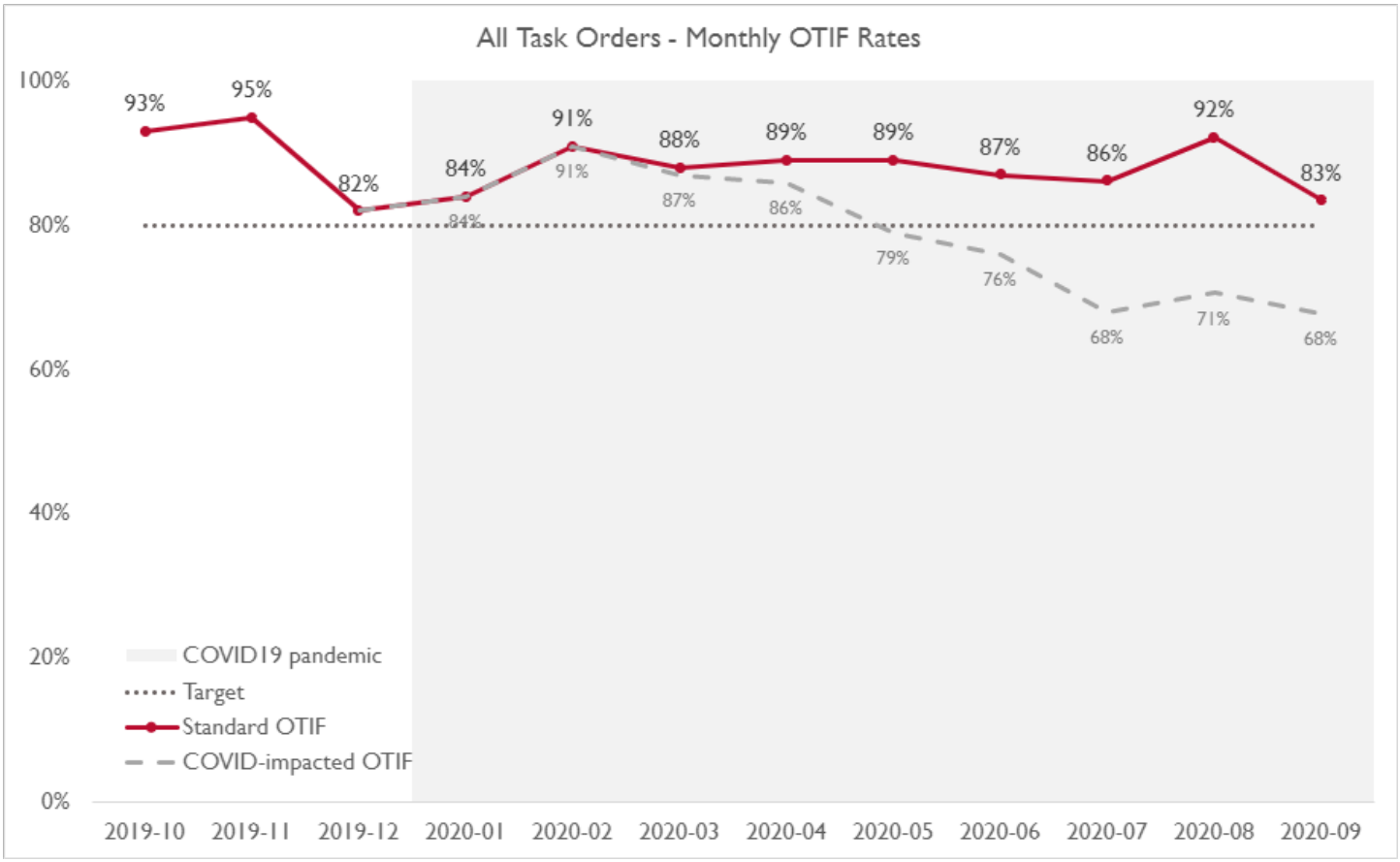
2. The "COVID-19-impacted" version, which follows the same rules and definitions as the standard indicator, but the "control" for pandemic impacts is not used to demonstrate the impact of COVID-19 on GHSC-PSM shipments

Exhibit 17. October 2019 through September 2020 monthly OTD




While pandemic-related disruptions began in December 2019, impacts on deliveries in Q2 FY 2020 were comparatively limited. Orders planned for delivery in January and February were largely in the later stages of manufacturer fulfillment and could deliver on-time. However, as the pandemic escalated into March, the number of impacted orders at the IDIQ level started to increase. About 5 percent of primarily HIV/AIDS line items originally promised for March delivery were delayed because of the pandemic. Impacts on in-progress orders planned for delivery in Q3 and Q4 are on the rise, and on-time delivery performance is expected to be significantly disrupted over the next several months.

Exhibit 18. October 2019 through September 2020 monthly OTIF



## C2. Systems-Strengthening Technical Assistance

**Assisted 39 countries** with health supply-chain systems strengthening.

Provided **technical feedback on 173 supply plans this quarter and 653 throughout this year** to strengthen national supply planning capabilities.

Published a new guidance document, "Stronger Together: Preparing supply chains for what's next with COVID-19 response."

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.

### Introduction: Reflections on FY 2020

The project strengthens health supply-chain systems by bringing tailored assistance to yield important achievements and results.

COVID-19 began to affect the program significantly by March, with travel restrictions and other public health measures greatly limiting in-person training and other capacity-building activities. Staff based in the U.S. shifted to remote support for all activities. The ability to conduct in-person activities varies from country to country, depending on public health policies and restrictions, GHSC-PSM's policies, and local COVID transmission levels.

This shift to remote support was perhaps greatest for activities like forecasting and supply planning, which require intensive stakeholder engagement, data review, negotiations, and decision-making. Remote support provided additional challenges because of differences in time zones, connectivity, and more. At the same time, these challenges provided opportunities, with U.S.-based staff in some cases training and empowering local project staff and partner staff to facilitate and lead vital supply-chain activities. Locally, restrictions on the number of people who could meet at one time required additional preparation in advance of in-person meetings, with data sharing, decision-making, and more happening through technologies like WhatsApp, Microsoft Teams, and more. Many in-person activities also included remote participants through conferencing technologies.

For traditional training programs that require less interaction and discussion, in many countries, GHSC-PSM shifted from in-person training to both "live" and recorded training programs on multiple platforms, including YouTube.

Supportive supervision programs also shifted to remote support where Internet and cellular connectivity allowed.

This move to remote and recorded capacity building may signal a long-term trend. On-line and recorded training provides the opportunity for training to happen at any time the trainee chooses and reduces the need for travel. Although remote support can save money in travel, room rental, catering, and more, it can require additional costs in preparation time; purchase or rental of video and sound equipment; design, recording, and updating of training videos; and other related needs. A key challenge for all remote support is lack of Internet connectivity, especially in remote and rural areas.

Following are highlights of where and how GHSC-PSM applied health supply-chain systems-strengthening approaches in specific countries in Q4 FY 2020. All of these examples have been impacted by COVID-19 and reflect the many adaptations that the project undertook in the last year.

**Advanced Analytics**

Advanced Analytics supports decision-making through access to real-time data and analysis. GHSC-PSM provided remote support to Cameroon, Ethiopia, Guinea, Ghana, Haiti, Nepal, Niger, Uganda, Zambia, and Zimbabwe.

For the FP/RH Task Order, GHSC-PSM developed a working proof of concept of a Last-Mile-Dispatch Optimization System (LM-DOS) and proposal for supporting dynamic routing for deliveries in USAID-supported countries. Unlike traditional delivery models that tend to follow the same delivery routes to the same sites each delivery cycle, dynamic routing determines delivery routes and locations based on actual quantities (and their respective cubic volume) to be delivered to sites. This allows distribution teams greater flexibility to plan and adjust routing based on the dispatches that are ready for delivery and available transport resources, thus increasing performance and minimizing distribution costs at same time. The LM-DOS was customized using actual data and reflecting other local factors. GHSC-PSM also conducted market research to understand the current landscape of options available from commercial, open-source, and build-your-own options. The project will submit final deliverables to USAID in Q1 FY 2021 and will identify two countries to pilot the program. A dynamic routing "roadmap" will explain the various phases of implementation. Some countries are already expressing interest in piloting the application.

In **Ethiopia**, GHSC-PSM supported inventory analysis to provide insights into the flow of commodities from "port to patient." This analysis focused on studying the inventory turnover by cubic volume to understand how the physical flow of commodities affects transportation resources and storage capacity at central and hub warehouses. The project also conducted an analysis of different distribution strategies to identify opportunities to speed the flow of commodities from warehouses to facilities. One key recommendation to the Ethiopia Pharmaceutical Supply Agency was to segment products by different inventory rules. For example, targeting commodities with larger cubic volume for higher inventory turn rates can reduce their storage burden at warehouse and health facilities. Additional recommendations included segmenting facilities by monthly or bimonthly deliveries based on various criteria and suggested key performance indicators to help monitor and manage the speed that commodities move through the supply chain.

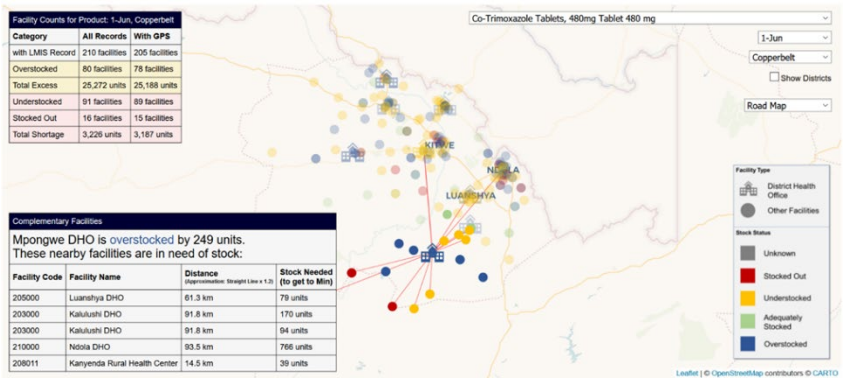
In **Haiti,** GHSC-PSM is developing an expiry management tool to support identifying and preventing pharmaceutical expiries in the central warehouse. The tool will automate the integration of data from two systems: the warehouse management system, known as MACS, and the Consumption Data Management and Calculation System, known as SYGDOCC, to detect commodities that are at risk of expiring in the warehouse. Once data from the two systems are integrated, the tool will help identify commodities at risk

of expiry. Project staff can then make recommendations to USAID in Haiti for prevention action, such as transfers of at-risk commodities to other facilities and organizations that can quickly use them before expiry.

In **Nepal**, GHSC-PSM is developing a new analysis tool that combines two key data points—inventory turnover patterns and consumption data—to identify supply risks and recommend appropriate intervention. If consumption is highly variable, average monthly consumption (AMC) is less reliable in predicting future demand; facilities with highly variable consumption should be targeted to determine the root cause of the variability. Sites identified with unexpected inventory turnover may need to order less or more in the future or, even place an emergency order to prevent stock-out. Using data that are remotely available, the tool has proved effective at identifying risks that even staff at storage facilities may not identify.

In **Zambia**, GHSC-PSM designed and deployed four customized advanced analytics tools through a remote engagement model that are allowing work to continue uninterrupted and without the need for international travel. In addition to replacing time-consuming manual processes, the tools allow speedy action to prevent supply risks. These remote solutions are ideal for supply-chain management both during the COVID-19 pandemic and for years to come. These tools were designed to be automated and easily deployable in other country contexts. The tools include:

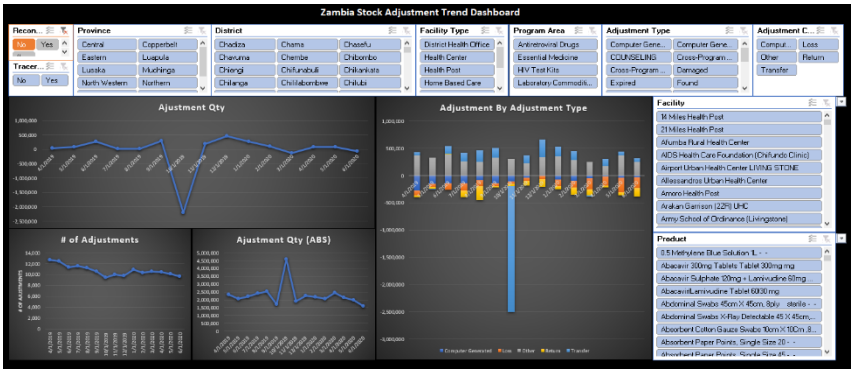
- **Stock redistribution tool.** In April 2019, GHSC-PSM implemented the Zambia stock redistribution tool, a map-based interface for making stock redistribution decisions remotely from any location. The tool pulls data from the existing LMIS and automatically analyzes it to identify stock transfer opportunities to support timely decision-making at the provincial health offices (PHOs). The tool uses color-coding and other visual cues to recommend possible transfers to mitigate any facility's stock-out risk. From May to August 2020, remote use of the tool helped resolve multiple supply risks, and prompted the redistribution of ARVs, essential medicines, VL reagents, and other lab commodities in the Western Province, redistribution of Depo Provera in Chilanga District, and redistribution of malaria medicines in Luangwa District.



Zambia's stock redistribution tool.

- **Consumption anomaly detection tool.** Identifying consumption anomalies is important to determine supply-chain risks, but these anomalies were difficult to pinpoint amidst the large volume of information in Zambia. GHSC-PSM designed and implemented an automated consumption anomaly detection tool in early 2019 by adapting a private-sector Statistical Process Control (SPC)

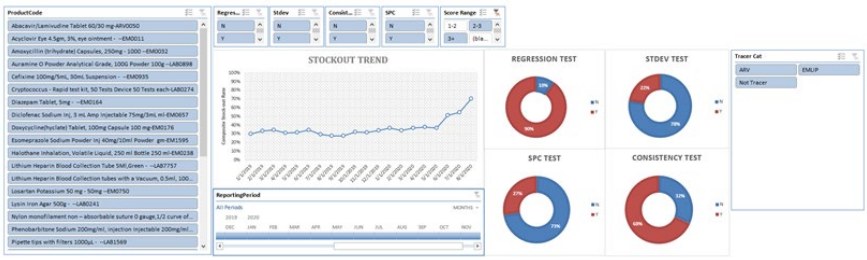
for the supply chain. Project staff use the consumption anomalies tool monthly to check more than 200,000 records at more than 2,900 facilities to detect and call to the attention of the MOH's Pharmacy Unit and chief provincial pharmacists any abnormalities in consumption. This report supports the National Drug Theft Task Force in intelligence gathering, while provincial task forces use the tool to conduct audits and to determine supportive supervision needs.




The dashboard for the consumption anomaly detection tool.

- **Hub capacity tool.** GHSC-PSM developed an Excel-based analytics tool in June 2020 to help the Zambian Medical Stores Limited (MSL) make strategic decisions about which commodities to store in a provincial hub. To reduce the number of commodities managed at the central level and move key commodities closer to facilities, MSL used the hub tool in selecting 40 key public health commodities that could potentially be stored in provincial hubs instead of the central warehouse, reducing the delivery time and improving reliability of supply. With remote support from GHSC-PSM in June, MSL used the hub capacity tool to determine that the Luanshya Hub (Copperbelt Province) could store only 15 of the potential 40 commodities because of storage constraints—with a two-month stock holding—allowing MSL to refine their distribution strategy for this province. MSL will use the tool to determine which commodities and how much can be stored at all the other hubs.

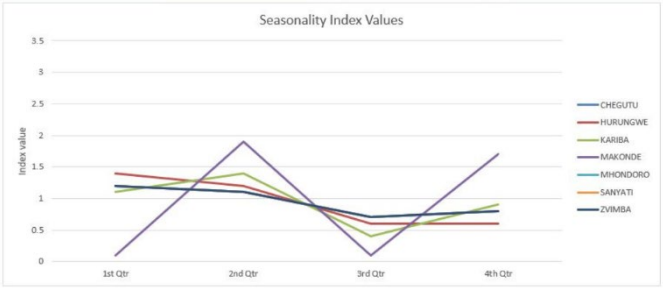
- **Stock-out trend detection tool.** GHSC-PSM expanded routine monitoring of stock-out trends from tracer commodities to all 1,000 commodities to prevent supply risks for non-tracer products. To enable analysis of this much larger data set, the project developed and deployed a stock-out trend detection tool. It simultaneously runs multiple tests on all products to determine whether there is an increasing trend in stock-outs. Then, it alerts GHSC-PSM and the project's counterparts in MSL when stock-outs of certain commodities are on the rise.




Zambia's stock-out trend detection tool.

In **Zimbabwe**, GHSC-PSM developed an innovative analytics approach using linear regression to determine malaria commodity consumption seasonality patterns.

Because malaria risk is influenced by seasonal, and at times unpredictable, rainy seasons, forecasting malaria commodity needs can be challenging, especially for "elimination districts." Sites in these districts tend to have few seasonal malaria medicines because they are rarely used; therefore, medicines at sites can risk both stock-out and expiry.




In Zimbabwe, the Seasonality Index measures the difference in consumption because of seasonality. This information is then used to adjust consumption to determine the order amount for the upcoming period.

To overcome this challenge, GHSC-PSM developed a new approach to determine the quantities of commodities to be distributed to elimination sites. For sites with annual consumption below a benchmark of five seasonal malaria treatments, the project recommended an annual delivery be pushed to these sites before the rainy season. Although the total quantity for these sites would represent less than two percent of the malaria commodities distributed nationwide, the model predicted that elimination sites receiving this relatively small quantity would nevertheless have a less than five percent chance of stocking out.

### Forecasting and Supply Planning

GHSC-PSM continued providing FASP support in more than 30 countries to help institutionalize processes so that countries move from relying on external technical support to developing their own fully integrated FASP capabilities as part of the journey to self-reliance.

Because of the COVID-19 pandemic, GHSC-PSM shifted to remote support to ensure countries met their planned FASP objectives, including technical assistance to multiple countries on quantification of HIV/AIDS, malaria, FP/RH, MCH, and COVID-19 commodities; and training workshops on forecast and supply planning tools.

**Multi-Month Simulation (MuMS) tool:** GHSC-PSM also expanded its technology offerings during the year through developing and disseminating global dashboards for increased supply plan data visibility across the project. MuMS aimed to help countries accelerate multi-month dispensing (MMD), following PEPFAR guidance to help lower the risk to patients of contracting COVID-19 by reducing the number of trips to pharmacies and the number of patients in health facilities. All PEPFAR-supported countries received MuMS to enable data-driven conversations between supply chain and clinical partners about the feasibility of accelerating MMD. The project presented a webinar about MuMS to the 2020 Health and Humanitarian Logistics Conference, held virtually in late September.

QUANTIFICATION ANALYTICS TOOL

**Quantification Analytics Tool (QAT)**: In FY 2020, GHSC-PSM kicked off the development of the modernized forecasting and supply planning (FASP) tool, QAT. The first module, supply planning, is expected to launch in seven countries in Q1 FY 2021 and roll out to additional countries throughout the year. With QAT, country programs will have a platform that integrates forecasting and supply planning; provides online and offline functionality; has increased data analytics and reporting capabilities; and has data exchange capabilities with upstream procurement systems, and with downstream country-specific LMIS. The new system provides greater efficiency and cost-savings by

reducing time needed for data entry and manipulation; shortening the data reporting lag between procurement, supply planning, and logistics management systems; and increasing end-to-end data visibility.

In **Eswatini**, GHSC-PSM supported the annual integrated national quantification for HIV, TB, VMMC, non-communicable disease, malaria, and FP/RH commodities. The quantification exercise determined the quantities and funding needed for commodities for 2021 to 2024 and will inform the government's budgeting exercise, which usually takes place at the end of October. Because of COVID-19 restrictions on in-person gatherings, the project used remote conferencing technology. To prepare for the quantification process, GHSC-PSM also hosted a TB quantification training using QuanTB software for five members of the National Quantification Committee (NQC).

In **Ghana**, GHSC-PSM supported the National AIDS Control Program (NACP) in conducting a quantification of HIV/AIDS commodities. Analysis highlighted issues such as COVID-19 causing delay in TLD transition and its impact on forecasted values. Other key challenges included the unpredictable delivery schedule for orders, delayed import waivers, and delayed central- and regional-level distribution. Participants recommended that NACP work with the MOH to advocate for changes to the current import duty waiver process, to consider securing long-term waivers for Global Fund commodities, and to identify opportunities to expedite budget approval processes at the MOH. NACP also promised to advocate to ensure timely servicing and availability of parts for laboratory equipment and to closely monitor trends in testing.

In **Pakistan**, GHSC-PSM supported the first-ever long-term (five-year) forecast for the districts of Charsadda, Lakki Marwat, Mohmand, and Swat. The forecasting process aimed to build the capacity of the provincial and district governments of Khyber Pakhtunkhwa to conduct their own regular forecast updates and introduce a supply planning process for the district's priority medicines. The forecast exercise will inform the government of Khyber Pakhtunkhwa's advocacy for a significant increase in its financing for public health commodities to improve the availability of essential and priority medicines at primary and secondary health facilities.

In **Sierra Leone**, GHSC-PSM worked with the Malaria Quantification Technical Working Group to conduct a multi-year (2021–2023) forecast of malaria commodities. GHSC-PSM supported collection of stock data to inform the exercise, analyzed the stock data to ensure accuracy and completeness, and prepared an annual quantification report and procurement plan. The Sierra Leone National Malaria Control Program used the results of the quantification exercise to prepare and submit a budget proposal as part of a three-year grant proposal to the Global Fund. The USAID Mission will use quantification results to confirm the adequacy of malaria commodities allocated in the FY2020 MOP.

### Global Standards and Traceability

GHSC-PSM is supporting 16 countries to implement and use GS1 for product identification, location identification, and product master data. GHSC-PSM's implementation of GS1 will enable all trading partners—including manufacturers and suppliers, logistics providers, regulatory agencies, medical stores, and health facilities—to operate off the same, high-quality master data. Adoption of global standards helps countries reduce costs, improve efficiency, increase patient safety and improve the availability of health commodities in their public-health supply chains.

GHSC-PSM finalized a GHSC-PSM Traceability Planning Framework Toolkit that includes tools focused on:

- Education and awareness
- Vision and strategy

- Policy and architecture
- Standards implementation (item and location identification, master data management)

The toolkit includes templates and guidelines developed in FY 2020 to support countries in developing and operationalizing strategies for implementing GS1 health care standards for increased supply-chain efficiency and patient safety. It includes, but is not limited to:

- "The Product Master Data Management (PMDM) Reference Guide and Toolkit"[16] that outlines strategic considerations and guidelines for an accessible and consistent approach to communicate and manage accurate product information throughout the product lifecycle.
- "GS1 Supply Chain Information System Requirements"[17] that provide countries investing in supply-chain information systems with the functional and technical requirements for meeting GS1 standards.
- "Human Resources for Traceability Implementation: Tools for Establishing Your Implementation Team,"[18] a resource for countries as they develop global standards implementation teams.

Throughout FY 2020, GHSC-PSM supported several countries in advancing the use of GS1 global standards. These efforts included, but were not limited to:

- **Botswana.** Conducting a workshop in partnership with the Botswana Medicines Regulatory Authority to raise awareness on GS1 global standards in the health sector and their applicability in the local context.
- **Ghana.** Supporting Global Fund-sponsored ONE Network implementation by providing data models, product data mapping, and SOP development technical assistance to ensure alignment with global data standards.
- **Nigeria.** Developing a vision, strategy, and high-level roadmap for a multi-year approach for implementation that has since been endorsed by the Ministry of Health and National Agency for Food and Drug Administration and Control.
- **Uganda.** Signing a purchase order with a service provider for an AIDC solution that Joint Medical Stores will use to read standards-based barcodes on medicines and other health products. The device will automate receiving by scanning barcodes embedded with a unique identifier by the supplier (or print labels upon receipt for products lacking barcodes).
- **Zambia.** In Q4, worked closely with stakeholders to finalize Product Information Management (PIM) System Governance and Systems Requirements as part of ongoing support to establish a robust master data program.

### Leadership and Governance

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

The Africa Resource Center has embarked on developing an "outsourcing" toolkit and has outlined the process for providing training for Ministries of Health to outsource selected elements of their supply chain.

[16] https://www.ghsupplychain.org/PMDMReferenceGuide
[17] https://www.ghsupplychain.org/index.php/GS1SCISReqs
[18] http://ghsupplychain.org/GlobalStandardsRoleDescriptions

GHSC-PSM supported the initiative by conducting a review of the overview materials and will develop selected modules in Q1 FY 2021. The training will focus on how to assess, evaluate, contract, and implement outsourcing.

### Management Information Systems

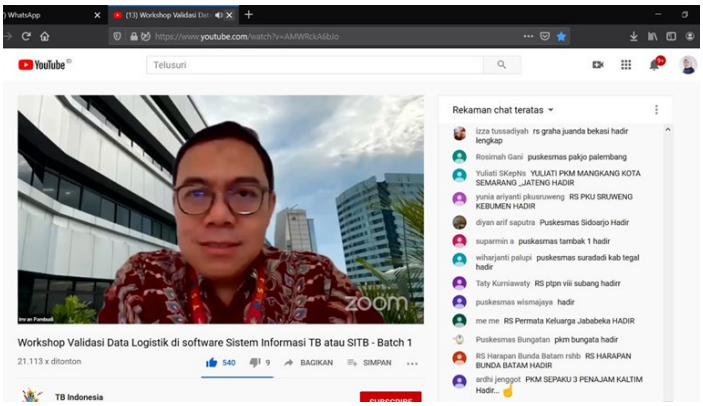
GHSC-PSM supports country programs in enhancing the functionalities and capabilities of their eLMISs by reviewing system requirements, supporting procurement and contract negotiation, and monitoring operation and performance. By keeping abreast of current trends and new technologies, the project provides recommendations for leading-edge ways to leverage technology for end-to-end data visibility. In addition to eLMIS activities, the project supports requirements gathering and business process identification for other information technology (IT) solutions to be deployed, including warehouse management systems and eLearning tools. GHSC-PSM also produces SOPs and templates to standardize the project's status reporting and service-level agreements for consistency worldwide. The project supported 11 countries in Q4.

In **Burma**, GHSC-PSM helped transition the Ministry of Health and Sports from a paper-based LMIS to an eLMIS to improve supply management in all 45 townships in the Yangon Region. In coordination with the Yangon Regional Public Health Department, National AIDS Program, National Malaria Control Program, and National Tuberculosis Program, the project trained 318 staff on the mSupply eLMIS platform. The participants learned to perform basic supply management tasks such as receiving, issuing, and checking stock status. Participants also had the opportunity to work with real data, perform software upgrades, troubleshoot with helpdesk ticketing, and engage in dashboard visualization for improved stock status monitoring and review. The eLMIS skills learned by participants allowed staff at the lowest levels of the health supply chain to report electronically, enabling decision-makers to review stock status in real-time.

In **Haiti**, GHSC-PSM launched the desktop version of SYGDOCC at three health facilities, a software application (with web-based platform[19] and mobile app) that the project developed to centralize and visualize all data related to the consumption at PEPFAR-supported health facilities and to pharmaceutical stock management. All PEPFAR-supported health facilities within the 10 departments of the country will eventually have this electronic system that will provide site managers a better method of data analysis and real-time data access. This system will also allow project staff to automatically collect site data, centralize consumption and site service data, map the products consumed by sites, and better manage supply calculations for sites. Moreover, it will help to manage patients by regimen and support community management dispensing. The project is conducting a series of training and information sessions before broad deployment. The existing national data reporting system in Haiti does not produce adequate monitoring of all details for logistics data at PEPFAR-supported sites.

[19] https://sigdocc.ghscpsm-tools.org

In **Indonesia**, a recording of a virtual eLMIS training program received more than 20,000 views and 100 questions on YouTube. Because of the COVID-19 pandemic, GHSC-PSM, the National Tuberculosis Program, and TB-STAR (a USAID-funded program) transitioned from an in-person to a virtual workshop on the TB Information System (SITB) logistics data validation for 34 provinces. The workshop aimed to improve the quality and accuracy of logistics management data for the national TB program by training participants on logistics modules in SITB, including ordering, distribution, and dispensing. The workshop also encouraged health facilities to input logistics data into SITB and reinforced the role of district and provincial health offices to validate and use SITB data to manage the program.




Indonesia's remote workshop included 3,700 attendees, and a recording of the event has had more than 20,000 views on YouTube.

The event provided two options for attendance, with 1,000 attending by Zoom and 2,700 by YouTube20. Both Zoom and YouTube participants could later review the recording of the YouTube workshop to help them implement what they learned.

In **Liberia**, GHSC-PSM and the Directorate of Pharmacy of the MOH developed a competency-based training curriculum that includes guides for both trainers and participants and is based on the current National Health Facility LMIS Guide. Because of COVID-19 travel restrictions, the project remotely trained two country office staff to co-facilitate an in-person training of trainers (TOT) with home office staff (participating virtually) for 24 Ministry of Health staff from health facilities, counties, and the Supply Chain Management Unit. A total of 13 participants received a certificate of competency. Eight of these participants were certified to train on the competency-based curriculum, and 12 of the trainers will participate in the planned roll-out of training across the country.

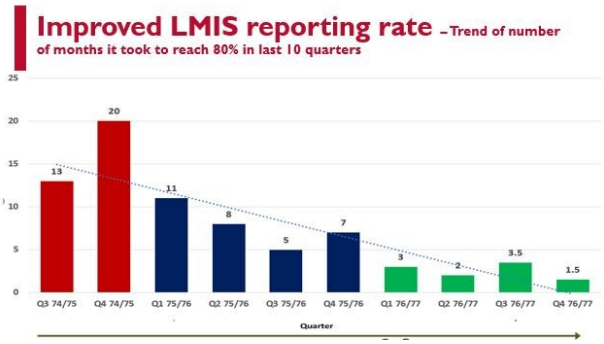
Liberia's MOH staff takes a competency test on LMIS while observing social distancing. *Photo credit: GHSC-PSM*

In **Malawi**, the number of facilities directly reporting through OpenLMIS increased from 153 to 160 sites, which in turn report data for 685 sites. All the 685 facilities capture LMIS reports on a paper form. Then, the 160 facilities enter their own data directly into the system while those who are not direct data-entry sites send their paper-based report to the 160 sites to be entered in their name. GHSC-PSM supported the MOH with the continued expansion, management, and use of OpenLMIS, a web-based, open-source electronic logistics management information system designed to manage health commodity supply chains. The project expanded OpenLMIS use to seven additional facilities through providing computers, system

[20] https://www.youtube.com/watch?v=AMWRckA6bJo and https://www.youtube.com/watch?v=4-4sZl1TdM8

configuration, and user training. This contributed to sustaining high monthly LMIS reporting rates, with an average 97 percent (June–August 2020). Reporting rates are consistently between 95 and 99 percent.

In **Nepal**, thanks to GHSC-PSM's efforts to improve the LMIS reporting rate for decision-making, the average quarterly reporting rate was 93 percent during the quarter—a statistic that would have been unimaginable a year ago. The improvement in data visibility will help to conduct essential supply-chain functions, including quarterly pipeline review, forecasting, and quantification. As part of its efforts to strengthen the national LMIS, GHSC-PSM implemented eLMIS transaction modules and trained 113 local-level governments of the Sudurpashchim Province and Gandaki Province. Currently, eLMIS is implemented in all central, provincial, and district stores and in major hospitals. As a result of GHSC-PSM's advocacy, the Global Fund and UNFPA have provided financial support for eLMIS scale-up and implementation.




In Nepal, key performance indicators for eLMIS reporting have notably improved in the last year.

In **South Sudan**, GHSC-PSM developed a call center application—based on private-sector technologies—that works with VoIP and the local cellular network to call health facilities and capture national stock supply data to improve the availability and quality of data for family-planning commodities and ensure that supplies are consistently available at service delivery points (SDPs). The project conducted monthly calls and provided stock trends, proxy consumption, and an ability to proactively mitigate commodity stock-outs and product expiry issues. In early 2020, partners used call center data to directly inform decision-making in a distribution of essential family-planning products. During the distribution preparation process, GHSC-PSM identified health facilities that had reported adequate stock levels in key family-planning commodities, which led to them being removed from the distribution plan, thereby avoiding an overstock at the last mile. The call center closed the gap in the data collection process that normally would have been provided by a traditional LMIS, but in South Sudan could have gone unreported. The call center has evolved to become a readily available solution to address everyday supply-chain issues and has been adopted, in varying forms, in five other countries: Cameroon, Haiti, Mali, Mozambique and Niger.

### Warehousing and Distribution

GHSC-PSM continues to improve warehousing and distribution systems in more than 25 country offices. As part of this work, the project aims to move countries from a "warehouse" model to a "distribution center" model that promotes more frequent stock turnover and requires changes in infrastructure and processes. Interventions also aim to improve data-driven decision-making across the supply chain, optimize distribution networks, and increase efficiencies in warehousing and distribution operations.

- ***Activity-based costing (ABC)***. In Uganda, GHSC-PSM continued to support JMS to view revenue streams and costs for privately and publicly funded commodities. The JMS operations team became proficient at analyzing their labor report, which helps identify gaps in staffing, determine the correct number of employees for each task and labor category, and identify areas for evaluation and improvement. The project assisted JMS and USAID with a new performance-based contracting agreement with the donors they support. Also, the project is in the process of implementing GS1 data capture and radio frequency receiving (scanning) and put-away application with the Joint Medical Stores (JMS) in Uganda. In Malawi, GHSC-PSM released two RFQs that incorporate basic principles of ABC into agreements with 3PL service providers. ABC will also be included in

agreements between GHSC-PSM and 3PL providers, ensuring a strong base of these principles to build their capacity and, in the long run, drive efficiency and save cost. Similarly, GHSC-PSM provided support on a PDCA (plan-do-check-act) daily planner tool that Rwanda Medical Stores uses to continuously improve warehouse efficiency, labor, and overall finances.

- ***Temperature and humidity monitoring in the supply chain.*** GHSC-PSM continues to collect data from temperature and humidity data loggers installed in Burkina Faso, Cameroon, Ghana, Guinea, Haiti, Mozambique, and Zimbabwe. In **Guinea**, GHSC-PSM continued expansion of the temperature monitoring program, including training of additional supply-chain managers in the analysis of temperature and humidity data using a dashboard on a cloud platform, and the installation of three mobile access points and 19 sensors in the regional Central Pharmacy of Guinea (PCG) depots of Faranah (seven), Kankan (six), and Nzérékoré (six) to replace the existing manual temperature measurement system with a wireless temperature and humidity sensors and a web-based warning system.
- ***Transportation information tool (TransIT).*** TransIT is an electronic tool that transmits real-time proof of delivery to health facilities. In Lesotho, GHSC-PSM implemented a completely remote training on TransIT for the parastatal National Drug Service Organisation (NDSO) for drivers, dispatch staff, and other warehouse personnel. The project plans to finalize the interface of NDSO's warehouse management system with TransIT in Q1 FY 2021 and then start deliveries with the software. In Zambia, GHSC-PSM continued to prepare for a pilot of TransIT in the capital Lusaka and later Copperbelt Province in Q1 FY 2021.

- ***3PL subcontracting.*** GHSC-PSM continued to develop SOPs and help modify RFQs and 3PL subcontracts for various country programs, aiming to improve distribution and storage principles. In **Guinea** and **Liberia**, the project is working to advise stakeholders on plans for future distribution centers and whether they should be constructed or rented from private-sector operators.

### 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, putting countries on a path to self-reliance. GHSC-PSM provided remote support this quarter to Botswana, Burkina Faso, Ethiopia, Liberia, and Zimbabwe.

Because COVID-19 prevented travel to partner countries, GHSC-PSM evaluated various learning management systems to support requests from country programs seeking on-line learning opportunities, aiming to match the most appropriate platforms with various learning needs.

**Professionalization framework:** In 2020, GHSC-PSM continued to develop and redefine the Supply Chain Management Professionalization Framework, which is intended for health supply chains to meet public and private educational and development needs. The framework:

- Standardizes the mapping of education pathways
- Identifies specific roles by job description within the health supply chain in each country
- Provides guidance and direction toward a successful program implementation

Once the framework is finalized in FY 2021, the project will publish and distribute it widely.

In **Botswana**, GHSC-PSM supported development of an ESC playbook that is designed to support decision-makers during a natural disaster, epidemic, or pandemic like COVID-19. The playbook supports coordination of people and processes, the management of commodity distribution, and delivery of commodities through existing supply-chain networks. The playbook includes a management checklist, ESC preparedness overview, response job aides, and a quick response guide. Local stakeholders, USAID, and GHSC-PSM staff convened weekly to review governance and organizational structures, funding and finance, warehousing, forecasting and supply planning, procurement and sourcing, data visibility, and triggers that identify increases in disease or other incidents that can affect the supply chain.

In **Burkina Faso**, GHSC-PSM rolled out the ESC playbook to four pilot regions. For each region, the project trained four regional ESC focal points from the One Health Ministries (Ministry of Health, Animal Resources, Environment and Agriculture). As part of their capacity building, the focal points collected regional logistics data that they then integrated into the playbook and participated in a simulation exercise on food poisoning by pesticides.

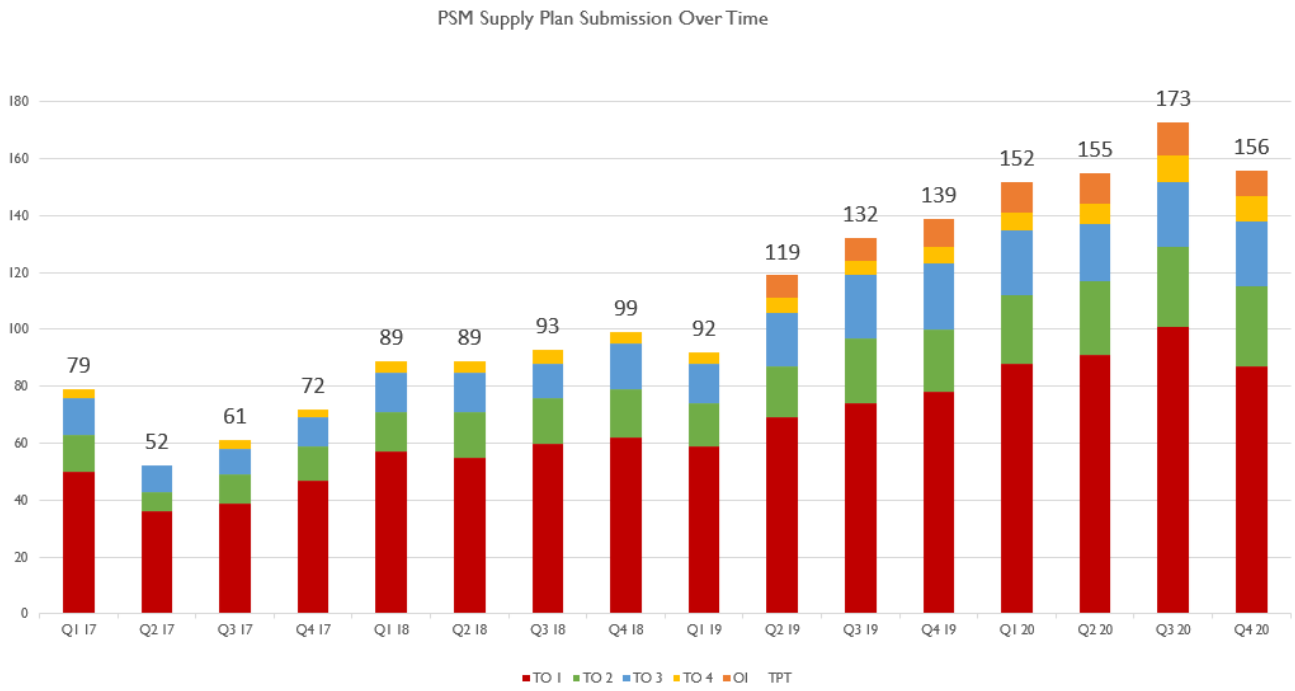
## C2a. Project Performance

GHSC-PSM collects and analyzes data on a variety of indicators of national supply-chain system health to understand the environments in which we operate and to help us calibrate our work. These indicators also help establish priorities for our health supply-chain systems-strengthening support and, over time, will allow us to assess the outcomes of our technical assistance. Values for these indicators are provided in Annex A. To facilitate understanding of progress in each country, health supply-chain systems-strengthening indicators are presented country by country and include important contextual information for each country. Dashboards with these country-specific indicators are made available for GHSC-PSM country offices to explore with in-country stakeholders.

### Supply Plans

GHSC-PSM continued to drive adoption of the quarterly supply planning paradigm as more countries were onboarded to the use of PipeLine, in particular malaria-specific countries. In FY 2020, GHSC-PSM received 159 supply plans on average every quarter (152–173), an increase of 32 percent over the average number of supply plans received (92–139) on a quarterly basis in FY 2019. Exhibit 19 shows the number of supply plans received by quarter and task order since Q1 2017.

Exhibit 19. 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, allowing the country offices to take pre-emptive actions to minimize the impact.

## Capacity Building

The number of people trained is one indication of where the project is focusing its capacity-building resources and where it might expect related supply-chain outcomes to improve. An unusually high number of individuals were trained in Q4, with a total of 5,296 trainees (2,140 women and 3,156 men).

Most trainings were cross-cutting, meaning they addressed topics relevant to multiple health areas. By funding source, 62 percent were trained with HIV/AIDS funding; 16 percent with malaria funding; 14 percent with FP/RH funding; and 8 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

GHSC-PSM participates in the Global Logistics Continuity Working Group, a network that identifies options for moving global health products and humanitarian goods when commercial freight is not available.

The project presented at three large international conferences and several small and regional conferences, sharing lessons learned from the COVID-19 response in several country contexts, including Angola, Nigeria, and Pakistan.

GHSC-PSM joined 27 major suppliers and donors on the mRDT Task Force to bring more manufacturers into the supply chain through an Malaria RDT Supplier Summit. The task force worked together to coordinate orders and suppliers, and prioritize countries most in need.

GHSC-PSM's global collaboration in FY 2020 focused on coordinating with global donors and stakeholders to develop innovative means for responding to supply-chain interruptions. The scale, scope, and complexity of managing a global supply chain requires us to collaborate with many global and local partners to ensure the availability of medicines and health commodities. By integrating our work across health sectors and sharing information, resources, activities, and capabilities, GHSC-PSM can achieve together what the project could never accomplish alone.

### Strategic Engagement

As described throughout this report, GHSC-PSM engages actively with other global players to promote the availability of medicines and commodities. The project does this by providing supply-chain expertise to important global fora, working with global 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.

***MNCH global partnerships***

The MCH task order collaborated with partners in the pharmaceutical wholesaler space to assess the private sector's role and capacity to supply quality-assured MNCH commodities. GHSC-PSM also worked with FP/RH and MNCH partners to update global quantification guidance for countries procuring and managing MNCH commodities. One milestone for the project's MNCH work in FY 2020 was to co-author a peer-reviewed journal article on parameters for maintaining the quality of oxytocin, a lifesaving medicine used to prevent and treat postpartum hemorrhage, throughout the supply chain. More information can be found in section B4: Maternal, Newborn, and Child Health.

***Collaboration with the Africa Resource Center***

The Africa Resource Center has embarked on developing an outsourcing toolkit and has outlined the process for providing training for Ministries of Health to outsource selected elements of their supply chain. GHSC-PSM supported the initiative by reviewing the overview materials and, in the next quarter, will develop selected modules. The training will focus on how to assess, evaluate, contract, and implement outsourcing.

***Promoting the Advancement of Serialization Data***

In December 2019, GHSC-PSM supported USAID in hosting a Global Traceability Visioning Workshop in Washington, DC, to explore issues and brainstorm next steps on what the community should consider in advance of the onslaught of serialization data. Attendees included representatives from a cross-cutting set of stakeholders ranging from industry to country representatives, including AmerisourceBergen; Digital Square; GHSC-PSM HQ; and Nigeria, Global Fund; GS1; PATH; RxGPS Alliance; UNFPA; USAID Washington, Ethiopia, and Nigeria; and World Bank. Several new ideas emerged for consideration to support donors, their procurement agents, and countries to manage and exchange these data. GHSC-PSM synthesized the outputs and next steps from this meeting and disseminated them among participants in March 2020.

## Supply-Chain Collaboration in Global Fora

GHSC-PSM represents the supply-chain point of view in key global meetings to ensure donors and governments consider the supply chain in program planning. Participating in these meetings helps GHSC-PSM stay current with emerging trends and requirements to respond to global health commodity needs. Specifically, in Q4, as described in Sections B1 through C1, GHSC-PSM conducted the following activities:

**FY 2020 Conference Participation Snapshot**

In FY 2020, GHSC-PSM had 28 abstracts approved by nine conferences. The project made 13 oral presentations and presented 11 posters at these conferences.

- Participated in the Malaria Pharma Task Force, mRDT Task Force, and IRS/ITN Task Force and with the Global Fund and UNICEF to coordinate actions and resolve problems with suppliers. (See details in section B2.)
- Engaged with RHSC and GFPVAN to build global partners' awareness of and support for the U.S. Government's FP/RH priorities and programs. (For more information, see section B3.)
- Presented virtually on *Decentralized Drug Distribution (DDD) Supply Chain Considerations in Eswatini* during a learning collaborative on DDD hosted by USAID and the EpiC project. GHSC-PSM highlighted experiences in Eswatini around MMD and DDD, the benefits patients and stakeholders, and the importance of consistent collaboration and communication.
- Participated in key MNCH technical working groups, including the Maternal Health Supplies Caucus (MHSC) and the Postpartum Hemorrhage Community of Practice (PPH COP). In Q4, the project delivered a presentation to the PPH COP on GHSC-PSM's oxytocin-related support in Ghana. Also, GHSC-PSM shared information on global MNCH product supply observations and highlights from project-supported countries on the impacts of COVID-19 with the UNICEF Supply Division and MHSC.
- Collaborated with the Global Fund to develop a short-term tender that detailed quality requirements needed to re-engage an RDT supplier.

- Participated in the TraceNet Working Group, which is chaired by PMI and Global Fund representatives. The Global Fund, GS1 Global, GHSC-PSM, and 1WorldSync collaborated on a webinar to promote registration and global standards for LLINs. (For additional details, see section B2.)
- Presented at the International AIDS Conference, IAS 2020, on HIV/AIDS commodity data visibility and the IAS COVID-19 Conference on solutions in Pakistan and Nigeria to mitigate the challenges of COVID-19 on the countries' health supply chains.
- The Angola country office presented lessons learned from its innovative redesign of the health supply chain and partner engagement in response to COVID-19 at the Africa Supply Chain in Action Conference.


GHSC-PSM hosts TLD Transition session at the 2019 International Conference on AIDS and STIs in Africa, held in Q1 of FY 2020.

- Participated in the Health and Humanitarian Logistics Conference (HHLC), presenting on the advanced analytics tools used in Pakistan to track and ensure availability of health commodities during COVID-19 and on a tool used to model MMD scenarios of HIV/AIDS commodities to support countries shifting to MMD during COVID-19.
- GHSC-PSM submitted abstracts to the 2020 American Society of Tropical Medicine and Hygiene Annual Meeting and Global Health Supply Chain Summit held in November 2020. Seven of the 10 abstracts were accepted for presentation. Three GHSC-PSM initiatives were also shortlisted for the Global Health Supply Chain Summit grand prize.

### 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 continues to collaborate with GHSC-QA to maintain communication flow, identify areas of mutual concern and solutions, and ensure QA requirements are incorporated into GHSC-PSM systems, as applicable.

- GHSC-PSM is working with the GHSC-QA project to develop a contingency strategy for sampling and testing (see additional details in section B1). GHSC-PSM worked with GHSC-QA and USAID in Q3 to monitor the progress on the quality-related review of the fixed-dose combination of isoniazid, B6, and cotrimoxazole for TB preventive therapy (see section B1 for additional details).
- In collaboration with GHSC-QA, continued to provide QA support to COVID-19–related activities. The project developed standard operating procedures to optimize GHSC-QA and GHSC-PSM's collaboration for recalls/market withdrawal (see additional details in Annex A).

# Annex A. COVID-19 Response

Delivered **8,772 ventilators to 44 countries** between Q3 and Q4 FY 2020.

**US $9.8 million in U.S. Government (USG)** funding to procure respiratory and cardiac supplies for Italy and **100 ventilators** delivered.

**Issued 58 ROs and 102 POs** for diagnostic sample collection items, diagnostic tests, general patient care, laboratory consumables, personal protective equipment (PPE), pharmaceutical treatments (essential medicines), and sanitation to 16 countries.

GHSC-PSM has been monitoring the effects of COVID-19 since January 2020 to prevent supply-chain disruption worldwide.

In Q3, 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 Q4, the project continued to work on several workstreams to manage and respond to COVID-19, including:

- ***Field support funding***: agreed with USAID to a defined list of standard products to procure from and worked with GHSC-QA on the eligibility criteria
- ***Respiratory and cardiac supplies for Italy***: $10 million in funding allocated for ventilators, syringe pumps, defibrillators, and continuous positive airway pressure (CPAP) helmets
- ***Ventilator procurement***: $190 million to procure and deliver ventilators to high-priority countries
- ***Oxygen (O2) procurement***: $15 million for equipment and technical assistance, including high-flow, high-capacity O2 concentrators, Pressure Swing Adsorption (PSA) plants, O2 cylinders (locally procured), and bulk liquid O2 (locally procured)

To date, the project's primary COVID-19 response efforts have centered on procuring ventilators. In Q4, GHSC-PSM delivered 6,742 ventilators to 37 countries, and 8,722 ventilators to 44 countries since May. The sustained speed and flexibility in this activity represent an extraordinarily collaborative effort across the project, USAID, USG, and country governments.

### Central Funding and Field Support Funding

***Strategic sourcing***

In May 2020, GHSC-PSM received funding for COVID-19 response, to be used by 18 eligible countries to procure from a list of 332 USAID-approved products with eligibility criteria established by GHSC-QA. Within just a few weeks, GHSC-PSM issued RFQs for 232 types of medical equipment and 60 types of pharmaceutical products.

In June 2020, the project developed an Excel-based essential medicines (EM) allocation tool to facilitate these procurements and shorten the allocation portion of the lead time. The project used an existing VMMC allocation tool as a starting point, and incorporated the customizations needed to respond to time-sensitive COVID-19 EM demand. This tool allows users to quickly select suppliers and allocate purchase orders using order data from the project's existing ARTMIS software and matching it with the supplier contract data, taking into account numerous considerations (including ability to meet the countries' importation requirements, requested delivery dates (RDDs), and minimum order quantities, price, shelf life requirements, and past performance) to select the best-value supplier.

The project worked to secure fixed pricing with suppliers and to establish a contracting mechanism for ordering that could accommodate uncertain demand from countries receiving COVID-19 funding.

***Medical equipment and supplies.*** The project conducted a global sourcing event with a combined international and a local focus in DCP countries receiving COVID-19 funding. The strategy was designed to leverage the existing supplier base with proven quality-assurance capabilities to source in a dynamic and volatile market. The project released an RFQ in May 2020 for GHSC-QA-qualified and certified lab wholesalers that held BOAs and awarded new fixed-price schedules to four suppliers in June. GHSC-PSM released a separate RFQ for the same 237 commodities in May 2020 to vendors in four countries to allow for decentralized order management in those countries. The goal for both RFQs was to lock in fixed pricing for 90 days with a short list of suppliers and to execute procurements against those contracts while reducing order fulfillment time.

***Pharmaceuticals/essential medicines to treat COVID-19 symptoms.*** The primary goal of the COVID-19 pharmaceuticals sourcing strategy is to reduce order fulfillment time to include order processing cycle time as well as product availability lead time. The project released an RFQ for COVID-19 pharmaceuticals in June 2020 and fully executed fixed-price contracts in early July with seven GHSC-QA approved EM wholesalers. These fixed-price schedules include 57 universal products (available to all countries) and 41 products for specific countries based on registration authorization.

### Intensive Care Units

The project is conducting market research on rapid-deploying field intensive care units (ICUs), local supply of oxygen in sub-Saharan Africa and landscaping studies of COVID-19 diagnostics availability. GHSC-PSM also researched the market for COVID-19 treatment such as remdesivir, but to date has not been requested to procure the product.

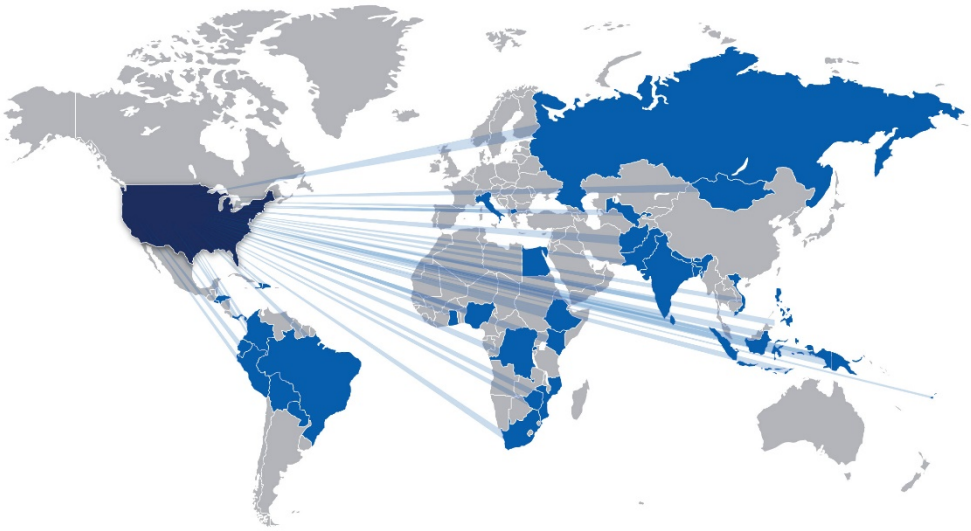
### Ventilator Procurement

On May 4, GHSC-PSM received a request from USAID to procure ventilators for South Africa's COVID-19 response. On May 11, barely one week later, 50 ventilators were delivered to Johannesburg. This rapid pace of procurement represented a supply-chain victory for GHSC-PSM, which mobilized all available resources, including additional staff from within the project, to speed up a process that can take up to several months to complete in non-pandemic times.


Ventilators were delivered to St, Kitts and Nevis on August 26, 2020. *Photo credit: GHSC-PSM*

By the end of Q4, GHSC-PSM had received $172 million in U.S. Government funding for procuring U.S.-sourced ventilators for 44 countries. As of September 30, USAID facilitated the approval of 122 requisition orders, which enabled GHSC-PSM to execute 224 purchase orders, equating to deliveries of 8,722 ventilators to 44 countries in just five months.

Exhibit 20. Ventilator Recipient Countries in in FY 2020

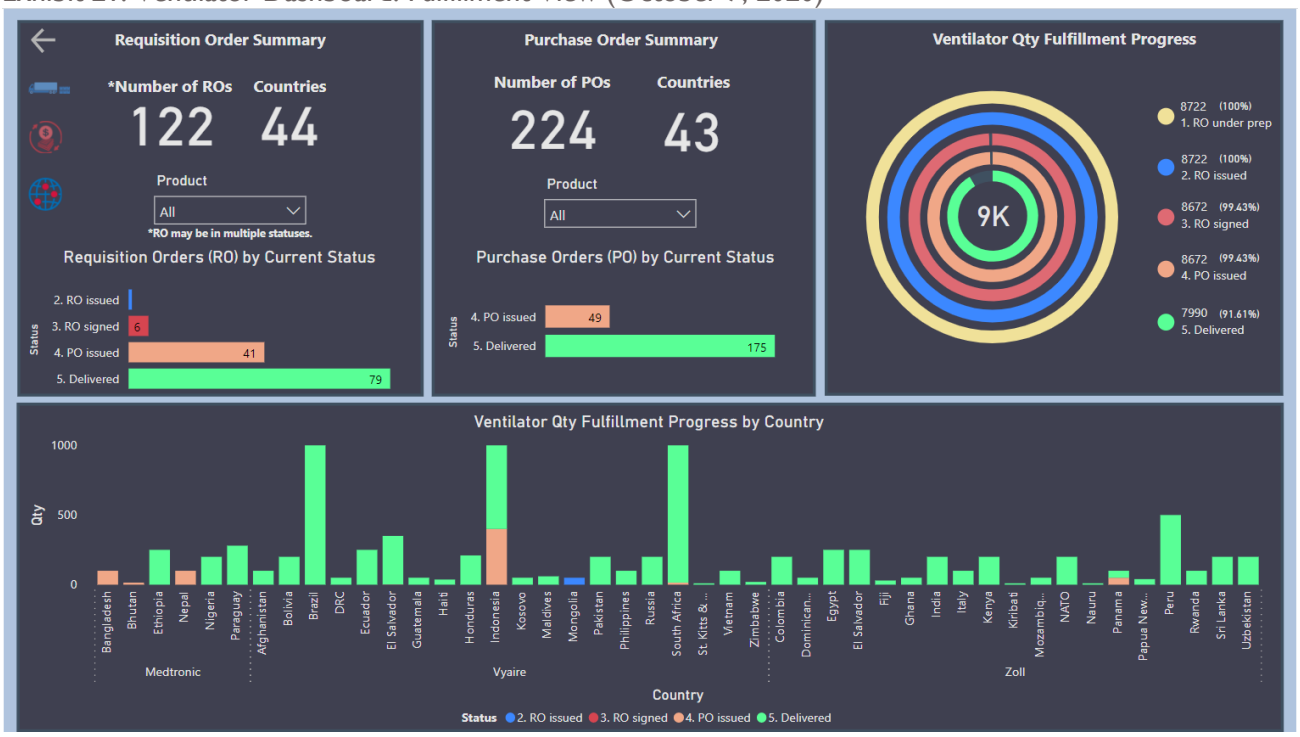


**VENTILATOR RECIPIENT COUNTRIES IN IN FY 2020**

| | | |
|---|---|---|
| Afghanistan | Haiti | Pakistan |
| Bangladesh | Honduras | Panama |
| Bhutan | India | Papua New Guinea |
| Bolivia | Indonesia | Paraguay |
| Brazil | Italy | Peru |
| Colombia | Kenya | Philippines |
| Dominican Republic | Kirbati | Russia |
| DRC | Kosovo | Rwanda |
| Ecuador | Maldives | South Africa |
| Egypt | Mongolia | Sri Lanka |
| El Salvador | Mozambique | St. Kitts and Nevis |
| Ethiopia | NATO | Uzbekistan |
| Fiji | Nauru | Vietnam |
| Ghana | Nepal | Zimbabwe |
| Guatemala | Nigeria | |

**44** countries around the globe received over **8,000 ventilators** since we began the procurement process in May 2020. **Our ventilator deliveries are the cornerstone of USAID's contribution to the global response to stem the COVID-19 pandemic.**

Exhibit 21. Ventilator Dashboard: Fulfillment View (October 7, 2020)



## Shipping Challenges

At the request of USAID's Ventilator Task Force, GHSC-PSM quickly established a team to manage the logistical distribution of ventilators to 44 countries. Variations in supplier production schedules, changing prioritization of recipient countries, and limitations in the airfreight industry because of COVID-19 restrictions, were just some of the many challenges the team overcame.

The project required diplomatic clearance at destination, which necessitated a designated consignee (e.g., the U.S. Embassy or Ministry of Health) and associated documentation, particularly in-country product registration and an import duty waiver. Project staff worked tirelessly with USAID counterparts to coordinate with Ministries of Health, the U.S. embassies, missions, U.S.-based suppliers, and in-country supplier representatives to facilitate the prompt delivery of these commodities.

The major challenge was speed. The project needed to deliver ventilators in an unprecedently short period of time. The speed at which these procurements were made was especially impressive because of the market limitations. Being sole source, the project had very little leverage with suppliers as they were facing competing priorities and struggling to scale up production.

Also, both air and sea freight options were extremely limited, and sourcing flights for the dangerous goods components associated with some of the ventilators was even more challenging. Strict IATA regulations required that a dangerous goods specialist pack and label the cargo at the supplier and provide detailed documentation for the 3PL to book passage with the carrier. Passenger planes will not carry cargo with lithium ion batteries, and many cargo aircraft-only carriers would not accept external lithium batteries, resulting in severely limited carrier options for these commodities.

As most of global airfreight cargo is lifted on passenger flights, this increased the complexity of managing the ventilators and posed significant challenges for securing routings to countries such as Brazil, DRC, El Salvador, Indonesia, the Republic of Maldives, South Africa, Vietnam, and others. The project worked closely with three contracted 3PLs and sought the help of UPS, the Department of Defense, and military air to identify airlines and establish routings that ensured commodities arrived by requested deadlines.

GHSC-PSM averaged nine days between order readiness date and delivery date for deliveries of thousands of ventilators.

The remote locations of several destination countries was another that challenged distribution logistics. The Republic of Fiji, the Republic of Kiribati, the Republic of Nauru, and the Independent State of Papua New Guinea in the Pacific region have small populations and, as a result, very limited flight frequency. For example, Nauru has a total population of 13,000 people. GHSC-PSM could not identify any airlines that would fly into the country. The USG then turned to the Nauru government for help, who partnered with an Australian-based logistics company to deliver the ventilators as part of their routing from Brisbane to Nauru. Because of COVID-19, however, Kiribati had shut down all international flights. The project, along with USAID, leveraged a relationship with the World Food Program and obtained approval to load the

ventilators from Fiji onboard their flight, which was routing medical equipment and products.

### Health Systems Strengthening: COVID-19 and Emergency Preparedness and Response

Local travel restrictions, limitations on the number of people who can gather, and other public health precautions required changes to planned technical assistance activities. To mitigate this, the project converted many short-term and long-term technical assistance activities to virtual platforms to ensure that programs continue to operate and meet their expected milestones. In cases where lack of Internet connectivity impedes implementation of some activities or virtual solutions—such as supportive supervision at health facilities—country offices are finding ways to deliver these services safely.

This section describes activities undertaken in Q4 to continue delivering on the project's health systems strengthening goals and obligations.

The project hosts a virtual training on procurement planning in the Kingdom of Eswatini. *Photo credit: GHSC-PSM*

***Resources***

Since March, GHSC-PSM has published a series of guidance documents to help supply chain implementers manage the crisis. These include:

- Stronger together: Preparing supply chains for what's next with COVID-19 response
- Keeping supply chain workers safe during a pandemic
- COVID-19 commodity quantification & budget calculator
- Emergency supply chain preparedness in the context of COVID-19
- Actions to take now to ensure routine supplies are available: COVID-19 response recommendations
- Questions to consider to maintain routine supply of public health commodities and support COVID-19 response
- COVID-19 job aid

***Pivoting to meet our in-country commitments***

- In **Honduras**, USAID authorized the use of newly obligated FY 2020 funds in Q4 to conduct additional activities, including the procurement of PPE, computer equipment, and software development. The project in Honduras successfully executed the approved activities within the quarter and delivered PPE, including KN95 and surgical masks, to key personnel working to minimize their risk of COVID-19 infections and risk of interruption to the HIV/AIDS commodities supply chain.
- In the **Kingdom of Eswatini**, the team adapted to preparing and conducting its annual quantification exercise for the first time using remote conferencing technology. In preparation for the annual quantification process, the project hosted a TB quantification training using QuanTB software for the members of the National Quantification Committee (NQC). The training covered theory and used Eswatini data for the practical sections. As a result of this training, five NQC members are now competent in TB quantification using QuanTB software and in-country capacity has been enhanced to conduct TB quantification with minimal technical support.

- In **Lesotho**, the project has been working in coordination with the Ministry of Health to avail PPE for protection of healthcare workers. The MOH, through the Supply Chain Management Directorate (SCMD), developed distribution lists for these health commodities to be distributed from the central level to the health facilities through a push system. The SCMD integrated the reporting of PPE in the informed push for their movement at the health facilities to be reported monthly. Integrating PPE into the informed push has improved data visibility of these health commodities.
- In **Pakistan**, the project supported the delivery of 200 brand new ventilators procured with U.S. Government funding to 64 sites across the country in the fight against COVID-19. To ensure smooth operations, the Pakistan team provided technical support for importation, facility assessment, temporary storage, and in-country transportation. Furthermore, the project oversaw the modalities pertaining to commissioning and product training on the use of ventilators. Around 539 hospital staff at critical care units were trained in ventilator management.
- In **Zambia**, GHSC-PSM, had already conducted training on paper-based LMIS for fifth-year students at the University of Zambia, but the students requested further assistance in the provision of training in the eLMIS. The project hosted a virtual orientation in the use and functionality of eLMIS was conducted to 63 students. It is expected that students will use the acquired knowledge and skills in the electronic management of health commodities once they graduate and are deployed in SDPs.

Current Reporting Period

2020-Q4

# GLOBAL HEALTH SUPPLY CHAIN PROGRAM

## Procurement and Supply Management

## Global Supply Chain M&E Indicator Performance

FY2020 Quarter 4, July - September 2020

**Delivery Impact to Date**

**Number of ACT treatments delivered**

268,364,377

**Number of Couple Years Protection delivered**

73,291,615

**Person-years of ARV treatment delivered**

10,583,217

| | | | | | |
|---|---|---|---|---|---|
| OTIF, OTD and Backlog | Cycle Time | Quality Assurance (TO2 only) | Procurement | Total Landed Cost | Registration |
| Supply Plan and Forecast Error | Supply Plan Submissions | Warehousing | Vendor Performance | Global Advocacy Engagements | GHSC-BI&A Data Sharing |
| 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 CENTERS FOR DISEASE CONTROL AND PREVENTION

U.S. President's Malaria Initiative

# Fiscal Year 2020 Key Performance Overview - IDIQ

| | | FY 2020 Q1 | FY 2020 Q2 | FY 2020 Q3 | FY 2020 Q4 | FY 2020 |
|---|---|---|---|---|---|---|
| Reporting Period (Quarter) Start Date | | 10/01/19 | 01/01/20 | 04/01/20 | 07/01/20 | 10/01/19 |
| Reporting Period (Quarter) End Date | | 12/31/19 | 03/31/20 | 06/30/20 | 09/30/20 | 09/30/20 |
| **Global Supply Chain** | | | | | | |
| A1a. | Percentage of line items delivered on time and in full, within the minimum delivery window | 89% | 88% | 88% | 87% | 89% |
| A1b. | Percentage of line items delivered on time, within the minimum delivery window | 93% | 91% | 91% | 88% | 91% |
| A3. | Cycle time (average) – # days per shipment | 228 | 255 | 252 | 206 | 235 |
| A4. | Inventory turns (average number of times inventory cycles through GHSC-PSM-controlled global facilities) – ratio | 7.6 | | | | |
| A5. | Total landed cost (logistics costs) | 12.5% | | 9.4% | | 9.4% |
| A13. | Percentage of batches of product showing nonconformity (out of specification percentage) | 1.2% | 3.6% | 0.0% | 2.5% | 1.8% |
| A16. | Percentage of backlogged line items | 0.7% | 2.1% | 5.8% | 5.8% | 5.8% |

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

# Fiscal Year 2020 Key Performance Overview - IDIQ

| | | | FY 2020 Q1 | FY 2020 Q2 | FY 2020 Q3 | FY 2020 Q4 | FY 2020 |
|---|---|---|---|---|---|---|---|
| Reporting Period (Quarter) Start Date | | | 10/01/19 | 01/01/20 | 04/01/20 | 07/01/20 | 10/01/19 |
| Reporting Period (Quarter) End Date | | | 12/31/19 | 03/31/20 | 06/30/20 | 09/30/20 | 09/30/20 |
| In-Country | | | | | | | |
| B1. | Stockout rate at SDPs | | 16.9% | 17.3% | 18.9% | 21.2% | 18.4% |
| B2. | Percentage of stock status observations in storage sites where commodities are stocked according to plan, by level in supply system | | 24.1% | 20.2% | 21.3% | 19.% | 21.4% |
| B3. | SDP reporting rate to the logistics management information system (LMIS) | | 76.5% | 84.1% | 75.6% | 85.7% | 80.7% |
| C1. | Number of people trained – # | TO-Specific Trainings Combined | 935 | 1,148 | 425 | 3,172 | 5,680 |
| | | Cross-TO Trainings | 731 | 650 | 243 | 2,124 | 3,748 |
| | | All Trainings (TO-Specific & Cross-TO) | 1,666 | 1,798 | 668 | 5,296 | 9,428 |

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

# Fiscal Year 2020 Key Performance Overview By Task Order

| | Indicator | IDIQ FY20 Target | Task Order 1 – HIV/AIDS | | | | | Task Order 2 - Malaria | | | | | Task Order 3 – PRH | | | | | Task Order 4 – MNCH | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | FY20 Target | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | FY20 Target | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | FY20 Target | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | FY20 Target | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 |
| **Global Supply Chain** | | | | | | | | | | | | | | | | | | | | | | |
| A1a | Percentage of line items delivered on time and in full, within the minimum delivery window (*Total number of line items delivered*) | 80% | 80% | 90% 879 | 85% 744 | 89% 816 | 85% 931 | 80% | 87% 147 | 92% 238 | 82% 168 | 93% 222 | 80% | 86% 51 | 95% 66 | 93% 74 | 95% 58 | 80% | 100% 3 | 100% 26 | 89% 87 | 90% 31 |
| A1b | Percentage of line items delivered on time within the minimum delivery window (*Total number of ADDs in the quarter*) | 80% | 80% | 94% 872 | 89% 767 | 90% 866 | 89% 927 | 80% | 91% 147 | 94% 247 | 88% 168 | 97% 230 | 80% | 89% 54 | 98% 60 | 97% 78 | 94% 54 | 80% | 100% 1 | 100% 26 | 96% 79 | 89% 36 |
| A3 | Cycle time (average) – days per line item delivered | 225 | 213 | 201 | 208 | 221 | 238 | 295 | 372 | 389 | 346 | 334 | RDC: 263 DD: 268 | RDC 268 DD: 280 | RDC 229 DD: 220 | RDC 280 DD: 239 | RDC 248 DD: 276 | 206 | 306 | 354 | 457 | 369 |
| A4 | Inventory turns – ratio | NA | 4 | 9.8 | | | | 4 | 12.0 | | | | 3 | 2.8 | | | | NA | *No inventory held* | | | |

A2: See Task Order 2 QA-specific indicators below. This indicator is not reported for TO1, TO3, and TO4 because QA processes for these task orders are managed by the GHSC-QA project.
Fiscal Year targets represent desired indicator result aggregated over the full fiscal year.

| Indicator | | IDIQ FY20 Target | Task Order 1 – HIV/AIDS | | | | | Task Order 2 - Malaria | | | | | Task Order 3 – PRH | | | | | Task Order 4 – MNCH | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | FY20 Target | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | FY20 Target | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | FY20 Target | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | FY20 Target | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 |
| A5 | Total landed cost (logistics costs) | 16.5% | 9.8% | 7.2% | | 6.2% | | 33.8% | 28.5% | | 22.8% | | 15.2% | 13.2% | | 11.3% | | 30.0% | 63.2% | | 22.4% | |
| A6a<br>A6b | Absolute percent supply plan error, with variants annual absolute percent error and supply plan bias<br>*And*<br>Absolute percent forecast error, with variants annual absolute percent error and forecast bias | *See Forecast and Supply Plan Performance pages for detailed indicator results* | | | | | | | | | | | | | | | | | | | | |
| A7 | Temporary waiver percentage | NA | NA | *Not required for TO1 per M&E Plan* | | | | NA | NA | 5% | 10% | 14% | NA | NA | 7% | 3% | 9% | NA | *Not required for TO4 per M&E Plan* | | | |
| A8 | Average percentage of shelf life remaining for warehoused commodities, weighted by the value of each commodity's stock | NA | 78% | 83% | 82% | 77% | 82% | 70% | 74% | 83% | 83% | 80% | 78% | 83% | 82% | 84% | 80% | NA | *No inventory held* | | | |
| A10 | Percentage of product procured using a framework contract (framework contract percentage) | NA | 83% | 91% | 86% | 91% | 93% | 73% | 37% | 79% | 71% | 83% | 95% | 100 % | 100 % | 100 % | 100 % | 75% | 57% | 100 % | 100 % | 100 % |
| A16 | Percentage of backlogged line | <5% | <5% | 0.8% | 2.6% | 6.4% | 6.3% | <5% | 0.7% | 0.9% | 5.1% | 2.2% | <5% | 0.0% | 0.0% | 0.9% | 0.4% | <5% | 0.0% | 0.0% | 4.2% | 0.0% |

A9, A11, A12: These indicators have been removed from the GHSC-PSM M&E Plan with approval from USAID.
A13, A14, A15: See Task Order 2-specific indicator results below. These indicators are not reported for TO1, TO3, and TO4 because QA processes for these task orders are managed by the GHSC-QA project.
Fiscal Year targets represent desired indicator result aggregated over the full fiscal year.

| Indicator | | Task Order 2 – Malaria | | | | |
|---|---|---|---|---|---|---|
| | | FY20 Target | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 |
| A2 | Percentage of QA processes completed within the total estimated QA lead times | 80% | 94% | 87% | 91% | 97% |
| A13 | Percentage of batches of product for which the final result is showing nonconformity (out of specification percentage) | <1% | 1.2% | 3.6% | 0.0% | 2.5% |
| A14b | Average vendor rating score – QA labs | NA | 90% | 80% | 86% | 90% |
| A15 | Percentage of QA investigation reports submitted within 30 calendar days of outcome determination (QA investigation report submission) | 90% | 80% | | 100% | |
| Indicator | | Crosscutting | | | | |
| A14a | Average vendor rating score – Suppliers | NA | 80% | 77% | 83% | 77% |
| A14c | Average vendor rating score – Freight Forwarders | NA | 85% | 85% | See detail page | See detail page |

Fiscal Year targets represent desired indicator result aggregated over the full fiscal year. For certain performance indicators GHSC-PSM and USAID have agreed that targets are not appropriate, either because performance is not fully within project control, to avoid unwanted incentives, or because there is insufficient data to set targets at this time. For more detail, please see Annex C of the GHSC-PSM Monitoring and Evaluation Plan (17 Mar 2020).

| Indicator | | Task Order 1 – HIV/AIDS | | | | Task Order 2 - Malaria | | | | Task Order 3 – PRH | | | | Task Order 4 – MNCH | | | | Crosscutting | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 |
| **In-country Context, Performance, and Sustainability** | | | | | | | | | | | | | | | | | | | | | |
| B1 | Stockout rate at SDPs | 10% | 11% | 12% | 14% | 16% | 20% | 23% | 27% | 20% | 18% | 19% | 20% | NA | | | | NA | | | |
| B2 | Percentage of stock status observations in storage sites where commodities are stocked according to plan, by level in supply system | 31% | 29% | 29% | 28% | 23% | 17% | 15% | 16% | 19% | 16% | 22% | 16% | NA | | | | NA | | | |
| B3 | SDP reporting rate to the logistics management information system (LMIS) | 81% | 85% | 87% | 89% | 81% | 86% | 81% | 88% | 78% | 84% | 69% | 83% | 64% | 81% | 74% | 86% | NA | | | |
| B4 | Average rating of in-country data confidence at the central, subnational, and SDP levels – (0-9 scale) | 6.6 | | | | 7.0 | | | | 6.9 | | | | 7.4 | | | | NA | | | |
| B5 | Percentage of required annual forecasts conducted | *See country-specific indicator pages for detailed data for this indicator (reported annually).* | | | | | | | | | | | | | | | | | | | |
| B6 | Percentage of required supply plans submitted to GHSC-PSM during the quarter | *See Supply Plan Submission and country-specific indicator pages for detailed data for this indicator.* | | | | | | | | | | | | | | | | | | | |

Targets for in-country performance indicators are set at the country level. Targets are not required for context indicators.

| Indicator | | Task Order 1 – HIV/AIDS | | | | Task Order 2 - Malaria | | | | Task Order 3 – PRH | | | | Task Order 4 – MNCH | | | | Crosscutting | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 |
| **In-country Context, Performance, and Sustainability** | | | | | | | | | | | | | | | | | | | | | |
| B7 | Percentage of total spent or budgeted on procurement of commodities for public sector services by funding source | *See country-specific indicator pages for detailed data for this indicator (reported annually).* | | | | | | | | | | | | | | | | | | | |
| B8 | Percentage of targeted supply chain activities in which the host country entity has achieved technical independence with GHSC-PSM technical assistance. | *See country-specific indicator pages for detailed data for this indicator (reported annually).* | | | | | | | | | | | | | | | | | | | |
| B9 | Supply chain technical staff turnover rate | *See country-specific indicator pages for detailed data for this indicator (reported annually).* | | | | | | | | | | | | | | | | | | | |
| B10 | Percentage of countries that have a functional logistics coordination mechanism in place | | 82% | | | | 85% | | | | 84% | | | | 78% | | | | NA | | |
| B11 | Percentage of leadership positions in supply chain management that are held by women | | NA | | | | NA | | | | NA | | | | NA | | | | 29% | | |

Targets for in-country performance indicators are set at the country level. Targets are not required for context indicators.

| Indicator | | Task Order 1 – HIV/AIDS | | | | Task Order 2 - Malaria | | | | Task Order 3 – PRH | | | | Task Order 4 – MNCH | | | | Crosscutting | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 |
| **In-country Context, Performance, and Sustainability** | | | | | | | | | | | | | | | | | | | | | |
| B12 | Absolute percent consumption forecast error, with forecast bias variant | *See country-specific indicator pages for detailed data for this indicator (reported annually).* | | | | | | | | | | | | | | | | | | | |
| C1 | Number of innovations (including operations research studies) that were developed, implemented, or introduced and are related to the health commodity market or supply chain best practices | 3 | 3 | 8 | 11 | 0 | 2 | 1 | 1 | 2 | 1 | 0 | 1 | 0 | 2 | 2 | 2 | 6 | 3 | 13 | 4 |
| C2 | Number of people trained | 192 | 578 | 311 | 2638 | 711 | 217 | 73 | 467 | 32 | 240 | 12 | 67 | 0 | 113 | 29 | 0 | 731 | 650 | 243 | 2124 |
| C7a | Percentage of product lost due to expiry while under GHSC-PSM control | *See Warehouse Performance and country-specific indicator pages for detailed data for this indicator.* | | | | | | | | | | | | | | | | | | | |
| C7b | Percentage of product lost due to theft, damage, or other causes while under GHSC-PSM control | *See 3PL and Commodity Vendor Performance and country-specific indicators pages for detailed data for this indicator.* | | | | | | | | | | | | | | | | | | | |

Targets for in-country performance indicators are set at the country level. Targets are not required for context indicators.
C3, C4, C5 and C6: These indicators have been removed from the GHSC-PSM M&E Plan with approval from USAID.

| Indicator | | Task Order 1 – HIV/AIDS | | | | Task Order 2 - Malaria | | | | Task Order 3 – PRH | | | | Task Order 4 – MNCH | | | | Crosscutting | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 | 2020 Q1 | 2020 Q2 | 2020 Q3 | 2020 Q4 |
| **In-country Context, Performance, and Sustainability** | | | | | | | | | | | | | | | | | | | | | |
| C8 | Number of global advocacy engagements in support of improved availability of essential health commodities | 3 | | 1 | | 5 | | 4 | | 6 | | 6 | | 1 | | 3 | | 7 | | 3 | |
| C10 | Percentage of GHSC-PSM-procured or supported molecular instruments that remained functional during the reporting period | 79% | 77% | 80% | 81% | NA | | | | NA | | | | NA | | | | NA | | | |
| C11 | Supply chain policies, regulations, strategies, or SOPs developed or updated with GHSC-PSM assistance | *See country-specific indicator pages for detailed narratives for this indicator.* | | | | | | | | | | | | | | | | | | | |

Targets for in-country performance indicators are set at the country level. Targets are not required for context indicators.
C9: This indicator has been removed from the GHSC-PSM M&E Plan with USAID approval.

# Delivery Performance

Current Reporting Period

2020-Q4

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

| Task Order | Total # of Line Items Delivered | OTIF | OTIF Target |
|---|---|---|---|
| TO1-HIV | 931 | 85% | 80% |
| TO2 | 222 | 93% | 80% |
| TO3 | 58 | 95% | 80% |
| TO4 | 31 | 90% | 80% |
| **Total** | **1,712** | **87%** | **80%** |

## A1b. On-time Delivery

| Task Order | Total # of Line Items with ADDs in the quarter | OTD | OTD Target |
|---|---|---|---|
| TO1-HIV | 1,436 | 89% | 80% |
| TO2 | 230 | 97% | 80% |
| TO3 | 54 | 94% | 80% |
| TO4 | 36 | 89% | 80% |
| **Total** | **1,756** | **88%** | **80%** |

## A16. Backlog Percentage

| Task Order | Total # of line items with ADDs in the last 12 months | Backlog | Backlog target |
|---|---|---|---|
| TO1-HIV | 3,475 | 6.3% | 5% |
| TO2 | 801 | 2.2% | 5% |
| TO3 | 247 | 0.4% | 5% |
| TO4 | 142 | 0.0% | 5% |
| **Total** | **5,251** | **5.8%** | **5%** |

## Analysis

Delivery performance for HIV commodities remained high this quarter, with 89 percent of line items delivered on-time and 85 percent delivered on-time, in-full. Delivery volumes were also high this quarter, with 931 line items of HIV products delivered. The project has seen increases in the backlog rate as it stands two weeks after the end of the quarter, rising to 6.3 percent of line items with ADDs in the pervious 12 months. Many of these delayed deliveries are pandemic-related. For more details on delivery performance, including COVID-impacted delivery performance, please see the main narrative of this report.

Note that the TO1 figures shown here refer to HIV commodities and condoms only. COVID-19 products are excluded from TO1 but included in the project-wide "Total."

Standard delivery performance for family planning commodities remained strong this quarter, with 94 percent of line items delivered on-time and 95 percent of deliveries arriving on-time, in-full. The backlog rate for Task Order 3 also remained consistently low, with less than 1 percent of line items remaining undelivered and late two weeks following the end of the quarter. For more details on delivery performance, including COVID-impacted delivery performance, please see the main narrative of this report.

Standard delivery performance for malaria commodities remained high this quarter, with 97 percent of line items delivered on-time and 93 percent delivered on-time, in-full. Delivery volumes were also high this quarter, with 222 line items delivered. The backlog rate for Task Order 2 also began to recover, with only 2.2 percent of line items remaining undelivered and late two weeks following the end of the quarter. For more details on delivery performance, including COVID-impacted delivery performance, please see the main narrative of this report.

Standard delivery performance for maternal and child health and Zika commodities continued to exceed targets this quarter, with 89 percent of line items delivered on-time and 90 percent of deliveries arriving on-time, in-full. The backlog rate for Task Order 4 has returned to zero percent. Deliveries this quarter included 30 line items of essential medicines and non-pharma items for DRC, Liberia, and Haiti, as well as one shipment of insect repellent for Ecuador. For more details on delivery performance, including COVID-impacted delivery performance, please see the main narrative of this report.

Across task orders, including orders for COVID-19, the project achieved an on-time delivery rate of 88 percent, and on-time, in-full delivery rate of 87 percent. The backlog remained consistent, at 5.8 percent. The total number of line items delivered surged to its highest level, at more than 1,700 line items delivered. This included nearly 500 line items of products to combat the COVID-19 pandemic.

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 74 percent, and COVID-impacted OTIF was 69 percent. For further discussion of global supply chain dynamics during the pandemic, please see the main narrative of this report.

# Delivery Performance

Current Reporting Period

2020-Q4

| Task Order | A1a. OTIF rate: OTIF | A1a. OTIF rate: Total # of Line Items Delivered | A1b. OTD rate: OTD | A1b. OTD rate: Total # of Line Items with ADDs in the quarter | A16. Backlog percentage: Backlog | A16. Backlog percentage: Total # of line items with ADDs in the last 12 months |
|---|---|---|---|---|---|---|
| **TO1** | **86%** | **1,401** | **87%** | **1,436** | **7.0%** | **4,061** |
| Adult ARV | 90% | 122 | 97% | 120 | 0.9% | 440 |
| Condoms | 88% | 51 | 92% | 50 | 6.8% | 146 |
| COVID19 | 87% | 470 | 82% | 509 | 10.9% | 586 |
| Food and WASH | | | | | 0.0% | 1 |
| HIV RTK | | | | | 0.0% | 2 |
| Laboratory | 82% | 525 | 91% | 498 | 7.7% | 1,943 |
| Other Non-Pharma | 83% | 69 | 68% | 87 | 9.9% | 313 |
| Other Pharma | 100% | 18 | 80% | 25 | 6.1% | 115 |
| Other RTK | 0% | 4 | | | 0.0% | 17 |
| Pediatric ARV | 86% | 90 | 94% | 90 | 0.3% | 298 |
| TB HIV | 97% | 35 | 94% | 36 | 1.9% | 107 |
| Vehicles and Other Equipment | | | | | 33.3% | 3 |
| VMMC | 100% | 17 | 81% | 21 | 16.7% | 90 |
| **TO2** | **93%** | **222** | **97%** | **230** | **2.2%** | **801** |
| ACTs | 89% | 74 | 99% | 75 | 0.0% | 271 |
| Laboratory | 98% | 40 | 98% | 40 | 5.1% | 177 |
| LLINs | 95% | 37 | 95% | 38 | 0.8% | 122 |
| mRDTs | 100% | 18 | 100% | 23 | 9.0% | 67 |
| Other Non-Pharma | 94% | 17 | 100% | 17 | 0.0% | 45 |
| Other Pharma | 67% | 3 | 100% | 3 | 0.0% | 7 |
| Severe Malaria Meds | 100% | 14 | 93% | 15 | 3.8% | 52 |
| SMC | 67% | 9 | 78% | 9 | 0.0% | 38 |
| SP | 100% | 10 | 100% | 10 | 0.0% | 22 |

| Task Order | A1a. OTIF rate: OTIF | A1a. OTIF rate: Total # of Line Items Delivered | A1b. OTD rate: OTD | A1b. OTD rate: Total # of Line Items with ADDs in the quarter | A16. Backlog percentage: Backlog | A16. Backlog percentage: Total # of line items with ADDs in the last 12 months |
|---|---|---|---|---|---|---|
| **TO3** | **95%** | **58** | **94%** | **54** | **0.4%** | **247** |
| Combined Oral Contraceptives | 90% | 10 | 90% | 10 | 0.0% | 53 |
| Copper-Bearing Intrauterine Devices | 100% | 2 | 100% | 2 | 0.0% | 5 |
| Emergency Oral Contraceptives | | | | | 8.3% | 12 |
| Implantable Contraceptives | 86% | 7 | 83% | 6 | 0.0% | 47 |
| Injectable Contraceptives | 96% | 23 | 95% | 21 | 0.0% | 81 |
| Other Non-Pharma | 100% | 4 | 100% | 4 | 0.0% | 9 |
| Other RTK | 100% | 1 | 100% | 1 | 0.0% | 1 |
| Progestin Only Pills | 100% | 2 | 100% | 1 | 0.0% | 23 |
| Standard Days Method | 100% | 9 | 100% | 9 | 0.0% | 16 |
| **TO4** | **90%** | **31** | **89%** | **36** | **0.0%** | **142** |
| Laboratory | 100% | 4 | | | 0.0% | 8 |
| Other Non-Pharma | 50% | 2 | 100% | 1 | 0.0% | 3 |
| Other Pharma | 96% | 24 | 89% | 35 | 0.0% | 130 |
| Other RTK | 0% | 1 | | | 0.0% | 1 |

## 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

2020-Q4

## A3. Average overall cycle time

| Task Order | # of line items delivered | Average Cycle Time | Cycle time target |
|---|---|---|---|
| TO1-HIV | 931 | 238 | 205 |
| TO2 | 222 | 334 | 295 |
| TO3 | 58 | 263 | |
| TO4 | 31 | 369 | 206 |
| **Total** | **1712** | **207** | |

## A3. Average overall cycle time (with TO3 Targets)

| Task Order | # of line items delivered | Average Cycle Time | Cycle time target |
|---|---|---|---|
| **TO3** | **58** | **263** | |
| Direct drop fulfillment | 31 | 276 | 260 |
| Warehouse fulfillment | 27 | 248 | 250 |

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

| Task Order | Analysis |
|---|---|
| TO1 | Cycle times for HIV line items increased this quarter, to an average of 238 days overall. The increase was due to direct drop fulfillments; warehouse deliveries remained consistent with Q3. The main source of the increase was in PO processing time, which increased on average from 46 to 63 days for direct drop orders. The increase was seen across both GSC and DCP orders, as well as core product categories including ARVs and lab items.<br><br>(Note that TO1 results shown here include HIV/AIDS commodities and condoms. COVID-19 products are excluded from the TO1 total, but included in the project-wide "Total" and product-level detail. Additionally, please note that cycle times for the pick up and deliver segments exclude any deliveries shipped under C and D Incoterms. These deliveries are handled by suppliers, meaning that pick up dates are not relevant or available, and pick up/deliver segments cannot be calculated. Due to the large line item volume of these types of orders for TO1, the pick up and deliver segment data reported for TO1 direct drops represents only about 49 percent of all TO1 direct drops.) |
| TO2 | Average cycle times for malaria line items decreased slightly this quarter, averaging 334 days from order entry to delivery. Despite some small increases in segment times for clarifications and sourcing, reductions in manufacture, pick up, and delivery segments led to lower cycle times over all. Reductions in delivery time in particularly may be due to an increased proportion of line items shipped by air (47 percent in Q4, compared to only 37 percent in Q3).<br><br>Average QA cycle time for TO2 line items was 34 days, a reduction from 41 days in Q3. |
| TO3 | Cycle time for warehouse fulfillments fell to an average of 248 days this quarter, just below the target of 250 days. The main drivers was a reductions in RO clarifications and planning and DO processing time. (Note that missing data for manually entered clarifications milestones prevented an accurate breakdown of clarifications and planning segments; they are presented here in aggregate to ensure accurate, if less granular, results).<br><br>Cycle time for direct drop line items increase this quarter, rising to 276 days. These increases were due to longer segment times for both early stage processing and delivery. Ninety percent of direct drop line items were shipped by sea this quarter, a significant increase in the share of ocean deliveries from the previous quarter (26 percent in Q3). |
| TO4 | Cycle time for task order 4 deliveries fell this quarter, from 457 days to 369 on average. This represents a return to levels more consistent with past delivery performance, following exceptional customs circumstances impacting many orders in Q3. This quarter, about half of the delivered line items were for DRC, which has longer cycle times exceeding 400 days. For the remaining deliveries to Liberia, Haiti, Ecuador, end-to-end cycle times averaged only 287 days. |

### Data notes

Quarterly indicator targets are effective beginning FY2018 Q4.

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

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

# Cycle Time Performance

Current Reporting Period

2020-Q4

## 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 | Multiple | Sea | Air | Land | Sea | |
| **TO1** | **156** | **191** | **525** | **298** | **245** | **283** | **211** | **180** |
| Adult ARV | 325 | | 452 | 263 | 265 | 261 | 253 | **288** |
| Condoms | | | | 296 | | | 176 | **261** |
| COVID19 | 67 | 44 | | | | | | **66** |
| Laboratory | 244 | 188 | | 341 | | | | **220** |
| Other Non-Pharma | 179 | 204 | | 418 | | | | **209** |
| Other Pharma | 153 | 166 | | 262 | | | | **166** |
| Other RTK | 360 | | | | | | | **360** |
| Pediatric ARV | 278 | 282 | 598 | 468 | 225 | 314 | 271 | **302** |
| TB HIV | 200 | | | 241 | 198 | | | **209** |
| VMMC | | 376 | | 243 | | | | **251** |
| **TO2** | **356** | **303** | **714** | **321** | **174** | | | **334** |
| ACTs | 339 | 285 | 714 | 317 | 126 | | | **319** |
| Laboratory | 360 | | | | | | | **360** |
| LLINs | | 342 | | 343 | | | | **343** |
| mRDTs | 361 | | | 320 | | | | **341** |
| Other Non-Pharma | 367 | | | 277 | | | | **362** |
| Other Pharma | 511 | | | | 303 | | | **442** |
| Severe Malaria Meds | 281 | | | 328 | | | | **318** |
| SMC | | | | 233 | 285 | | | **239** |
| SP | | | | 329 | | | | **329** |
| **TO3** | **274** | | | **277** | **298** | | **227** | **263** |
| Combined Oral Contraceptives | | | | 302 | 262 | | 241 | **267** |
| Copper-Bearing Intrauterine Devices | | | | | 259 | | | **259** |
| Implantable Contraceptives | 235 | | | 334 | 376 | | 540 | **347** |
| Injectable Contraceptives | | | | 221 | 193 | | 193 | **204** |
| Other Non-Pharma | | | | 220 | | | | **220** |
| Other RTK | 354 | | | | | | | **354** |
| Progestin Only Pills | | | | | 466 | | 258 | **362** |
| Standard Days Method | | | | 333 | | | | **333** |

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

| Fulfillment Channel | Direct Drop Fulfillment | | Total |
|---|---|---|---|
| Product Category | Air | Sea | |
| Laboratory | 460 | | **460** |
| Other Non-Pharma | | 261 | **261** |
| Other Pharma | 344 | 367 | **365** |
| Other RTK | 323 | | **323** |
| **Total** | **407** | **358** | **369** |

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

Quarterly indicator targets are effective beginning FY2018 Q4.

## 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** | **52** | **2** | **46** | | **53** | **28** | **32** |
| TO1 | 35 | 2 | 50 | | 52 | 20 | 23 |
| TO2 | | 3 | 23 | | 57 | 56 | 49 |
| TO3 | | 1 | 50 | | 34 | 23 | 89 |
| TO4 | 88 | 5 | 47 | | 91 | 47 | 98 |
| **Warehouse fulfillment** | **59** | **4** | **107** | **40** | **4** | **43** | **37** |
| TO1 | 49 | 3 | 131 | 36 | | | 30 |
| TO2 | | 1 | 6 | 40 | 4 | 43 | 34 |
| TO3 | | 11 | 35 | 53 | | | 59 |
| **Total** | **53** | **2** | **51** | **70** | | | **32** |

# Quality Assurance Performance (TO2 only)

Current Reporting Period: 2020-Q4

## A2. QA processes completed within required lead times

| Task Order | Total # of QA processes completed | % QA Processes On Time | A2 Target |
|---|---|---|---|
| **TO2** | **90** | **97%** | **80%** |
| ACTs | 41 | 100% | 80% |
| LLINs | 22 | 86% | 80% |
| mRDTs | 17 | 100% | 80% |
| Other Pharma | 1 | 100% | 80% |
| Severe Malaria Meds | 2 | 100% | 80% |
| SMC | 0 | | 80% |
| SP | 7 | 100% | 80% |

## A13. Out-of-specification percentage

| Task Order | Total # of batches tested | Out-of-specification percentage | A13 Target |
|---|---|---|---|
| **TO2** | **319** | **2.5%** | **1%** |
| ACTs | 141 | 0.0% | 1% |
| LLINs | 70 | 2.9% | 1% |
| mRDTs | 69 | 0.0% | 1% |
| Other Pharma | 1 | 0.0% | 1% |
| Severe Malaria Meds | 21 | 28.6% | 1% |
| SMC | 0 | | 1% |
| SP | 17 | 0.0% | 1% |

## A15. QA investigation report submission

| Task Order | # of reports due | Report submissions | A15 Target |
|---|---|---|---|
| **TO2** | **8** | **100%** | **90%** |
| ACTs | 1 | 100% | 90% |
| LLINs | 4 | 100% | 90% |
| mRDTs | 0 | | 90% |
| Other Non-Pharma | | | |
| Other Pharma | 0 | | 90% |
| Severe Malaria Meds | 3 | 100% | 90% |
| SMC | 0 | | 90% |
| SP | 0 | | 90% |

### 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.

| Ref | Analysis |
|---|---|
| A02 | For QA processes not impacted by delays due to COVID-19, QA labs maintained and improved upon strong performance, reaching 97 percent completion within estimated lead times. Proactive strategies to mitigate COVID-19 constraints have contributed to this high performance, including implementation of randomization of testing based on risk, determined by historical testing outcomes and commodity type.<br><br>The result shown here excludes QA processes that did experience pandemic-related delays outside the control of the QA lab service provider. Twenty out of a total of 110 processes in Q4 experienced this type of delay. With these instances included, the COVID-impacted results for Q4 was 79% of QA process completed within the estimated lead time. |
| A13 | A total of eight batches yielded out-of-specification findings this quarter, for rate of 2.5%. Two of the findings were for LLINs and the remaining six were for severe malaria medicines. A review of quality management procedures at both suppliers resulted in the identification of corrective and preventive actions (CAPAs) for the suppliers to implement going forward. Both suppliers have been deemed ineligible by GHSC-PSM QA until the CAPAs are implemented. |
| A14b | Performance for QA lab vendors ticked up to 90 percent, driven by improvements to completeness of documentation and invoice accuracy. However, there was a decline in responsiveness of labs this quarter to confirm receipt of samples for analysis, which also reflected in the service scores which were slightly down. As with last quarter, pandemic delay codes were applied this quarter. This allowed labs to be rated on-time in the case of pandemic-related delays, in acknowledgement that these delays are outside of their control and in alignment with other measures of project and vendor on-time performance. |
| A15 | All QA investigation reports due to USAID in Q4 were completed and submitted on time. The team continues to diligently investigate nonconformities and seek PMI concurrence on investigation outcomes. |

# Warehouse Performance and Product Losses

Current Reporting Period

2020-Q4

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

| Task Order | Country | Type of Loss | Product Group | Loss Value | Loss Denominator | % Loss |
|---|---|---|---|---|---|---|
| TO1 | RDC | Damage | Adult ARV | $47 | $17,157,673 | 0.00% |
| TO1 | Tanzania | Damage | Adult ARV | $21,453 | $9,932,314 | 0.22% |
| TO1 | RDC | Damage | Condoms | $67 | $17,157,673 | 0.00% |
| TO1 | RDC | Damage | Pediatric ARV | $4,471 | $187,494,608 | 0.00% |
| TO2 | RDC | Damage | SMC | $954 | $6,101,666 | 0.02% |
| TO2 | RDC | Damage | SMC, Severe malaria medicines | $477 | $3,050,833 | 0.02% |
| TO2 | RDC | Expiry | ACTs | $43 | $281,688 | 0.02% |
| TO1 | RDC | Expiry | Adult ARVs | $114,180 | $22,155,538 | 0.52% |
| TO3 | RDC | Expiry | NA | $0 | $7,654,656 | 0.00% |
| TO1 | RDC | Missing product | Adult ARV | $763 | $40,271,111 | 0.00% |
| TO1 | Tanzania | Missing product | Condoms | $134 | $9,932,314 | 0.00% |
| TO2 | Uganda | Missing product | LLINs | $125 | $52,140,583 | 0.00% |
| TO1 | RDC | Missing product | Pediatric ARV | $10,512 | $40,271,111 | 0.03% |
| TO1 | Nigeria | Other | ARVs | $82,554 | $16,398,734 | 0.50% |

## A8. Shelf life remaining

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

| Ref | Analysis |
|---|---|
| A08 | Average shelf life remaining for HIV items rose to 82 percent this quarter, with the rapid distribution of TLD commodities, especially 90-tablet bottles for MMD. |
| A08 | Overall shelf life remaining for family planning items fell slightly, to 80 percent. This is still in line with the target of 78 percent. |
| A08 | Shelf life remaining for items in the ACT stockpile fell slightly this quarter, to 80 percent. This is still in line with the 70 percent target. |
| C07a | There was a minimal expiry of some ACTs this quarter, representing less than one tenth of one percent of closing inventory for the quarter. |
| C07a | There was a minimal expiry of some adult ARVs this quarter. The expired items were part of a shipment rejected by the original destination country and routed to the RDC at the request of the USAID COR. Much of this shipment was reallocated for other countries, but the remainder has now expired. The expiry represented less than one percent of the closing inventory balance for the quarter. |
| C07a | There was no expiry of family planning products this quarter. |
| C07b | The most common forms of product loss continue to be damage or discrepancies that occur during transit through the global supply chain, which affect relatively small proportions of GHSC-PSM's order volume. These types of losses are typical for large supply chain operations. No losses this quarter exceeded 1 percent of the value of commodities shipped for the task order in the quarter of the loss. |

## 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

2020-Q4

## A10. Framework contract percentage

| Task Order | Procurement total | Framework contract percentage | Framework contract target |
|---|---|---|---|
| TO1-HIV | $180,509,222 | 93% | 85% |
| TO2 | $56,608,632 | 83% | 85% |
| TO3 | $8,362,231 | 100% | 95% |
| TO4 | $1,227,266 | 100% | 75% |
| **Total** | **$347,596,445** | **94%** | **NA** |

## A10. Product-level detail

| Task Order | Framework contract percentage | Procurement total |
|---|---|---|
| **TO1** | **96%** | **$281,398,316** |
| Adult ARV | 99% | $131,507,295 |
| Condoms | 100% | $4,719,584 |
| COVID19 | 99% | $100,808,094 |
| Laboratory | 62% | $27,779,574 |
| Other Non-Pharma | 25% | $386,749 |
| Other Pharma | 100% | $1,893,176 |
| Other RTK | 0% | $7,000 |
| Pediatric ARV | 100% | $10,994,343 |
| TB HIV | 100% | $2,672,620 |
| VMMC | 100% | $629,881 |
| **TO2** | **83%** | **$56,608,632** |
| ACTs | 100% | $8,502,272 |
| Laboratory | 99% | $357,903 |
| LLINs | 84% | $33,557,765 |
| mRDTs | 62% | $11,432,455 |
| Other Non-Pharma | 100% | $85,690 |
| Other Pharma | 100% | $52,332 |
| Severe Malaria Meds | 100% | $2,530,416 |
| SP | 100% | $89,800 |

## A10. Product-level detail

| Task Order | Framework contract percentage | Procurement total |
|---|---|---|
| **TO3** | **100%** | **$8,362,231** |
| Combined Oral Contraceptives | 100% | $1,248,062 |
| Copper-Bearing Intrauterine Devices | 100% | $25,137 |
| Implantable Contraceptives | 100% | $3,943,038 |
| Injectable Contraceptives | 100% | $2,939,078 |
| Other Non-Pharma | 100% | $105,411 |
| Other RTK | 100% | $33,680 |
| Progestin Only Pills | 100% | $67,824 |
| **TO4** | **100%** | **$1,227,266** |
| Other Non-Pharma | 100% | $44,484 |
| Other Pharma | 100% | $1,182,782 |

## Analysis

Procurements for maternal, newborn, and child health commodities included essential medicines (including oxytocin, chlorhexidine gel, amoxicillin, gentamicin, and magnesium sulphate, among others) for Nigeria, Liberia, and Mali, and medical supplies for Nigeria (IV catheters and syringes). GHSC-PSM maintains basic ordering agreements with wholesalers for these items.

Task Order 1 reached its highest proportion of framework contract purchasing to date, at 93 percent. Use of framework contracts for core HIV commodities (Adult and pediatric ARVs, condoms, TPT, VMMC, and other pharma) remains at or near 100 percent. For lab commodities, performance is consistent with the previous quarter, at 62 percent.

(Note that procurement totals shown here include HIV/AIDS commodities and condoms. COVID-19 products are excluded from the TO1 total, but included in the project-wide "Total" and product-level detail).

Task Order 2 reached its highest proportion of framework contract purchasing to date, at 83 percent. Use of framework contracts for LLINs reached 84 percent, a significant increase from the previous peak (53 percent in Q2) and the outcome of a targeted strategy to implement IDIQs for these products. Rapid diagnostic tests, previously procured fully under framework contracts, fell to a rate of 42 percent this quarter.

TO3 continues to procure all items under framework contracts, per the sourcing strategy for these commodities.

## 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** | **13.5%** | **222** |
| ACTs | 27.0% | 74 |
| Laboratory | 0.0% | 40 |
| LLINs | 0.0% | 37 |
| mRDTs | 5.6% | 18 |
| Other Non-Pharma | 0.0% | 17 |
| Severe Malaria Meds | 0.0% | 14 |
| SP | 50.0% | 10 |
| SMC | 22.2% | 9 |
| Other Pharma | 66.7% | 3 |
| **TO3** | **8.6%** | **58** |
| Injectable Contraceptives | 8.7% | 23 |
| Combined Oral Contraceptives | 20.0% | 10 |
| Standard Days Method | 0.0% | 9 |
| Implantable Contraceptives | 14.3% | 7 |
| Other Non-Pharma | 0.0% | 4 |
| Copper-Bearing Intrauterine Devices | 0.0% | 2 |
| Progestin Only Pills | 0.0% | 2 |
| Other RTK | 0.0% | 1 |
| **Total** | **12.5%** | **280** |

### Analysis

The project used registration waivers for 8.6 percent of line items delivered this quarter. Three of the five line items were for Haiti, which does not have a functional registration agency in-country. Any unregistered products will continue to require the use of waivers, as new registrations cannot be processed. Other uses of waivers included oral contraceptives for Mozambique and injectables for Angola. As always, GHSC-PSM and GHSC-QA work strategically to communicate USAID priorities and forecast demand to help vendors target their registration efforts, but the need to use occasional waivers is likely to continue.

Registration waiver were required for 13.5 percent of line items this quarter. While waivers were used across several product categories, as is typical, the increase this quarter was driven by ACTs. The largest share of these was for Senegal, where the project shipped eight line items from a supplier whose registration is still in process. Waivers were also used for Burundi, Cameroon, Guinea, Liberia, Mozambique, and Sierra Leone.

# Supply Plan Submissions

Current Reporting Period

2020-Q4

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

| Product Group | # of supply plans required | Supply plan submission rate | Submission target |
|---|---|---|---|
| ARVs | 21 | 100% | 90% |
| Condoms | 21 | 100% | 85% |
| FP commodities | 21 | 100% | 90% |
| Lab (HIV diagnostics) | 15 | 93% | 90% |
| Malaria commodities | 29 | 100% | 85% |
| RTKs | 18 | 100% | 90% |
| TPT | 14 | 86% | |
| VMMC | 6 | 83% | 80% |
| **Total** | **145** | | |

### Analysis

Supply plan submissions for family planning commodities and condoms remained strong this quarter, with 100 percent of supply plans submitted for both FP and condoms.

Submission rates for HIV supply plans have remained strong across product groups, with 100 percent submissions on ARVs, RTKs, and condoms. Lab commodities and VMMC both had one missing plan, and TPT had two. All missed submissions were from non-field office countries.

Malaria supply plans submissions rose to 100 percent this quarter, with all 29 submissions received.

# Supply Plan and Forecast Performance

Current Reporting Period

2020-Q4

## 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 | 22% | 1% | 10% | 26% | 6% |
| Condoms | 31% | 10% | 13% | 32% | 9% |
| Laboratory | 25% | 11% | 24% | 28% | 24% |
| Pediatric ARV | 41% | -13% | 12% | 26% | -1% |

## 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 | 142% | -142% | 140% | 35% | -140% |
| mRDTs | 28% | -28% | 28% | 35% | -28% |

## 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 | 14% | 14% | 4% | 30% | 4% |
| Copper-bearing Intrauterine Devices | 0% | 0% | 18% | 30% | -18% |
| Implantable Contraceptives | 14% | 14% | 2% | 30% | 2% |
| Injectable Contraceptives | 35% | 35% | 4% | 30% | 4% |
| Progestin Only Pills | 0% | 0% | 0% | 30% | 0% |

## Analysis

Supply plan error for mRDTs improved this quarter, falling to only 28 percent error.

Supply plan error for condoms shrank to 7 percent this quarter, a recovery after wider variance in the previous quarter. On the four-quarters rolling metric, error increased after four consecutive quarters of positive bias, with no counterbalancing negatives. Orders placed with short lead times before the requested delivery dates continues to be the main cause of forecast error for condoms. In one instance this quarter, a planned order for Senegal was pulled up from December to September.

Negative supply plan bias for ACTs continues to be driven by low ordering for ASAQ. No orders for ASAQ were requested this quarter. AL orders were also lower than planned. Some countries are overstocked and therefore did not end up requesting deliveries this period. In Rwanda, for instance, has seen fewer cases this year than expected during forecasting and has therefore not needed additional shipments.

Lab supply plan error improved slightly, falling from 35 percent in Q3 to 26 percent in Q4.

Forecast error for implants, combined oral contraceptives, progestin-only pills, copper-bearing IUDs, and condoms remained excellent this quarter, preforming under 15 percent error for the reporting period. For some items, such as progestin-only pills and copper-bearing IUDs, the project achieved zero percent error. These items tend to have smaller volumes and little movement and are therefore easier to track. They also do not have the supply challenges that the FP market has seen for products like injectables and implants, which also contributes to forecast consistency. Another helpful factor for forecast accuracy is the "state of the supply" messages that GHSC-PSM and have worked on USAID on since March, during the pandemic. These messages are distributed to all USAID missions quarterly, detailing supply situations and giving instructions for ordering supply-constrained products. This helps countries plan more effectively.

Injectables did see a more elevated quarter of forecast error, reaching 35 percent, with requested quantities exceeding the forecast. This has been due mainly to global-level decisions about allocating limited quantities of branded DMPA-IM to countries that would have challenges in accepting the generic. Changes made in coordination between the global supply chain and the field offices resulted in variance from some plans.

For both adult and pediatric ARVs, requested orders were short of supply plans for the second quarter in a row, and at a growing rate. This negative forecast bias can be attributed to the rapid acceleration of TLD and other ARV distributions in the context of the COVID-19 pandemic. PEPFAR and many countries sought to distribute supplies as quickly as possible, both to mitigate against future uncertainty during the pandemic and to ensure that patients can receive multiple months of ARV supply in a single clinic visit, thus reducing their potential COVID-19 exposure. Many orders that were planned for Q4 were pulled forward to earlier dates in FY2020. For example, Nigeria TLD orders were pulled forward to Q3 and as early as FY2020 Q2 this year. Given the quantities at play, this has resulted in a two quarters of negative forecast bias for adult ARVs.

# Total Landed Cost

Current Reporting Period

2020-Q4

## A5. Total Landed Costs

| Task Order | Total Landed Cost (Freight and Logistics) | TLC Target | Delivery Total | Total Landed Cost (Freight, Logistics, and HQ Operations) |
|---|---|---|---|---|
| TO1 | 6.2% | 10% | $651,407,269 | 10.2% |
| TO2 | 22.8% | 30% | $144,411,182 | 29.0% |
| TO3 | 11.3% | 15% | $44,318,772 | 23.7% |
| TO4 | 22.4% | 30% | $5,781,115 | 38.9% |
| **Total** | **9.4%** | **17%** | **$845,918,338** | **14.3%** |

## A5. Cost Breakdown

| Cost Type | TO1 | TO2 | TO3 | TO4 | **Total** |
|---|---|---|---|---|---|
| **Freight and Logistics** | **$40,465,151** | **$32,866,106** | **$5,029,556** | **$1,292,528** | **$79,653,341** |
| Country-specific Logistics | $4,924,059 | $270,148 | $747,092 | $29,632 | **$5,970,931** |
| Demurrage | ($57,938) | $67,302 | $9,219 | $54,141 | **$72,723** |
| Drop Ship Freight | $23,273,770 | $29,374,929 | $1,356,967 | $1,191,386 | **$55,197,052** |
| Inbound Freight | $2,449,994 | $496,610 | $247,954 | | **$3,194,558** |
| Insurance | $680,486 | $261,659 | $76,553 | ($6,567) | **$1,012,131** |
| Loss | $14,081 | $0 | $439 | | **$14,520** |
| Outbound Freight | $7,298,754 | $2,015,156 | $2,205,146 | $7,060 | **$11,526,116** |
| Security | $331,374 | $186,236 | $36,293 | | **$553,904** |
| Warehousing | $1,550,571 | $194,066 | $349,894 | $16,876 | **$2,111,407** |
| **HQ Operations** | **$26,261,208** | **$8,993,488** | **$5,482,629** | **$954,421** | **$41,691,747** |
| Forecasting and Supply Planning | $4,487,378 | $1,677,931 | $1,449,357 | $127,014 | **$7,741,680** |
| GS1 | $1,138,269 | $629,004 | $215,821 | $40,208 | **$2,023,302** |
| MIS | $3,004,636 | $1,572,642 | $2,095,117 | $97,629 | **$6,770,023** |
| Monitoring and Evaluation | $3,722,585 | $2,501,697 | $642,952 | $211,270 | **$7,078,504** |
| Procurement | $12,229,894 | $2,402,153 | $982,079 | $404,365 | **$16,018,491** |
| Warehousing and Distribution | $1,678,446 | $210,062 | $97,303 | $73,936 | **$2,059,747** |
| **Total** | **$66,726,359** | **$41,859,595** | **$10,512,186** | **$2,246,949** | **$121,345,088** |

## Analysis

Task Order 1 results appear to show continued improvement on this metric, with freight and logistics costs falling to 6.2 percent of the value of commodities delivered. The project did have a significant surge in deliveries, with total value delivered growing by more than a third compared to FY2019. This was most heavily driven by $119 million in deliveries of COVID19 items, as well as a 24 percent increase in the value of ARVs delivered. While drop ship freight and country-specific logistics expenditures did increase along with deliveries, much of freight and logistics costs associated with this surge may not be represented in these figures. The time lag between delivery and invoice payment may be a more significant factor in this period than in the past. With the shift to all-spot tendering as pandemic conditions invalidated quoted rates, invoices are taking longer to compile, correct, approve, and pay. Cost quotes are also significantly higher on average than pre-pandemic rates. Given these conditions, the downward trend on this indicator is unlikely to be an accurate reflection of actual total landed costs in FY2020 and is unlikely to be sustained into FY2021.

Task Order 2 results appear to show continued improvement on this metric, with freight and logistics costs falling to 22.8 percent of the value of commodities delivered. While total expenditures for drop ship freight and country-specific logistics costs did fall, and while TO2 did continue to see savings from the shift to ocean shipping, much of freight and logistics costs associated with the latter part of FY2020 may not be represented in these figures, for the same reasons listed above for TO1.

Per agreement with USAID, quality assurance costs are not included in this indicator, since GHSC-PSM does not manage QA across all TOs. For TO2, where QA is managed by the project, the total landed cost (freight and logistics) with QA included increases to 23.7 percent. Total landed cost including HQ operations is 30.7 percent with QA included.

Task Order 3 results appear to show continued improvement on this metric, with freight and logistics costs falling to 11.3 percent of the value of commodities delivered. The total value of commodities delivered increased by 25 percent, driven by increased deliveries of high-value implants and injectables. At the same time, total expenditures for freight and logistics remained relatively consistent, leading to a decrease in the metric. The same caveats to these results apply.

Task Order 4 results showed a sharp drop on this metric, with freight and logistics costs falling to 22.4 percent of the value of commodities delivered. Overall delivery value fell as Zika shipments subsided in FY2020, with a subsequent fall in drop ship expenditures as well. That said, shipping of MNCH commodities did increase, including to DRC, a high-cost destination. Much of freight and logistics costs associated with the latter part of FY2020 may not be represented in these figures.

## Data notes

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

# Vendor Performance

Current Reporting Period

2020-Q4

## A14a-c. Average vendor rating score

| Vendor Type | Average vendor rating |
|---|---|
| Commodity Supplier | 77% |
| Freight Forwarder | NA |
| QA Lab | 90% |

## 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? | 96% | 48% | 46% |
| 2 - Responsiveness | Does the lab provide prompt response after receipt of GHSC-PSM request for testing | 72% | 15% | 11% |
| 3 - Completeness of Documentation | Frequency of modification to Certificates of Analysis (CoA) | 100% | 18% | 18% |
| 4 - Invoice Accuracy | Submitted invoices for routing testing adhere to set IDIQ pricing | 96% | 10% | 10% |
| 5 - Service | Adherence to other terms and conditions, not related to reliability, responsiveness, completeness, and cost (Qualitative) | 70% | 10% | 7% |
| **Total** | | | **100%** | **90%** |

### Analysis

Supplier OTIF decreased this quarter from 83 to 77 percent. Suppliers are still recovering from COVID-19 and managing rolling shutdowns, particularly in India as outbreaks occur in their plants. As in recent quarters, late orders affected by COVID-19 are counted as on-time through an acceptable supplier delay code. Almost half of the orders this quarter fell into this category.

Performance for QA lab vendors ticked up to 90 percent, driven by improvements to completeness of documentation and invoice accuracy. However, there was a decline in responsiveness of labs this quarter to confirm receipt of samples for analysis, which also reflected in the service scores which were slightly down. As with last quarter, pandemic delay codes were applied this quarter. This allowed labs to be rated on-time in the case of pandemic-related delays, in acknowledgement that these delays are outside of their control and in alignment with other measures of project and vendor on-time performance.

An overall freight forwarder vendor rating score again cannot be reported this quarter, due to the absence of the customer service assessment. This has been on hold due to the increased demands on both the GHSC-PSM Deliver/Return team and the 3PLs during the pandemic. The team aims to conduct the survey in January. Without this data, performance cannot be fully assessed. However, data from other aspects of the scorecard is available. In the categories of EDI status performance, on-time performance, on-time spot quote turnaround, booking timeliness, and rate of deliveries without non-compliance reports (NCRs), freight forwarder performance has remained strong, with achievement greater than 80 percent on each criterion. EDI timeliness has declined slightly, and ETA destination port reliability improved but remains low due to the uncertainty of transit times during the COVID pandemic. Invoicing accuracy improved since last quarter due to efforts to prioritize the most significant invoicing errors and due to a new rate procurement module of Nexus being rolled out by Kuehne + Nagel.

### Data notes

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

# Global Advocacy Engagements

Current Reporting Period

2020-Q4

## Crosscutting

3

| Name of Engagement | Description |
|---|---|
| Health and Humanitarian Logistics Conference (HHLC) 2020 | During this year's virtual HHLC, taking place September 29-October 1, two GHSC-PSM initiatives were highlighted during joint oral presentations. GHSC-PSM Pakistan Country Director, Dr. Mohammad Tariq, presented on the advanced analytics tools used to track and ensure availability of health commodities during COVID-19. HQ's Health Systems Strengthening team also presented on a tool used to model multi-month dispensing scenarios of HIV/AIDS commodities, to support countries shifting to MMD during COVID-19. |
| International AIDS Society's (IAS) COVID-19 Conference | The IAS followed up its biannual AIDS conference with a COVID-19-focused virtual conference this year, held July 10-11. The project presented two posters, on Nigeria's HIV lab commodity transportation network and on Pakistan's COVID-19 response. |
| Africa Supply Chain in Action Conference | This conferece, held August 18-19, virtually, hosted nearly 1,000 participants from across the globe to discuss how COVID-19 has impacted the humanitarian supply chain in Africa. Our GHSC-PSM Angola Country Director, Ladi Stephens, presented on "Crossing Supply Chain Barriers During the COVID-19 Pandemic Through Innovative Redesign and Partnerships: The Angola Public Health Supply Chain Experience." |

## HIV/AIDS

1

| Name of Engagement | Description |
|---|---|
| AIDS 2020 Conference | This biannual AIDS 2020 Conferencewas held this year from July 6-10, virtually. The conference hosts thousands of participants to discuss a range of HIV/AIDS topics. GHSC-PSM was accepted to present on End-to-End Data Visiblity for HIV/AIDS commodtities, showcasing the global, warehouse, and site-level data collected and analyzed by GHSC-PSM. |

# Global Advocacy Engagements

Current Reporting Period

2020-Q4

## Malaria

4

| Name of Engagement | Description |
|---|---|
| Supplier/Joint Donor Collaboration Meetings | Due to new operational constraints with an RDT supplier as a result of Covid-19, weekly joint collaboration calls were established and held with the supplier, which included participation from global donors (PMI, GHSC-PSM, UNICEF, and TGF) to prioritize the production and packaging of orders in order to minimize impact to recipient Countries. |
| QA collaboration with global donors | Due to RDT market constraint, and the strategy of widening/diversifying the supplier base, in Q3 and Q4 of FY2020, the project and the Global Fund developed a proposal for quality requirements needed to re-engage an mRDT supplier. The project also partnered with the Global Fund to develop and implement a plan to ensure safety and efficacy of future procurements, which included technical guidance to mitigate risk and impact to supply chains in the current constrained RDT market. |
| TraceNet Working Group | In January 2020, GHSC-PSM published the Recommended Identification, Capture, and Data Sharing Specifications for Long Lasting Insecticidal Nets document, which includes a phased implementation timeline between 2020 and 2022. Since publication, GHSC-PSM has been closely coordinating with Global Fund's procurement agent for long-lasting insecticide-treated nets (LLINs), IDA Foundation, to take the next steps in supporting suppliers in implementation. In Q3, the TraceNet working group finalized an Attribute Guide for LLINs in collaboration with PMI, Global Fund, and IDA Foundation. Under the working group the project co-hosted an ongoing series of webinars, alongside GS1 and Global Fund's procurement agent, IDA Foundation, to educate and enable suppliers as they work toward compliance. |
| WHO sponsored Global COVID-19 Task Forces | The TO2 procurement team and other key members of the TO2 team participate in biweekly meetings for Pharma, ITNs and RDTs. The virtual meetings bring together key stakeholders from WHO, UNICEF, CHAI, PMI, GHSC-PSM and Global Fund and other malaria stakeholders to discuss disruptions to the markets due to COVID-19. Through these meetings, we have gained an understanding of issues with key suppliers, starting materials, and orders. Additionally, meetings have led to the creation of smaller working groups to address specific issues related to our key markets. |

# Global Advocacy Engagements

Current Reporting Period

2020-Q4

## Family Planning and Reproductive Health

6

| Name of Engagement | Description |
|---|---|
| Coordinated Supply Planning (CSP)/Consensus Planning Group (CPG) Meeting | GHSC-PSM as part of the CSP Group now called CPG under the umbrella of GFPVAN, continued to meet monthly in Q4 with the other organizations in this group (UNFPA, USAID, JSI, CHAI, RHSC, and BMGF) to transition CSP, PPMR, and CARhs processes to the CPG where the main activity of reviewing country stock levels and coordinating responses to potential stockout, overstock, and any other risks posed to the supply chain continued in a collaborative manner. |
| Dissemination of the 2019 Contraceptive Security Indicators survey results to partners | GHSC-PSM presented virtually to Track20 in April and UNFPA in August to discuss top-level survey findings and suggestions for data use, including how to navigate the online dashboard and new landing page. |
| Family Planning Expenditures Expert Advisory Meeting | In August, Avenir Health hosted a two-day virtual meeting to discuss the tracking of family planning expenditures. GHSC-PSM provided information on the 2019 Contraceptive Security Indicators Survey and discussed methodologies used by the project to gather expenditure data. The meeting was attended by several GHSC-PSM staff including the TO3 Director and M&E team members. |
| Global Family Planning Visibility and Analytics Network (GFPVAN) | In collaboration with the Reproductive Health Supplies Coalition (RHSC), GHSC-PSM organized a second joint kick-off meeting with new USAID/WARO points of contact in July. |
| Hormonal Intrauterine System (IUS) Technical Consultation and Hormonal IUS Access Group-Steering Committee calls | In Q3, GHSC-PSM continued to support increased access to hormonal IUS by participating in a two-day virtual Hormonal IUS Technical Consultation followed by a Hormonal IUS Access Group-Steering Committee call to discuss ongoing strategic donor initiatives to support increased access to the product. |
| Total Market Approach Working Group Meeting | In Q4, GHSC-PSM subcontractor IQVIA presented the results of the Kenya analysis to the Total Market Approach Working Group. The goal of this study was to evaluate the modern contraceptive landscape in Kenya through a supply chain focus. The analysis found that free distribution dominates the supply, and emergency contraception pills and combined oral contraceptive pills are the only methods that are distributed in a significant quantity in the private sector. Frequent stockouts identified in the public sector indicate that the public supply chain is fragile. Statistical analysis identified various changepoints to show how the private for-profit supply chain reacted to the disruption in the public sector caused by the national nurses' strikes in 2017. There was however no clear evidence that stockouts and resumption of distribution by the Kenya Medical Supplies Authority (KEMSA) had negative or positive effects on sales of modern contraceptives through for profit private sector wholesalers. Ultimately, from this analysis, we could infer that the current contribution of the private for-profit supply chain to contraceptive security in Kenya is somewhat limited. |

# Global Advocacy Engagements

Current Reporting Period

2020-Q4

## Maternal, Newborn, and Child Health

3

| Name of Engagement | Description |
|---|---|
| Annual Postpartum Hemorrhage Community of Practice (PPH COP) | In Q4, GHSC-PSM participated in and presented in the PPH COP from July 21-23. GHSC-PSM HQ and the Ghana field office shared advocacy related work on oxytocin quality with COP members. |
| Publication of "Oxytocin quality: evidence to support updated global recommendations on oxytocin for postpartum hemorrhage" in the Journal of Pharmaceutical Policy and Practice | In Q3, in collaboration with global partners--including WHO, UNFPA, Monash University, and Concept Foundation--published an evidence review on oxytocin quality. The purpose of this article have a go-to, peer reviewed document for field offices and other champions to use in conversations with ministries and other key stakeholders to improve oxytocin quality. |
| Reproductive Health Supplies Coalition's Maternal Health Supplies Caucus | GHSC-PSM TO4 continues to participate in the Maternal Health Supplies Caucus of the Reproductive Health Supplies Coalition on an on-going basis. |

# Complete Quarterly Results (TO1)

Reporting Period

2020-Q4

| | 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** | **86%** | **1,401** | **87%** | **1,436** | **7.0%** | **4,061** | **96%** | **$281,398,316** |
| Adult ARV | 90% | 122 | 97% | 120 | 0.9% | 440 | 99% | $131,507,295 |
| Condoms | 88% | 51 | 92% | 50 | 6.8% | 146 | 100% | $4,719,584 |
| COVID19 | 87% | 470 | 82% | 509 | 10.9% | 586 | 99% | $100,808,094 |
| Food and WASH | | | | | 0.0% | 1 | | |
| HIV RTK | | | | | 0.0% | 2 | | |
| Laboratory | 82% | 525 | 91% | 498 | 7.7% | 1,943 | 62% | $27,779,574 |
| Other Non-Pharma | 83% | 69 | 68% | 87 | 9.9% | 313 | 25% | $386,749 |
| Other Pharma | 100% | 18 | 80% | 25 | 6.1% | 115 | 100% | $1,893,176 |
| Other RTK | 0% | 4 | | | 0.0% | 17 | 0% | $7,000 |
| Pediatric ARV | 86% | 90 | 94% | 90 | 0.3% | 298 | 100% | $10,994,343 |
| TB HIV | 97% | 35 | 94% | 36 | 1.9% | 107 | 100% | $2,672,620 |
| Vehicles and Other Equipment | | | | | 33.3% | 3 | | |
| VMMC | 100% | 17 | 81% | 21 | 16.7% | 90 | 100% | $629,881 |
| **Total** | **86%** | **1,401** | **87%** | **1,436** | **7.0%** | **4,061** | **96%** | **$281,398,316** |

## 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 | 68% | -68% | 3% | 3% |
| Laboratory | 24% | 24% | 15% | 15% |
| Pediatric ARV | 47% | -47% | 2% | 2% |
| **A6b - Forecast Error** | | | | |
| Condoms | 7% | 7% | 15% | 15% |

## B6. Quarterly supply plan submissions

| Product Group | Supply plan submission rate | # of supply plans required |
|---|---|---|
| ARVs | 100% | 21 |
| Condoms | 100% | 21 |
| Lab (HIV diagnostics) | 93% | 15 |
| RTKs | 100% | 18 |
| VMMC | 83% | 6 |

## A3. Cycle time (average)

| Fulfillment Channel | Direct Drop Fulfillment | | | | Warehouse Fulfillment | | | Total |
|---|---|---|---|---|---|---|---|---|
| Task Order | Air | Land | Multiple | Sea | Air | Land | Sea | |
| **TO1** | **156** | **191** | **525** | **298** | **245** | **283** | **211** | **180** |
| Adult ARV | 325 | | 452 | 263 | 265 | 261 | 253 | **288** |
| Condoms | | | | 296 | | | 176 | **261** |
| COVID19 | 67 | 44 | | | | | | **66** |
| Laboratory | 244 | 188 | | 341 | | | | **220** |
| Other Non-Pharma | 179 | 204 | | 418 | | | | **209** |
| Other Pharma | 153 | 166 | | 262 | | | | **166** |
| Other RTK | 360 | | | | | | | **360** |
| Pediatric ARV | 278 | 282 | 598 | 468 | 225 | 314 | 271 | **302** |
| TB HIV | 200 | | | 241 | 198 | | | **209** |
| VMMC | | 376 | | 243 | | | | **251** |
| **Total** | **156** | **191** | **525** | **298** | **245** | **283** | **211** | **180** |

## 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 | Adult ARV | $47 | $17,157,673 | 0.00% |
| Tanzania | Damage | Adult ARV | $21,453 | $9,932,314 | 0.22% |
| RDC | Damage | Condoms | $67 | $17,157,673 | 0.00% |
| RDC | Damage | Pediatric ARV | $4,471 | $187,494,608 | 0.00% |
| RDC | Expiry | Adult ARVs | $114,180 | $22,155,538 | 0.52% |
| RDC | Missing product | Adult ARV | $763 | $40,271,111 | 0.00% |
| Tanzania | Missing product | Condoms | $134 | $9,932,314 | 0.00% |
| RDC | Missing product | Pediatric ARV | $10,512 | $40,271,111 | 0.03% |
| Nigeria | Other | ARVs | $82,554 | $16,398,734 | 0.50% |

## A8. Shelf life remaining

| % Shelf Life Remaining | Inventory Balance |
|---|---|
| 82% | $21,920,194 |

## Crosscutting indicators

### A14. Average vendor ratings

| Vendor Type | Average vendor rating |
|---|---|
| Commodity Supplier | 77% |
| Freight Forwarder | NA |

# Complete Quarterly Results (TO2)

Reporting Period

2020-Q4

| | 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** | **93%** | **222** | **97%** | **230** | **2.2%** | **801** | **13.5%** | **222** | **83%** | **$56,608,632** | **97%** | **90** | **2.5%** | **319** | **100%** | **8** |
| ACTs | 89% | 74 | 99% | 75 | 0.0% | 271 | 27.0% | 74 | 100% | $8,502,272 | 100% | 41 | 0.0% | 141 | 100% | 1 |
| Laboratory | 98% | 40 | 98% | 40 | 5.1% | 177 | 0.0% | 40 | 99% | $357,903 | | | | | | |
| LLINs | 95% | 37 | 95% | 38 | 0.8% | 122 | 0.0% | 37 | 84% | $33,557,765 | 86% | 22 | 2.9% | 70 | 100% | 4 |
| mRDTs | 100% | 18 | 100% | 23 | 9.0% | 67 | 5.6% | 18 | 62% | $11,432,455 | 100% | 17 | 0.0% | 69 | | 0 |
| Other Non-Pharma | 94% | 17 | 100% | 17 | 0.0% | 45 | 0.0% | 17 | 100% | $85,690 | | | | | | |
| Other Pharma | 67% | 3 | 100% | 3 | 0.0% | 7 | 66.7% | 3 | 100% | $52,332 | 100% | 1 | 0.0% | 1 | | 0 |
| Severe Malaria Meds | 100% | 14 | 93% | 15 | 3.8% | 52 | 0.0% | 14 | 100% | $2,530,416 | 100% | 2 | 28.6% | 21 | 100% | 3 |
| SMC | 67% | 9 | 78% | 9 | 0.0% | 38 | 22.2% | 9 | | | | 0 | | 0 | | 0 |
| SP | 100% | 10 | 100% | 10 | 0.0% | 22 | 50.0% | 10 | 100% | $89,800 | 100% | 7 | 0.0% | 17 | | 0 |
| **Total** | **93%** | **222** | **97%** | **230** | **2.2%** | **801** | **13.5%** | **222** | **83%** | **$56,608,632** | **97%** | **90** | **2.5%** | **319** | **100%** | **8** |

## A3. Cycle time (average)

| Fulfillment Channel | Direct Drop Fulfillment | | | | Warehouse Fulfillment | **Total** |
|---|---|---|---|---|---|---|
| Task Order | Air | Land | Multiple | Sea | Air | |
| **TO2** | **356** | **303** | **714** | **321** | **174** | **334** |
| ACTs | 339 | 285 | 714 | 317 | 126 | **319** |
| Laboratory | 360 | | | | | **360** |
| LLINs | | 342 | | 343 | | **343** |
| mRDTs | 361 | | | 320 | | **341** |
| Other Non-Pharma | 367 | | | 277 | | **362** |
| Other Pharma | 511 | | | | 303 | **442** |
| Severe Malaria Meds | 281 | | | 328 | | **318** |
| SMC | | | | 233 | 285 | **239** |
| SP | | | | 329 | | **329** |
| **Total** | **356** | **303** | **714** | **321** | **174** | **334** |

**Crosscutting indicators**

## A14. Average vendor ratings

| Vendor Type | Average vendor rating |
|---|---|
| Commodity Supplier | 77% |
| Freight Forwarder | NA |

## 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 | SMC | $954 | $6,101,666 | 0.02% |
| RDC | Damage | SMC, Severe malaria medicines | $477 | $3,050,833 | 0.02% |
| RDC | Expiry | ACTs | $43 | $281,688 | 0.02% |
| Uganda | Missing product | LLINs | $125 | $52,140,583 | 0.00% |

## 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 | 142% | -142% | 140% | -140% |
| mRDTs | 28% | -28% | 28% | -28% |

## B6. Quarterly supply plan submissions

| Product Group | Supply plan submission rate | # of supply plans required |
|---|---|---|
| Malaria commodities | 100% | 29 |

## A8. Shelf life remaining

| % Shelf Life Remaining | Inventory Balance |
|---|---|
| 80% | $281,688 |

## A14. Average vendor rating - QA labs

| Average vendor rating |
|---|
| 90% |

# Complete Quarterly Results (TO3)

Reporting Period

2020-Q4

## 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** | **95%** | **58** | **94%** | **54** | **0.4%** | **247** | **100%** | **$8,362,231** |
| Combined Oral Contraceptives | 90% | 10 | 90% | 10 | 0.0% | 53 | 100% | $1,248,062 |
| Copper-Bearing Intrauterine Devices | 100% | 2 | 100% | 2 | 0.0% | 5 | 100% | $25,137 |
| Emergency Oral Contraceptives | | | | | 8.3% | 12 | | |
| Implantable Contraceptives | 86% | 7 | 83% | 6 | 0.0% | 47 | 100% | $3,943,038 |
| Injectable Contraceptives | 96% | 23 | 95% | 21 | 0.0% | 81 | 100% | $2,939,078 |
| Other Non-Pharma | 100% | 4 | 100% | 4 | 0.0% | 9 | 100% | $105,411 |
| Other RTK | 100% | 1 | 100% | 1 | 0.0% | 1 | 100% | $33,680 |
| Progestin Only Pills | 100% | 2 | 100% | 1 | 0.0% | 23 | 100% | $67,824 |
| Standard Days Method | 100% | 9 | 100% | 9 | 0.0% | 16 | | |
| **Total** | **95%** | **58** | **94%** | **54** | **0.4%** | **247** | **100%** | **$8,362,231** |

## A7. Temporary Waiver Percentage

| Task Order | Temporary registration waiver percentage | Total # of line items delivered |
|---|---|---|
| **TO3** | **8.6%** | **58** |
| Combined Oral Contraceptives | 20.0% | 10 |
| Implantable Contraceptives | 14.3% | 7 |
| Injectable Contraceptives | 8.7% | 23 |
| Copper-Bearing Intrauterine Devices | 0.0% | 2 |
| Other Non-Pharma | 0.0% | 4 |
| Other RTK | 0.0% | 1 |
| Progestin Only Pills | 0.0% | 2 |
| Standard Days Method | 0.0% | 9 |
| **Total** | **8.6%** | **58** |

## A3. Cycle time (average)

| Fulfillment Channel | Direct Drop Fulfillment | | Warehouse Fulfillment | | **Total** |
|---|---|---|---|---|---|
| Task Order | Air | Sea | Air | Sea | |
| **TO3** | **274** | **277** | **298** | **227** | **263** |
| Combined Oral Contraceptives | | 302 | 262 | 241 | **267** |
| Copper-Bearing Intrauterine Devices | | | 259 | | **259** |
| Implantable Contraceptives | 235 | 334 | 376 | 540 | **347** |
| Injectable Contraceptives | | 221 | 193 | 193 | **204** |
| Other Non-Pharma | | 220 | | | **220** |
| Other RTK | 354 | | | | **354** |
| Progestin Only Pills | | | 466 | 258 | **362** |
| Standard Days Method | | 333 | | | **333** |
| **Total** | **274** | **277** | **298** | **227** | **263** |

## 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 | $7,654,656 | 0.00% |

## 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 | 14% | 14% | 4% | 4% |
| Condoms | 7% | 7% | 15% | 15% |
| Copper-bearing Intrauterine Devices | 0% | 0% | 18% | -18% |
| Implantable Contraceptives | 14% | 14% | 2% | 2% |
| Injectable Contraceptives | 35% | 35% | 4% | 4% |
| Progestin Only Pills | 0% | 0% | 0% | 0% |

## B6. Quarterly supply plan submissions

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

## A8. Shelf life remaining

| % Shelf Life Remaining | Inventory Balance |
|---|---|
| 80% | $7,126,067 |

## Crosscutting indicators

### A14. Average vendor ratings

| Vendor Type | Average vendor rating |
|---|---|
| Commodity Supplier | 77% |
| Freight Forwarder | NA |

# Complete Quarterly Results (TO4)

Reporting Period

2020-Q4

| | 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** | **90%** | **31** | **89%** | **36** | **0.0%** | **142** | **100%** | **$1,227,266** |
| Laboratory | 100% | 4 | | | 0.0% | 8 | | |
| Other Non-Pharma | 50% | 2 | 100% | 1 | 0.0% | 3 | 100% | $44,484 |
| Other Pharma | 96% | 24 | 89% | 35 | 0.0% | 130 | 100% | $1,182,782 |
| Other RTK | 0% | 1 | | | 0.0% | 1 | | |
| **Total** | **90%** | **31** | **89%** | **36** | **0.0%** | **142** | **100%** | **$1,227,266** |

## Crosscutting indicators

### A14. Average vendor ratings

| Vendor Type | Average vendor rating |
|---|---|
| Commodity Supplier | 77% |
| Freight Forwarder | NA |

### A3. Cycle time (average)

| Task Order | Direct Drop Fulfillment | **Total** |
|---|---|---|
| **TO4** | **369** | **369** |
| Laboratory | 460 | **460** |
| Other Non-Pharma | 261 | **261** |
| Other Pharma | 365 | **365** |
| Other RTK | 323 | **323** |
| **Total** | **369** | **369** |

# 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<br>For losses in storage: Average inventory balance (in USD) during the quarter | GHSC-PSM Continual Improvement system reports | Quarterly | Product losses due to incidents are reported only after the actual value of the loss has been determined, which may be later than the quarter in which the incident took place or was first reported to GHSC-PSM Continual Improvement. |

# Indicator Details

**Check out the GHSC-PSM IDIQ M&E Plan for complete details on all our indicators.**

## GHSC-BI&A Data Sharing Indicators

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

# Indicator Details

**Check out the GHSC-PSM IDIQ M&E Plan for complete details on all our indicators.**

## Total Landed Cost

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

## Global Advocacy Engagments

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

# Indicator Details

**Check out the GHSC-PSM IDIQ M&E Plan for complete details on all our indicators.**

## Delivery Impact Indicators

| Indicator Code | Name | Numerator | Denominator | Data Source(s) | Reporting frequency | Other Info |
|---|---|---|---|---|---|---|
| NA | Number of ACT treatments delivered | Sum of ACT treatments delivered to countries, where a treatment is equal to one blister strip | | ARTMIS | Quarterly | Includes malaria treatments delivered over the life of the project, with "full dose" based on WHO-recommended treatment guidelines. Specific medicines counted are limited to those used only for treatments, and not primarily as prophylaxis. Specifically, it includes Artemether/Lumefantrine, Artesunate/Amodiaquine, and 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. |