



Dissemination of the Ministry of Health 2023/24 Integrated Quantification Output. (Photo Credit: Joshua Musasizi, USAID/SSCS Activity)

IMPACT STORY

Strengthening Supply Chain Systems (SSCS) Activity

May 2024

Quantification as a driver towards improved availability of health commodities in Uganda

Background

The Ministry of Health, Uganda, in collaboration with central warehouses and other supply chain stakeholders, conducts annual quantification of health commodities to ensure that commodities are available in all health facilities. National Medical Stores (NMS) procures and distributes health commodities for public health facilities, whereas Joint Medical Store (JMS) procures and distributes to private, not-for-profit (PFNP) health facilities. Procurement service agents (PSAs) also procure health commodities for public and private health facilities.



Consignments of essential medicines and health supplies (EMHS) under delivery at the NMS following quantification (Photo Credit: Joshua Musasizi, USAID/SSCS Activity)

For over a decade, forecasting and supply planning was fragmented along the different health programs, resulting in inefficiencies and duplication of efforts in the coordination and allocation of resources. With the support of the USAID-funded Securing Ugandans' Right to Essential Medicines (Uganda SURE) Project, the Uganda Ministry of Health established the Quantification and Procurement Planning Unit (QPPU) in 2012. The QPPU provides a centralized place for forecasting national requirements and coordinating supply planning efforts. Although Uganda SURE helped the QPPU streamline procurement among partners, secure funding from the Global

Fund, and expand information availability, according to the [NMS FY2020/21 report](#), quantification was still being done in silos for various health programs and commodities.

With the support of the USAID/Uganda Strengthening Supply Chain Systems (SSCS) Activity implemented by Management Sciences for Health (MSH), the QPPU has continued coordinating forecasting and supply planning to optimize resource utilization and enhance skills transfer. USAID/SSCS Activity has also supported automation of quantification processes to improve overall visibility.

Approach

Quantification is a five-step process depicted in Figure 1. Quantification outputs rely on assumptions that are adhered to across all the levels of the supply chain.

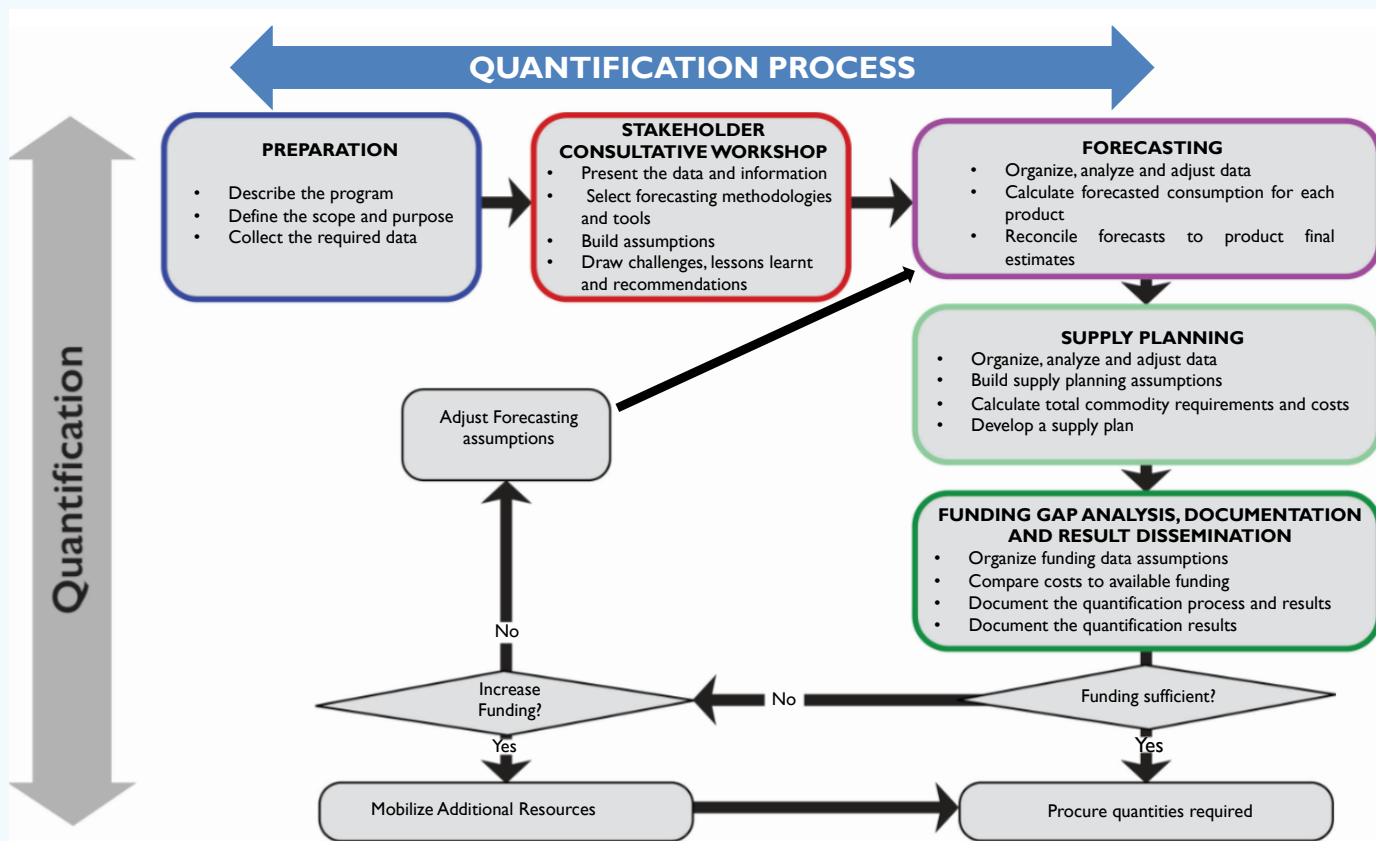


Figure 1: Step-by-step quantification process

Stakeholders Involved

The implementation was done with funding from USAID through SSCS Activity, Clinton Health Access Initiative (CHAI), Global Fund (GF), US President's Emergency Plan for AIDS Relief (PEPFAR), United Nations Children Fund (UNICEF), and United Nations Population Fund (UNFPA) as well as JMS and NMS.

The quantification exercise is highly consultative and collaborative involving multiple stakeholders at different stages (Figure 2) to estimate the national health commodity need and financing requirements to ensure uninterrupted service delivery.

Stakeholders need to regularly review the quantification assumptions and forecast due to the dynamic pharmaceutical sector environment that is influenced by:

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- Varied health program performance
- Shifts in program targets, priorities, and strategies
- Emergencies and introduction of new commodities and technologies
- Shifts in disease dynamics
- Changes in available funding

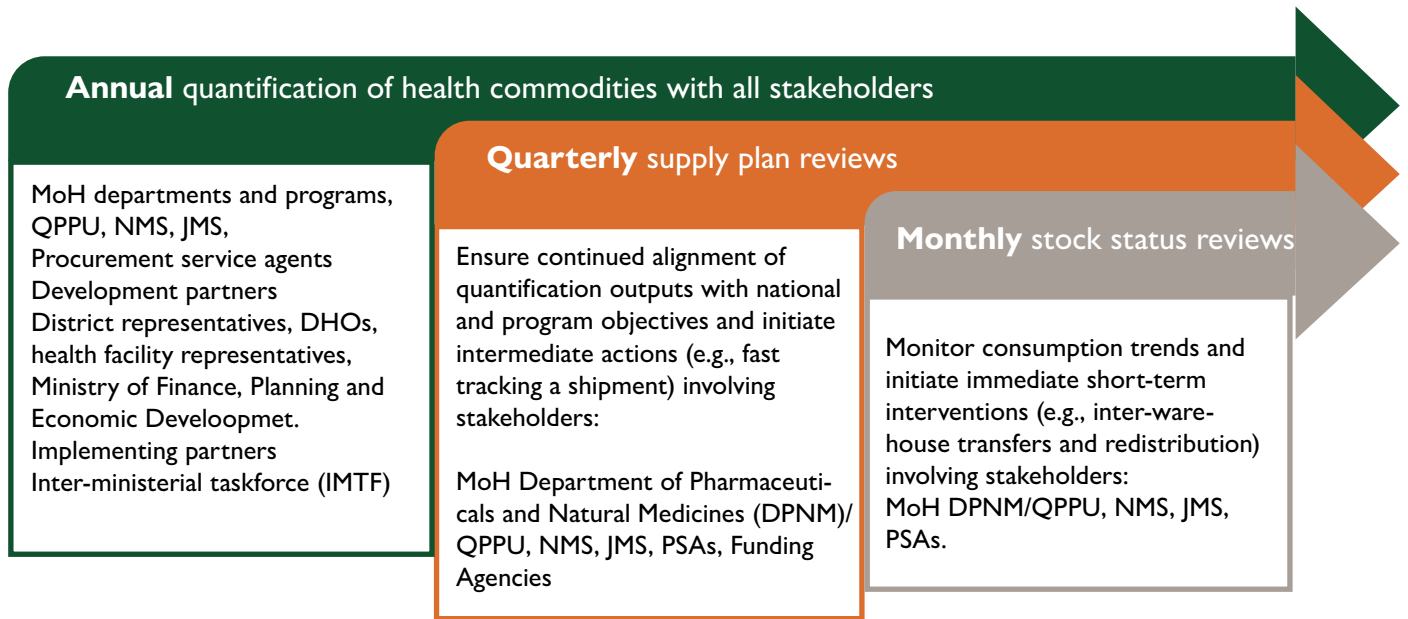


Figure 2: Stakeholders engaged in the reviews of the assumptions and forecast

Integrated Quantification

To address the challenges of health commodity quantification and planning in silos, the MOH, with technical assistance from the USAID/SSCS Activity and the Global Fund, developed a framework with seven underlying principles to guide the implementation of integrated commodity quantification in FY 2023/2024 (Figure 3).



Figure 3: Principles underlying integrated quantification

Quantification Tools

Several tools have previously been used in health commodity quantification as shown in Figure 4. The USAID/SSCS Activity adopted the Quantification Analytics Tool (QAT) developed under the USAID Global Health Supply Chain (GHSC) project – Procurement and Supply Management (PSM). QAT is an integrated tool that allows for forecasting and supply planning, simultaneous operation by multiple people and reduces forecasting errors through automation.

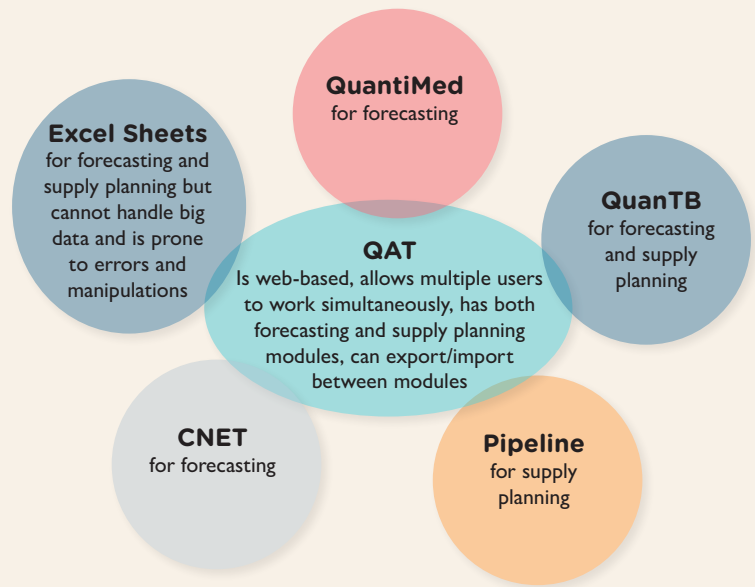


Figure 4: Quantification tools

Quantification Methods

In Uganda, two quantification methods are used based on several factors including availability and reliability of data, and the maturity of the programs being quantified for.

For EMHS for the public and PNFP sectors:

A consumption-based approach is used to forecast requirements for essential medicines and health supplies under the credit line in both public and

PNFP sectors through the annual procurement planning exercise.

For health program commodities:

Morbidity-based forecasting is used for health program commodities to estimate needs for prevention, diagnosis and treatment.

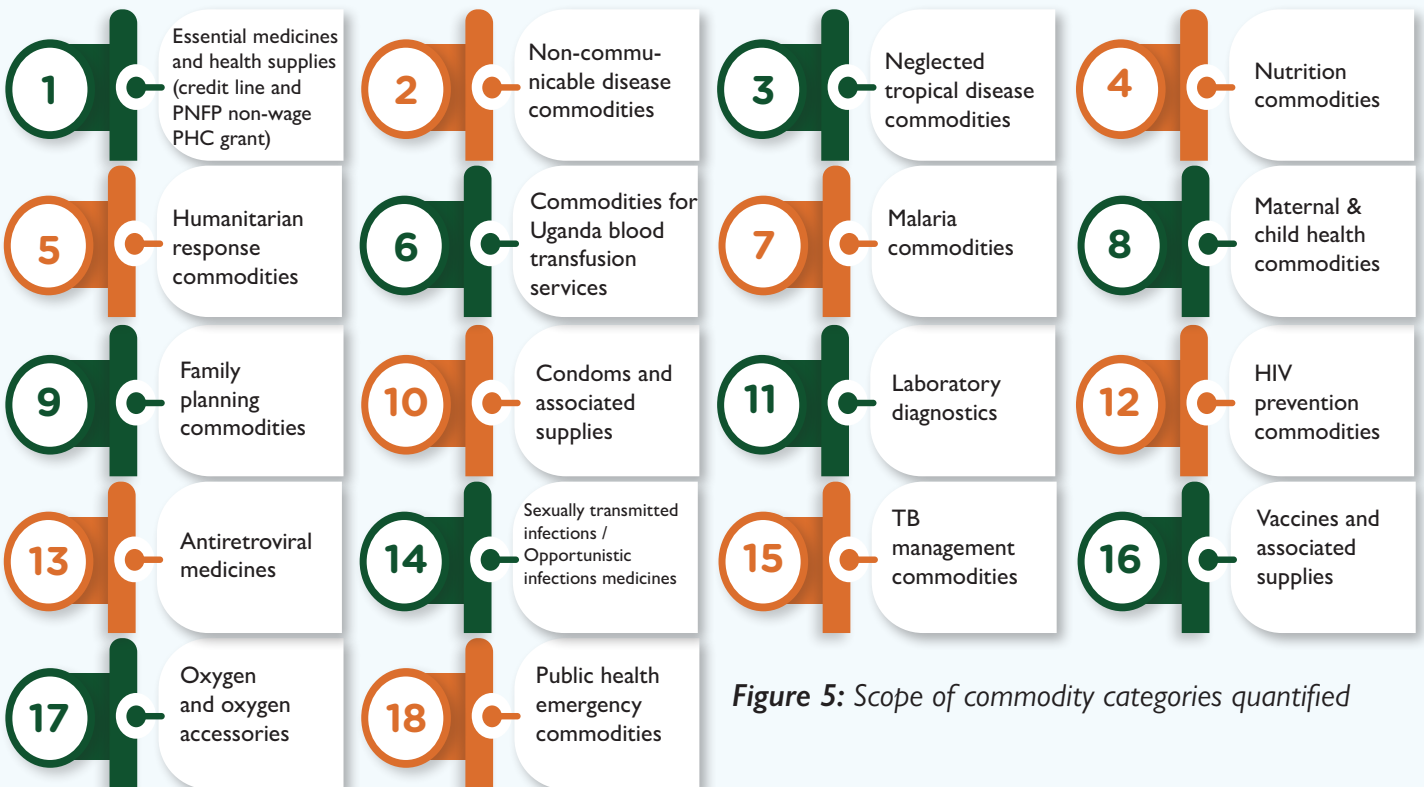


Figure 5: Scope of commodity categories quantified

Results

Major achievements from the USAID/SSCS Activity's work to improve the quantification of health commodities include:

(1) Human resources

The number of professionals in the QPPU increased from 5 in 2012 to 13 to-date. With the impact made by USAID/SSCS, stakeholders appreciated the role of QPPU and the enormous work done. As such the Global Fund supported the unit with 7 staff, USAID with 6 staff. This increase has bolstered the unit's ability to accurately quantify health commodity needs and monitor stock status. The expansion of staff capacity has enabled onboarding of seven additional commodity categories (non-communicable disease commodities, neglected tropical disease commodities, humanitarian response commodities, nutrition commodities, vaccines and associated supplies, oxygen and oxygen accessories and public health emergency commodities) to the quantification exercise.

Learning from the establishment of the QPPU, the MoH Division of Pharmacy structure was enhanced to a Department with more supply chain positions to better manage the transition to a more government-led QPPU.

(2) Efficiency of integrated approach:

The MOH institutionalized integrated quantification for EMHS in FY 2023/24. The results of the first integrated quantification highlighted the comprehensive national need and funding gap for all EMHS for a three-year period covering FY23/24-25/26 both in the public and PNFP sectors. The integration brought together different MOH programs, warehouses, development partners, and other stakeholders to leverage available funds to conduct quantifications for all commodity baskets (Figure 5). The USAID/SSCS Activity coordinated four assumption-building meetings for program commodities and grouped similar conditions together to leverage expertise.

- ▶ Commodities for family planning, maternal and child health, humanitarian response, Uganda Blood Transfusion Services, and nutrition.
- ▶ Commodities for public health emergencies, neglected tropical diseases, noncommunicable diseases, oxygen and oxygen associated supplies.
- ▶ Commodities for malaria and vaccines and associated supplies

MoH also engaged NMS and JMS to harmonize the annual procurement planning process and align to the national planning and budgeting cycle.

(3) Automation of quantification process:

In FY 2023/24, the MOH transitioned to using QAT for health program commodity forecasting and supply planning. QAT, an online platform, facilitates a more precise forecasting of commodity needs by leveraging real-time data analytics. The automation is expected to reduce the time required to complete the quantification exercise and improve forecast accuracy.

(4) Commodity need, commitment, and gap analysis:

The quantification outputs provide information on the required quantity of commodities for the nation. Funding commitments from donors are compiled and used to assess the funding gaps. Figure 6 shows increasing total commodity need with minimal increase in commitments and hence a rise in the funding gap over time. The funding gap varies widely across the commodity categories, with ARVs fully funded and humanitarian response commodities fully non-funded (Figure 7).

The integrated quantification report and factsheet for the revised output are uploaded to the MOH website. Click here for the [report](#) and [factsheet](#).

- ▶ HIV/TB laboratory diagnostics, HIV/TB, prevention, care and treatment and condoms.

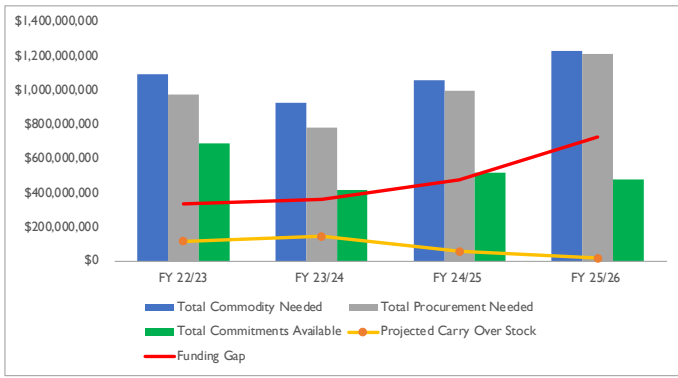


Figure 6: Funding gap analysis: FY 22/23–FY 25/26

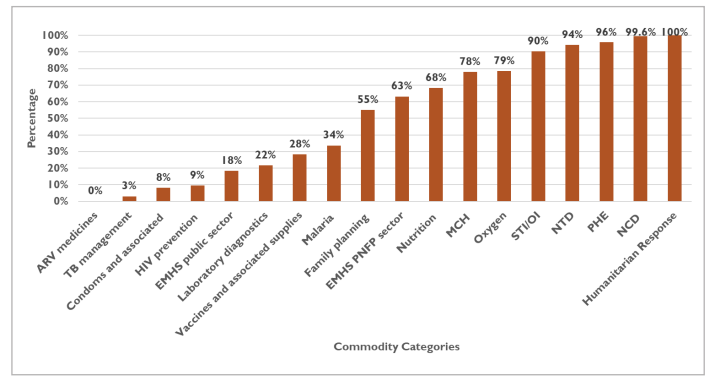


Figure 7: Percentage funding gap for FY 2024/25

(5) Funding allocation:

The quantification outputs are disseminated to key stakeholders including the Ministry of Finance, Office of the Prime Minister, development partners and civil society to advocate for additional resources guided by the 10-year health supply chain roadmap. As a result, the Government of Uganda allocated an additional 139 billion Ugandan shillings for health commodities in FY 2024/25. This funding is intended to increase the availability of EMHS in the country.

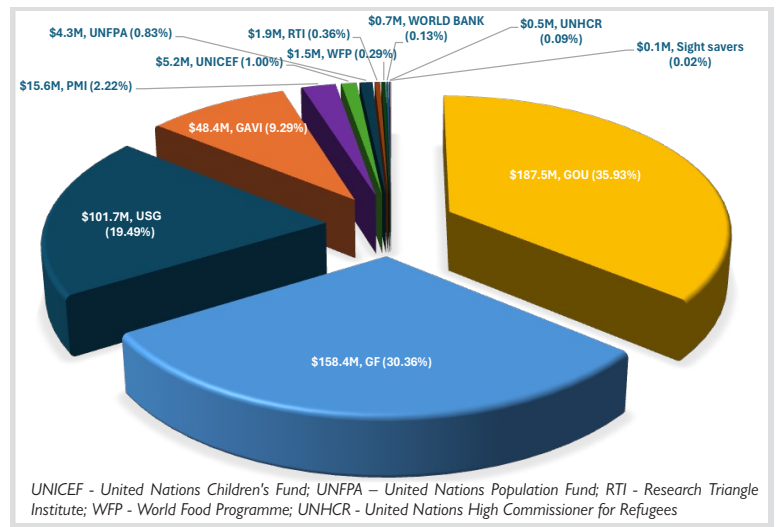


Figure 8: FY24/25 Funding Commitment Proportions

Lessons Learned and Recommendations

The shift from siloed health program commodity quantification to integrated health commodity quantification and planning achieves the following:

- Promotes synergy and collaboration among different stakeholders and health programs, leading to more accurate forecasts and streamlined procurement processes.
- Facilitates better resource allocation and optimization in alignment with incremental commodity and supply chain management resource needs, ensuring that health commodities are allocated according to the population’s actual health needs.

- Emphasizes the importance of stakeholder engagement and buy-in at all levels of the health system, fostering ownership and sustainability.
- Highlights the need for flexibility and adaptability to accommodate changing health priorities and evolving epidemiological trends.

Adopting a coordinated and integrated quantification approach more efficiently and effectively determines health commodity needs in Uganda and informs evidence-based incremental resource mobilization.

About USAID SSCS Activity

The USAID-funded Strengthening Supply Chain Systems Activity aims to support the Government of Uganda to move its health supply chain system further to accelerate local capacity development by improving performance to ensure uninterrupted availability of quality essential medicines and health supplies (EMHS), improving the health status of all Ugandans. The SSCS Activity is implemented by Management Sciences for Health (MSH), in collaboration with Advocates Coalition for Development and Environment (ACODE) and Uganda HealthCare Federation (UHF).

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