

Audit Report

The Global Fund's In-country Supply Chain Processes

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I. Background

Health products are critical to the mission of the Global Fund

Health products are central to most disease interventions, and critical to the Global Fund's mission to end the three epidemics as well as the achievement of its strategy to get there. The Global Fund's biggest investments in its grant portfolio relate to health product procurement (estimated at 40% but as high as 90% for some grants).¹ An estimated 40% (about US\$10 billion) of the Global Fund's total disbursements (over US\$29 billion) have gone towards health commodities since its foundation in 2002.² Fifty percent of the Global Fund's US\$10 billion disbursements to countries between 2014 and 2017 is expected to be made up of health commodities.³

Over the past 15 years, the Global Fund, in collaboration with its partners, has:

- supported 10 million people with anti-retroviral treatment;
- tested and treated 16.1 million people for tuberculosis; and
- distributed 713 million insecticide-treated nets.⁴

These program results are evidence of the magnitude of the resources engaged in the fight. They also show that, despite multiple hurdles, products are getting to intended beneficiaries. However, significant challenges remain in delivering products on time, to the right place, in the right condition and quantities, and at the best value cost.

Supply chain management remains a challenge

Reliable health and supply systems are identified by the World Health Organization as one of the four key elements for improving access to medicines.⁵ Several reviews in the Global Fund over the past decade have consistently identified procurement and supply chain management not only as a critical success factor but also as one of the key impediments to funded programs:

- The Global Fund Technical Review Panel consolidated observations of the concept notes submitted by countries for the 2014-2016 allocation period stated that “procurement and supply chain management remains a major challenge to many applicants”.⁶
- A High Level Independent Review Panel on Fiduciary Controls and Oversight Mechanisms of the Global Fund to Fight AIDS, Tuberculosis and Malaria (High-Level Panel) in 2011 stated that “The procurement, storage and distribution of pharmaceuticals represent significant vulnerabilities. The procurement and management of pharmaceuticals and medical products poses larger risks to the Global Fund's finances, operations and reputation than any other activity in its business model.”
- A five-year evaluation of the Global Fund in 2009 identified procurement and supply chain management as a key risk to grant implementation.⁷

All the donated drugs in the world won't do any good without an infrastructure for their delivery.

*Dr. Margaret Chan
Director General*

World Health Organization
<http://www.who.int/dg/speeches/2006/wha/en/>

The Secretariat appointed a Chief Procurement Officer in 2013 who established a Sourcing Department to mitigate procurement related risks. A Pooled Procurement Mechanism⁸ was deployed to optimize costs, improve purchasing capabilities and ultimately to deliver more products, at the right time and place, to more people in countries. An e-marketplace tool called “Wambo” was

¹ Audit of Procurement and Supply Chain Management at the Global Fund, 2015.

² GF Supply Chain Thematic Review, April 2016.

³ GF Supply Chain Thematic Review, April 2016.

⁴ The Global Fund 2016 mid-year results, published January 2017.

⁵ WHO Medicines Strategy: Framework or Action in Essential Drugs and Medicines Policy.

⁶ TRP observations on the 2014-2016 allocation-based funding model, 2016 (GF/B35/13).

⁷ The Five-Year Evaluation of the Global Fund, 2009.

⁸ The Pooled Procurement Mechanism evolved from the Voluntary Pooled Procurement mechanism which became operational from 2009.

established in 2016 as online platform to provide countries with direct access to suppliers and competitive prices, leveraging the Pooled Procurement Mechanism model and experience. However, these interventions primarily target getting the health commodities into the country. They do not address the challenges of getting products to patients once the products are in-country nor do they address improvements to quantification and forecasting.

In-country supply chains remain sub-optimal. The efficiencies or gains made in the procurement of drugs are undermined by subsequent processes that impede getting products to the intended beneficiaries. Many in-country supply chain management systems in implementing countries were designed over 40 years ago, with different levels of demand and volumes of health products. Systems have not been updated to take into account recent advances in technology. The pressure on already fragile supply chain systems has increased significantly in recent years as programs scale up and new initiatives are rolled out by partners.⁹ These increased volumes have not always been accompanied by commensurate systems strengthening, which has resulted in supply chain challenges.

An analysis of supply chain issues identified in recent OIG audits highlights the following pervasive issues:

- **Stock outs** across the grant portfolio especially at the facility level, mainly for anti-retroviral and anti-malarial medicines as well as test kits.¹⁰
- **Unimplemented plans for in-country quality monitoring** of health commodities.¹¹ In line with grant agreements, many countries have developed quality control plans. However, they have not been effectively implemented.¹²
- **Expiries/damages** consistently reported across the grant portfolio. This mainly relates to anti-tuberculosis and anti-retroviral medicines as well as malaria and HIV test kits.¹³
- **Unaccounted for stock** is noted especially for malaria-related products, i.e. bed nets, anti-malarials and test kits.¹⁴
- Several instances where **health commodities were not used appropriately** affecting the availability of medicines for intended beneficiaries. These include:
 - treatment of patients without proper diagnosis or regardless of diagnosis especially for malaria;¹⁵
 - health commodities being used to treat other diseases;¹⁶
 - use of medicines for other purposes e.g. as animal feeds, fishing nets etc. as sometimes reported in the press.¹⁷

Prioritization of supply chain management by the Secretariat

The Secretariat's corporate risk register lists three supply chain related risks: treatment disruption (high risk); theft/diversion of non-financial assets (medium risk); and substandard quality of health products (medium risk). Concept Notes from countries, the Secretariat's Qualitative Risk Assessment, Action Planning and Tracking (QUART) tools, and findings by different assurance providers identify similar risks. Acknowledging these risks, the Secretariat has taken steps to address supply chain management issues at the country level including:

⁹ E.g. World Health Organization's treat all guidelines for HIV, UNAID's 90:90:90, the eliminate Malaria drive etc.

¹⁰ Audit of Global Fund Grants to: Indonesia (2015); Pakistan (2015); South Sudan (2015); Tanzania (2016); Malawi (2016); Uganda (2016); Zimbabwe (2016); Democratic Republic of Congo (2016); Nigeria (2016); Cameroon (2016); Uzbekistan (2016)

¹¹ Quality of products under this audit only relates to the handling of products not the quality of the product itself.

¹² Audit of the Global Fund Grants to: India (2016); Uganda (2016); Malawi (2016); Pakistan (2015)

¹³ Audit of the Global Fund Grants to: Pakistan (2015); Tanzania (2016); Malawi (2016); Uganda (2016); Zimbabwe (2016); Democratic Republic of Congo (2016)

¹⁴ Audit of Global Fund Grants to: Tanzania (2016); Malawi (2016); Uganda (2016); Zimbabwe (2016); Democratic Republic of Congo (2016); Nigeria (2016);

¹⁵ Audit of Global Fund Grants to: Tanzania (2016); Malawi (2016); Uganda (2016)

¹⁶ Investigation of Global Fund Grants to Côte d'Ivoire, 2016

¹⁷ <http://www.dailysun.co.za/News/International/farmers-use-arvs-to-fatten-chicken-20160705>; <http://iharare.co.zw/zimbabwean-farmers-feeding-chickens-arvs/>; <http://www.keycorrespondents.org/2014/09/03/hiv-drugs-misused-to-%E2%80%9Cfatten%E2%80%9D-chickens-and-ferment-malawi-gin/>

- The development of a supply chain strategy is underway with strategic objectives expected to cover:
 - ensuring product availability i.e. satisfying patient needs when they come to a point of service;
 - reducing product wastage in order to ensure efficient use of limited resources;
 - stabilizing the cost of supply chain costs per patient while increasing product availability;
 - ensuring forecast accuracy in order to correctly anticipate product orders; and
 - ensuring responsive supply chains through fast replenishment of inventory.
- The creation of a Supply Chain Department within the Grant Management Division, and the appointment of a Head of Supply Chain in August 2016.
- the development of a procurement and supply chain assurance framework;
- a supply chain transformation project in Nigeria, with similar projects expected to start in Ghana and Malawi;
- participation in an Interagency Supply Chain Group that ensures better coordinated and more effective support to country efforts in ensuring sustainable access to high quality essential health commodities for beneficiaries; and
- signing a memorandum of understanding with United States Pharmacopeia Convention-Ghana for strengthening in-country quality assurance for health products.

The audit considered the above developments which were underway at the time of the audit (see section II on the scope of the audit).

II. Scope and Rating

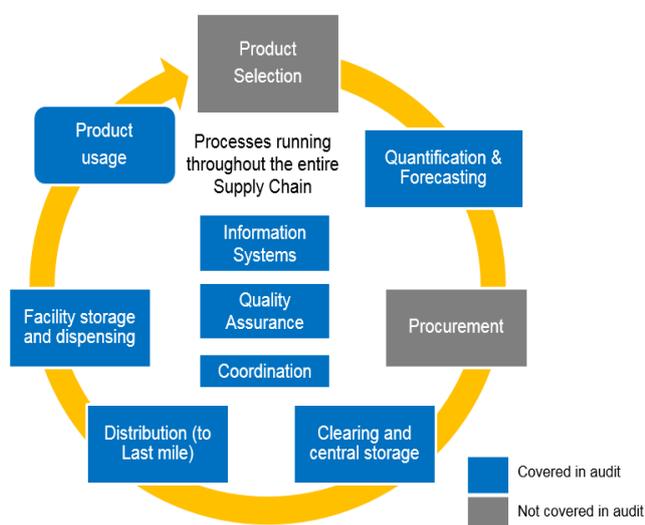
01 Scope

In this audit, the Office of the Inspector General (OIG) assessed whether in-country supply chain mechanisms are adequate and effective in ensuring that the right products are delivered in the correct quantities, condition, at the right place and time, and for the best value cost. The audit focused on the following areas:

- the root causes of supply chain challenges at the country level;
- the alignment of Global Fund structures, systems, processes and resources to mitigate in-country supply chain challenges; and
- the adequacy and effectiveness of the assurance framework in supporting the identification and mitigation of supply chain related risks.

Fifteen countries in Asia and Africa were selected for the audit, with input from the Secretariat. These are Cambodia, Democratic Republic of Congo, Ghana, India, Indonesia, Kenya, Malawi, Nigeria, Pakistan, Rwanda, Sudan, Tanzania, Uganda, Zambia and Zimbabwe. These countries represented

49% of the Global Fund's allocation to countries from 2014 to 2016. Procurement and supply chain management accounts for an average of 56% of grants to these countries.



The audit covered all the processes in procurement and supply chain management with the exception of product selection and procurement as shown in the diagram. The Secretariat procurement processes were part of an OIG audit in 2014.

The audit did not involve any in-country visits but drew on recent OIG audits, as well as the work undertaken by different assurance providers and development partners.

02 Rating

Operational Risk	Rating	Reference to findings
Adequacy and effectiveness of Secretariat interventions in addressing root causes of supply chain issues	Needs significant improvement	IV 01, IV 02, IV 03, IV 04, IV 05
Adequacy of Global Fund structures, systems, processes and resources to mitigate in-country supply chain challenges	Needs significant improvement	IV 06
Adequacy and effectiveness of the design of assurance framework to support the identification and mitigation of supply chain related risks	Needs significant improvement	IV 07

III. Executive Summary

The Global Fund invests an estimated 40% of its annual disbursements in health products, with investments in the 2014-2017 allocation period estimated to be more than US\$10 billion. Effective in-country supply chain systems are needed to get health products to intended beneficiaries and return critical information to decision-makers for planning purposes. This brings supply chain management to the forefront in supporting the achievement of the organization's strategic objectives. Program results over the years demonstrate that the majority of health products successfully reach their intended beneficiaries. However, reports of stock-outs, expiries, unaccounted for stocks and quality issues show that challenges remain with in-country supply chains.

Acknowledging these risks, the Secretariat is working on measures to address the challenges including the development of a supply chain strategy. Whilst this report highlights several shortcomings in the Global Fund's approach, the pervasiveness of supply chain issues must also be evaluated in the broader context of country ownership, mandate constraints and limitations in the partnership model. Supply chain systems first and foremost belong to the countries. Unlike procurement, which can be centralized to some extent with processes such as the Pooled Procurement Mechanism, most supply chain processes are necessarily local by definition. As such, significant factors include the degree of country ownership and political will, the prioritization of national investments in this area, and the overall national infrastructure quality. The extent to which the Global Fund can effectively tackle the challenge also hinges significantly on the degree of consensus – including at the Board level – on both the scope of its mandate and the level of resources the organization can commit to address systemic in-country supply chain issues. Whilst it is clear that the Global Fund cannot succeed in its fight against the three diseases without a supply chain that can effectively and efficiently deliver drugs and services to patients, the resource-constrained environment imposes real trade-offs (both political and financial) on program focus and investment choices. Lastly, noted gaps in supply chain also often extend well beyond the Global Fund and reflect, in many cases, ineffective partnerships that have resulted in poor coordination of interventions and the inefficient development of parallel systems in-country.

The OIG audit of Global Fund in-country supply chain processes concluded that the Secretariat's structures, interventions and assurance framework to mitigate in-country supply chain challenges need significant improvement.

Adequacy and effectiveness of Secretariat interventions in addressing supply chain challenges

The Global Fund invested almost US\$130 million in supply chain related activities and processes in the 15 countries reviewed in this audit in the 2014-16 allocation period. This, combined with other partner investments, has primarily supported the storage and distribution of health products to the last mile as well as strengthened specific in-country supply chain processes, especially quantification and forecasting processes. However, in-country supply chain systems remain a significant barrier to providing health products to beneficiaries in a cost effective manner. Recognizing this issue, the Secretariat has taken steps to address in-country supply chain management issues as highlighted on page four of this report.

The audit found that mitigating actions and recommendations from various assurance providers (including the OIG) have not comprehensively addressed supply chain issues. In 11 out of the 15 countries reviewed, assurance providers have identified the same supply chain issues in subsequent audits and reviews. This is because interventions deployed to address supply chain issues often target symptoms presented by specific process/ system deficiencies, rather than root causes which tend to be related to the underlying health systems. The OIG's analysis of best practices and root causes of supply chain challenges in the 15 countries identified four main barriers to supply chain management.¹⁸ All four factors are health system related and are consequently more complicated to

¹⁸ These four barriers are: country ownership and leadership; accurate and reliable data; human resource capacity; and funding.

resolve. Although these issues cannot be solved by the Global Fund in isolation, progress cannot be made without tackling these systemic issues:

Country ownership and governance structures in 14 out of the 15 countries are not fully effective in driving a meaningful resolution of supply chain interventions. This is shown by: (i) a lack of functional country strategies to guide the prioritization of interventions designed to address supply chain issues beyond ad hoc donor driven requirements and initiatives; (ii) sub-optimal coordination of supply chain activities by multiple stakeholders to ensure synergy and impact of interventions and drive efficiency; and (iii) inadequate in-country oversight and accountability over supply chain matters to ensure effective delivery of health products to patients and full accountability for commodities. In a bid to strike a balance between country ownership and accountability for results, the Secretariat has taken steps to finding solutions to these challenges. For example, the Global Fund and other donors have often had to by-pass country systems in ten of the countries reviewed. The resulting parallel systems are not only unsustainable but have in some cases proven to be inefficient, uneconomical and not always effective in getting products to intended beneficiaries. Although the Secretariat has often times supported the reintegration of supply chains, the benefits of these investments may be short-lived because governance and leadership structures at country level are not supported and tackled.

Data: Almost all the supply chain systems in the 15 countries reviewed had challenges in providing accurate and **reliable data** to support decision-making for key processes, such as quantification and forecasting, procurement and distribution decisions. In consequence, planning decisions resulted in over/under stocking of commodities, treatment disruptions and drug expiries in the 15 countries reviewed. The lack of data also means that there is limited visibility of point of use stock availability and on hand inventory, which affects stakeholders' (including Secretariat) ability to respond in a timely manner to avert supply chain crises that occur from time to time, and to prevent, detect and respond to the distinct risk of theft of health products. Investments in information systems at the country level have prioritized program data over consumption data, meaning that data quality in the latter have not developed at a fast pace. The Global Fund, alongside other partners, have deployed electronic solutions to strengthen data collection and reporting in nine of the countries reviewed. However, this has not fully addressed the problem due to other interconnected factors such as inadequate human resource capacity (especially at lower levels), weak underlying manual processes and lack of infrastructure.

Human resources: Supply chains are dependent on having sufficient **human resources** in the right places with the right skills. A serious shortage of health workers is not unique to supply chain management but is one of the most critical constraints to the achievement of health and development goals.¹⁹ The World Health Organization estimates that countries face supply chain related vacancy rates of up to 71% in public sector posts.²⁰ Where staff shortages were noted with regard to supply chain management, countries resorted to deploying unqualified staff with limited training. This, coupled with heavy workloads, means that workforces are unable to perform key tasks such as maintaining key stock records. This has impacted stock levels, the availability of data and the ability to account for commodities, resulting in expiries, losses, damages and stock-outs of health commodities.

The Secretariat has supported in-service staff training that can be tied to specific performance targets. While this is effective in the short-term, staff shortages and heavy workloads remain largely unaddressed. The Secretariat funds supportive supervision which often does not cover supply chain activities. While the investment of grant funds in supporting human resources is generally discouraged, direct support has often been provided at the central level, rather than at facility level where there is a greater need. Although it is well acknowledged that governments should take a lead in finding lasting solutions to human resources, the Secretariat's active engagement with governments in this regard was seen in only one country reviewed.

¹⁹ http://www.who.int/workforcealliance/about/hrh_crisis/en/

²⁰ <http://apps.who.int/medicinedocs/documents/s17997en/s17997en.pdf>

Funding: All the countries reviewed in this audit cite inadequate **funding** as an impediment to transforming their supply chain systems, with more than a third of the countries unable to meet the operational costs to run their own supply chain. Considering limited internal and external resources, supply chain management is often de-prioritized in light of more pressing program needs, such as treatment. For example, in the case of the Global Fund, supply chain related funding requests have been mainly classified under the “above allocation” request for funding, and as a result, rarely get funded. The Secretariat has not effectively followed up on governments commitments to provide counterpart funding. Future investments in strengthening supply chain management will be dependent on country teams ensuring that in-country supply chain stakeholders are involved in the Country Dialogue and Concept Note preparation processes. Maximizing partnerships could be a possible solution for additional funding. However, the absence of effective country ownership and governance structures in the countries reviewed hamper efforts to fundraise and coordinate available resources.

This area is rated as “**needs significant improvement**” since measures put in place by the Secretariat have not adequately resolved in-country supply chain management risks. In order to have an impact on the pervasive supply chain risks, the Secretariat has recognized this risk and its response will have to target identified root causes and not symptoms. This is not to say that the current actions are not having impact. Indeed, drugs are being bought, moved and administered. Nevertheless, the rating is cognizant of the limited influential role the Secretariat has in sorting identified root causes, and is a reflection of how lessons are being learned and leveraged on current and future initiatives.

Alignment of Global Fund structures, systems, processes and resources to support the mitigation of in-country supply chain challenges

While supply chain has been identified as an area of strategic importance to the achievement of Global Fund objectives, there has been limited oversight of supply chain matters at the Board and Management Executive Committee levels. Until late 2015, deliberations primarily focused on procurement and not supply chain management. A supply chain department was established in 2016; however, as the Global Fund is conceived as a funding mechanisms rather than an implementing agency, the scope of its mandate may limit the options available to the Secretariat in tackling systemic supply chain issues. A strategy is under development that is expected to provide clearer direction in this area. The Board will also need to guide the Secretariat on the trade-offs between the importance of getting products to beneficiaries versus building sustainable country systems. This will provide an opportunity for the Global Fund to learn lessons and clarify its role in supply chain. Following the development of the supply chain strategy, the Global Fund has established key performance indicators, with procurement and supply chain management listed under building resilient and sustainable systems for health objectives. However, this needs to be translated into operational key performance indicators to measure the organization’s progress in this area.

In terms of structure, the Secretariat currently has a siloed approach to procurement and supply chain with responsibilities spread across two divisions and five departments,²¹ of which all have different objectives, priorities and performance measures. The split of over 50 staff across the different divisions and departments without an effective mechanism to drive collaboration among the respective teams (including those within the same division), affects their ability to achieve synergy in their work. Linkages have not been established with the Strategic, Investment and Impact Division. This is critical because the Secretariat is also developing a strategy for strengthening health systems through the resilient and sustainable system for health (RSSH) initiative.²²

²¹ Finance and Grant Management Division with staff involved in procurement and supply chain management working in the Sourcing, Wambo, Indirect procurement, Country Teams and the newly formed Supply Chain department.

²² Strengthening procurement and supply chain management is listed as one of the seven sub-objectives of building resilient and sustainable systems for health (i.e. strategic objective 2) in the Global Fund 2017-22 strategy.

The OIG also noted that ongoing Secretariat projects have not been fully leveraged to find solutions for supply chain management. The Implementation through Partnership (ITP) project, which is to increase the effectiveness and efficiency of implementation in 20 selected countries through shared ownership and mutual accountability, is cited as a mitigating measure for treatment disruption in the corporate risk register. However, no solutions were proposed to address the supply chain related risks identified in six²³ out of the 15 countries reviewed where ITP was implemented. Likewise, the Risk and Assurance project²⁴ has been implemented in six of the countries reviewed but this has not translated in any material changes to in-country supply chain related assurance mechanisms. Under the Accelerated Integration Management (AIM) project, information on supply chain management has not advanced at the same rate as the other functions. The AIM project seeks to integrate and align processes, data and systems to support efficient portfolio management.

The Secretariat has taken measures to ensure its structures, systems, processes and resources support the mitigation of in-country supply chain challenges. This area is rated as “**needs significant improvement**”. The rating reflects the effectiveness of the initiatives and actions taken in areas where the Secretariat has direct control. The Secretariat can better leverage ongoing projects to strengthen different aspects of supply chain management.

Adequacy and effectiveness of Secretariat’s assurance framework in supporting the identification and mitigation of supply chain related risks

Current human resource and financial resources are not commensurate with the strategic importance of supply chains in achieving organizational objectives.²⁵ The Secretariat has not allocated sufficient resources to gain assurance over procurement and supply chain management activities, both at the country team and local fund agent level. For example, only 12% of the Local Fund Agent (LFA) budget has been allocated to procurement and supply chain management, although an estimated 68% of grant disbursements in the 15 countries reviewed relate to these activities. Within this limited budget, most of the LFA’s effort in this area is spent on procurement related reviews, leaving a negligible portion for supply chain work. As a result, information on the magnitude, extent and impact of supply chain issues is potentially outdated and inadequate, and is therefore ineffective in informing decisions. Information collected by Local Fund Agents is often limited to reporting stock outs at the central level, without relevant insights on conditions at the facility level; This information is also of limited value since it is often too late to act by the time these stock outs are reported to the Secretariat.

At the time of the audit, the Secretariat had embarked on a process to revamp the in-country supply chain assurance framework but measures put in place so far do not adequately address well-acknowledged weaknesses. This area is therefore rated as “**needs significant improvement**”.

The majority of the Agreed Management Actions in this report are linked to the Supply Chain strategy that the Secretariat is already developing. If well designed and effectively implemented, it would bring a more strategic discipline to the Global Fund’s management of supply chain risks in its programs and accordingly help mitigate many of the risks highlighted in this report.

²³ DRC, Ghana, Kenya, Malawi, Nigeria and Pakistan

²⁴ Risk and Assurance project involves the assessment of risks in grant portfolios to the achievement of grant objectives, designing controls and assurance mechanisms over the controls.

²⁵ In particular, objectives related to treatment disruptions, substandard products quality and theft or diversion of non-financial assets.

IV. Findings and Agreed Management Actions

01 Supply chain related interventions have limited effect because they focus on symptoms and not root causes

Different stakeholders (including the Global Fund) have deployed interventions that have limited effect in resolving supply chain risks. This is because solutions often focus on tackling tactical issues rather than addressing systemic root causes in the underlying health systems.

The occurrence of stock-outs, waste (expiries and damages), unaccounted for stock and inadequate monitoring of the quality of health products noted in the 15 countries reviewed illustrate the persistent challenges experienced within country supply chain systems. The Secretariat's US\$130 million investment in the 2014-16 allocation period is part of multiple stakeholder funding availed to mitigate supply chain related issues in these 15 countries. However, despite these and past interventions, supply chain related risks remain a critical challenge to funded programs.

Challenges in the overall health systems are the main barrier to effective supply chains: The audit identified the following areas as root causes for supply chain related issues in the 15 countries (covered in more detail in Findings IV.2-5 of this report):

- a. inadequate and/or ineffective leadership and governance structures to facilitate prioritization, coordination and accountability within the supply chain activities;
- b. lack of accurate and reliable data to drive informed decision making;
- c. inadequate human resources for service delivery and supply chain management; and
- d. inadequate financial resources for supply chain transformation.

These root causes are health system related and are therefore more challenging and costlier to address effectively. A preliminary analysis of health systems by the Secretariat's RSSH team independently identified the same four areas performing poorly in the 15 countries reviewed.²⁶ Countries such as Rwanda, Kenya and Sudan that have adopted a more holistic approach to strengthening health systems have registered significant progress in resolving supply chain related issues.

Interventions tend to tackle specific risks and not root causes in health systems:

Interventions by governments and donors have primarily focused on resolving specific supply chain management related risks presented in the programs they support. While such interventions have succeeded in improving targeted processes, they have not addressed system wide issues. As a result, identified issues prevail after the specific interventions are implemented. For example, the construction of additional warehouses was unable to resolve Tanzania's storage challenges because of the country's decision to hold large buffer stocks²⁷ and its failure to dispose of large volumes of expired stocks²⁸ was not tackled. This was due to various underlying factors including poor use of data, collaboration with partners over donated medicines and defensive stock management behaviors due to past poor distribution practices, all of which need tackling in order to address the root cause.

The notion of not tackling root causes is reinforced in the Technical Review Panel's final report on 2014-2016 allocations. The report notes that procurement and supply chain management is approached separately across diseases with disregard of the fact that they work through common

²⁶ Analysis of performance of health system building blocks by the Resilient and Sustainable Systems for Health team within the Secretariat's Strategic, Investment and Impact Division

²⁷ The Diagnostic review of MSD in Tanzania states that 55% of goods held in June 2015 had 12 months or more of stock in terms of the average monthly consumption

14 months instead of the recommended 10 months for HIV medicines

²⁸ Source: Diagnostic review of MSD in Tanzania

mechanisms (health systems). The panel noted that funding applications tended to focus on capital investments with minimal impact on the overall systems, missing opportunities to leverage costs and address systemic gaps across supply chain management.²⁹

Supply chain related risks remain unmitigated: Supply chain related issues are well acknowledged within the Secretariat with agreed actions underway to mitigate them. However, while many actions have been implemented, supply chain risks reoccur which raises questions about the effectiveness of proposed interventions in mitigating identified risks:

- In 11 out of 15 countries reviewed, the same supply chain issues reoccur in subsequent audits and reviews by assurance providers despite the implementation of previously agreed actions/recommendations. For example, despite closing 32 agreed management actions from OIG audits (representing 56% of supply chain related actions between January 2009 and November 2016), some issues related to stock-outs, expiries and unaccounted stock have been identified in subsequent OIG audits in Tanzania, Ghana, the Democratic Republic of Congo, Malawi and Nigeria.
- Implementation of mitigating actions in the risk register have not changed the risk ratings for supply chain related risks since they were first introduced in the risk register in 2013.

No ‘quick fix’ to supply chain issues: The Secretariat acknowledges that strong health systems underpin effective service delivery. This includes getting quality commodities to beneficiaries on time. However, supply chain related issues will, by their nature, be more challenging to address given the funding and timing required to resolve them whereas the Global Fund has limited funding and its grants are time bound over relatively short implementation cycles.

Tensions between the emphasis on program activities and the strengthening of health systems: By prioritizing systems in the 2017-22 strategy, the Global Fund recognizes the importance of health systems in the fight against the three diseases. This strategy lists strengthening procurement and supply chain management as one of the seven sub-objectives of building resilient and sustainable systems for health (i.e. strategic objective 2). However, delivering on this sub-objective may require a major shift away from the current funding approach, which tends to prioritize treatment, towards more of a health systems centric approach.

Limited funding for health system strengthening: The Technical Review Panel observed, in its final allocations report, that health system strengthening, including supply chain, has been insufficiently resourced.³⁰ Its proposal to the Board to earmark funding for health system strengthening was not approved. Instead the Board made funding available through catalytic funding³¹ for health systems strengthening amounting to US\$ 264 million. Catalytic investments are a portion of the US\$800 million funding set aside by the Board for programs, activities and strategic investments not adequately accommodated through country allocations but essential to achieve the aims of the Global Fund’s 2017-2022 Strategy and Global Partner Plans. Out of the US\$264 million, US\$54 million has been allocated to procurement and supply chain interventions; US\$20 million of this will go towards the diagnosis stage of supply chain strategy development and US\$12 million towards procurement and supply chain related capacity building. Other investments in health systems, and by extension supply chain, will have to be made from grants through country dialogue and grant-making processes. For the 2017-19 allocation, the Secretariat will encourage countries to invest in health systems in line with thresholds that are dependent on a country’s income status. The OIG notes that only 7% of the 2014- 16 allocation was allocated to direct health system strengthening grants; although many disease-specific grants include health system strengthening components, the amount dedicated specifically to health system strengthening falls short of the Secretariat’s target of at least 20% for low and middle income countries.

²⁹ TRP observations on the 2014-2016 allocation-based funding model, 2016 (GF/B35/13)

³⁰ TRP observations on the 2014-2016 allocation-based funding model, 2016 (GF/B35/13)

³¹ As part of the allocation methodology approved by the Board in April 2016, up to USD 800 million is available for catalytic investments to catalyze country allocations to ensure they deliver against the key aims of the 2017-2022 Global Fund Strategy (GF/SC 02/13)

Tensions between matching the short term nature of the Global Fund funding cycles with the longer term investment needed for health system transformation: Funding is provided on a three-year cycle but health system strengthening requires long term investments. In the absence of country strategies, there is no basis for continuity of interventions across funding cycles. It also means that if the Secretariat is to invest in systems strengthening, there may be no immediate results in the short term to trigger disbursements in line with the performance based funding model. At the time of the audit, the Secretariat was developing two strategies that will directly impact in-country supply chain issues (a supply chain strategy and a strategy for building resilient health systems for health). This provides an opportunity to find lasting solutions for supply chain related issues.

Agreed Management Action 1: The Secretariat shall develop a comprehensive strategy that addresses all the significant supply chain health system issues identified in the in-country supply chain audit. In particular, the strategy will define the Global Fund's scope of responsibility, oversight, and necessary initiatives that must be taken to support the resolution of in-country supply chain challenges. This strategy will take into account proposals detailed in the building resilient systems for health strategy that aims to strengthen and expand the capacity of health systems to address health issues in a sustainable, equitable and effective manner.

Owner: Head Grant Management

Target Date: 30 June 2018

02 Challenges with country ownership and governance structures have affected prioritization, coordination and accountability within supply chain activities

Country ability to deliver products to patients efficiently and economically is affected by challenges in ownership, coordination and oversight of supply chain systems.

Country ownership is core to effective national supply chains and underpins the maturity of supply chain systems of the 15 countries reviewed. This is demonstrated in countries' abilities to (i) develop and implement supply chain strategies to guide prioritization of issues; (ii) coordinate stakeholder activities to ensure synergy and the optimal use of limited available resources; and (iii) oversee supply chain activities to drive accountability.

Country supply chain strategies not implemented: Eleven countries reviewed had developed supply chain strategies, however only four were in the process of implementing them at the time of the audit. For example, Rwanda has developed an evidence-based, results-focused, prioritized and costed supply chain strengthening plan that all stakeholders (including development partners) subscribe to and are aligned to. Assistance is focused on areas of need identified by the government in collaboration with its partners. Rwanda allocates supply chain related roles and responsibilities among stakeholders and holds them accountable through monitoring their performance. Seven out of the 11 countries have not implemented their strategies due to lack of resources, stakeholder buy-in and government ownership. For example, in Ghana and the Democratic Republic of Congo, supply chain master plans have been pending implementation since their development in 2012. In consequence, supply chain issues are not visible to country leadership, and as a result are not prioritized for funding.

The Secretariat has encouraged countries to develop supply chain strategies within the national health strategies. However, because the development of these strategies is not mandatory, it has often not been prioritized by countries. In the absence of such strategies and in order to find solutions to supply chain issues, the Secretariat has relied on its own assessments (primarily through the work of the Local Fund Agent) to inform its investments.

Variable oversight over supply chain activities. In 14 countries, the responsibility and accountability for supply chain activities are fragmented across different parties and over different government levels (central and local government levels). Stakeholder roles and accountabilities have not been clarified and key performance indicators are not defined to measure performance throughout the supply chain. In its report on the 2014-16 allocation, the Technical Review Panel highlighted the lack of oversight and accountability mechanisms as a challenge to supply chain and its impact on commodities.³²

Under Global Fund supported programs, the Secretariat has limited visibility of supply chain activities in 14 of the countries reviewed. This is because supply chain activities in these countries are undertaken at sub-recipient level. Principal Recipients in 11 countries have not set up supply chain related performance indicators for their sub-recipients with regard to quality, response times and costs incurred across the supply chain. Where these indicators are available (as seen in Pakistan, Nigeria and the Democratic Republic of Congo), Principal Recipients have not put mechanisms in place to monitor them. Variable supply chain oversight is evident in the following examples:

- *Accounting for commodities is challenging* in the eight countries with decentralized governments because oversight weakens as products move from the central level to local governments. Different assurance providers could not reconcile stock balances with records

³² TRP observations on the 2014-2016 allocation-based funding model, 2016 (GF/B35/13)

and variances were noted in most of the countries reviewed.³³ In two countries, there have been reports of sale of funded commodities in private pharmacies.³⁴

- *Improper diagnosis and treatment of patients* have resulted in waste. This is contrary to the Global Fund procurement policy which requires that Principal Recipients encourage the appropriate use of health products.³⁵ In Malawi and Tanzania, 60% and 51% respectively of patients were treated for malaria without confirmatory testing and/or after negative diagnosis, leading to over/under use of stocks. For example:
 - anti-retroviral medicines are used to treat hepatitis B in Uganda;³⁶ and
 - anti-tuberculosis medicines are used in Côte d'Ivoire for treating ulcers and as a stimulant.³⁷
- *Poor management of expiries*, and in some cases, expired products have made their way back into the supply chain as was noted in Cambodia, Uganda and Zimbabwe. Expiries have not only represented real loss of value but also have hidden costs. For example, we noted increased storage costs for expired medicines in five countries as well as high disposal costs.³⁸

Challenges in coordinating in-country stakeholders. Rwanda has a strong government-led coordinating agency, which oversees the supply chain for all medicines and diagnostic products. On the other hand, 14 out of the 15 countries reviewed have challenges in organizing, monitoring, and supporting supply chain activities:

- Six countries did not effectively coordinate with in-country partners regarding treatment regimen changes which resulted in expiries of commodities (valued at US\$1.8million)³⁹, the switching of patients between regimens mid-treatment and delays in enrolling new patients.
- Four countries were found to have procured unregistered products without obtaining the requisite waivers from the Medicine Regulatory Authorities.⁴⁰ This resulted in significant delays in the clearance of products thereby reducing product shelf life as well as causing stock-outs in the short-term. In particular, this was noted in Pakistan where obtaining such a waiver took over a year.
- The Central Medical Stores in six countries distributed products without direction from the disease programs.⁴¹ This resulted in over/understocking by regions since distributions are not informed by need.

These challenges are caused by ineffective coordination mechanisms at country level. Alongside other donors, the Secretariat has supported the establishment of logistics management units in five of the countries to enhance supply chain related coordination. However, their effectiveness is impacted by inadequate resourcing and/or inappropriate positioning within relevant ministry structures. For example, in Tanzania the program unit reports to the program managers and the central medical store that it is supposed to oversee.

The consequences of these challenges in core oversight activities include:

- i. *Fragmented accountability for supply chain activities* across stakeholders affects countries' ability to find lasting solutions to supply chain issues: Gaps created by the lack of country ownership are often filled by donors that drive supply chain interventions based on their individual assessments of risk. Resultant interventions primarily focus on areas that directly

³³ Rwanda (US\$5.95m), Uganda (US\$4m), Tanzania (US\$0.5m), Zimbabwe (US\$1.9m) etc.

³⁴ <https://lilongwe.usembassy.gov/pressreleases5/u.s.-concerned-over-drug-theft>, Cambodia LFA report

³⁵ Guide to Global Fund Policies on Procurement and Supply Management of Health Products July 2016 Geneva, Switzerland

³⁶ Audit of the Global Fund grants to the Republic of Uganda, 2016

³⁷ Investigation of Global Fund Grants to Côte d'Ivoire, 2016

³⁸ In Tanzania, disposal costs amounted to USD 550,000.

³⁹ This issue was identified in Uganda, Malawi, Zimbabwe, Rwanda, Cambodia and Indonesia.

⁴⁰ This issue was identified in DRC, Malawi, Pakistan and Sudan.

⁴¹ This issue was identified in DRC, Sudan, Uganda, Zimbabwe, Malawi and Indonesia.

impact individual donor programs, rather than solving overarching supply chain issues. The lack of mechanisms to allocate supply chain related roles and responsibilities among stakeholders mean that accountabilities for performance are not clear.

- ii. *Duplications and gaps in supply chain investments* tend to be inefficient, uneconomical and unsustainable: In ten of the countries reviewed, donors have created parallel systems to ensure commodities reach beneficiaries. The lack of coordination has resulted in duplications and gaps among the multiple systems which are inefficient, uneconomical and not sustainable. For example, supply chain systems developed by Principal Recipients and disease programs in Pakistan, India, Democratic Republic of Congo, Indonesia and Nigeria resulted in duplications in storage and distribution arrangements.⁴² To combat this, the Secretariat is supporting the reintegration of supply chain systems in Nigeria (HIV), Malawi (HIV and malaria at central level), Pakistan, Zimbabwe and Kenya, with increased efficiencies already reported by country stakeholders. However, this has not been done consistently across the other countries reviewed. For example, in India and the Democratic Republic of Congo, limited coordination between the Principal Recipients who manage the funded programs was noted.
- iii. *Interventions not tailored to address supply chain priorities in the countries:* In the absence of country supply chain strategies, interventions are not guided and in some cases do not prioritize the right country needs. For example, diagnostics amongst other things (e.g. inadequate national laboratory systems), are often not prioritized in country supply chain systems as evidenced by stock-outs noted in the countries reviewed. However, they are important for the scaling up of programs and the Global Fund finances up to 60-100% of diagnostics in the countries reviewed. In-country supply chain systems are also at different maturity levels across the 15 countries reviewed. However, supply chain investments tend not to take into consideration the level of maturity of the country's supply chain processes, sometimes resulting in inappropriate and untargeted interventions. The Global Fund's strategy for supply chain has the potential to address this issue by considering a more differentiated approach on what and how the Global Fund invests with regard to supply chain.

Agreed Management Action 2: The Secretariat will conduct in-country supply chain diagnostic studies in 12 prioritized countries and use these to develop specific plans on how their supply chain systems will be strengthened. Each country plan will include plans detailing:

- The creation/ strengthening of effective country governance structures with the support of a partner-financier group in order to strengthen in-country supply chain accountability and coordination as well as the establishment/ reinforcement of a costed country supply chain strategy;
- Identification and implementation of mechanisms to support the collection of key supply chain data required by the Secretariat for decision making;
- Establish baseline on in-country supply chain capacity and identify suitable programs to close capacity gaps; and
- A plan on how funds for country supply chain transformation will be mobilized.

The Secretariat will also develop a plan for conducting in-country supply chain diagnostic studies for the rest of the relevant portfolios.

Owner: Head Grant Management

Target Date: 30 June 2018

⁴² Audit of the Global Fund Grants to the Islamic Republic of Pakistan, 2015

03 Challenges in obtaining accurate and reliable data to support informed decision making

Lack of accurate and reliable data limits visibility of stock availability across the supply chain and, in some cases, results in treatment disruption, waste and/or loss of commodities. Electronic solutions to address issues have not necessarily tackled wider underlying barriers.

Supply chain decision-making is affected by the lack of reliable consumption data, which underpins evidence-based choices. While all the 15 countries reviewed have logistics management systems (manual and/or electronic) in place, the systems in 14 of those countries are unable to provide reliable consumption data to inform decision-making. In addition, the limited information that is available from these systems is not analyzed and used for decision-making. For example, consumption data cannot be linked to the number of patients treated in 10 out of the 15 countries reviewed. Furthermore, 14 out of the 15 countries mainly use morbidity data for quantification and forecasting as no other reliable data is available. In contrast, Rwanda has one integrated and universal paper and electronic logistics management information system that provides real time data to inform supply chain planning and processes for all medicines and diagnostic products procured for the country.

The main barriers to the timely collection, reporting and use of data in the countries reviewed include:

- (i) Limited human resources capacity (skills, numbers and incentives). The capture and reporting of consumption data is often deprioritized at the facility level in light of more pressing activities such as treatment. This problem is exacerbated by multiple logistics systems (operating mainly in silo by disease) in 14 countries, which increase the work burden on an already strained work force. Notably, from the countries reviewed, the level of professional health workers in the public sector in Tanzania is 35% of the actual staffing need.⁴³ Malawi has 19% of pharmacy technicians and 1% of assistants, respectively, in post.⁴⁴⁴⁵ (See also finding IV.04 on health worker shortages).
- (ii) Consumption data not prioritized: Systems to collect consumption data have not developed at the same pace as systems for collecting service/programmatic data in the 15 countries reviewed. Systems have been developed to collect and report periodic programmatic data. On the other hand, commodities are viewed as program inputs to the results and therefore have not been actively tracked in health performance frameworks. For example, none of the Global Fund top ten indicators relate to supply chain despite its significance in driving impact.
- (iii) Challenges in data collection, validation, reporting and analysis by the logistics management units that are responsible for these tasks. This is especially relevant in decentralized settings (eight countries), where there are challenges in collecting data from the sub federal levels. In such cases, countries have found innovative ways to collect data in such situations. For example, Kenya's central medical stores will not supply products if reports are not received.

The consequences of lack of sufficient data to inform supply chain decisions include:

- (i) Sub-optimal impact on critical processes:
 - *Quantification and forecasting* projections tend to be inaccurate and result in an over or under supply of products, as was noted in 11 out of the 15 countries reviewed.

⁴³ Health sector strategic plan 2009-2015 pg. 29

⁴⁴ Malawi Ministry of Health 2014-15 HR vacancy analysis

⁴⁵ Tackling the crisis of workforce shortages in the pharmaceutical sector, WHO

- In determining what to *procure*, programs lack visibility on the country's actual demand and stock availability. Consequently, by the time countries are alerted of pending stock-outs, it is often too late and this results in emergency procurements as was noted in Cambodia, Malawi, the Democratic Republic of Congo, Kenya and Zambia.⁴⁶
- *Distribution calculations* are not informed by consumption data, which is one of the key factors for forecasting, resulting in over/under stocking across the supply chain as was noted in the OIG audits of Tanzania, the Democratic Republic of Congo, and Malawi for TB drugs. In an attempt to cope with untimely and inadequate data, India uses a "push" system for HIV and tuberculosis products, where distribution is driven mainly by long term forecast instead of demand by the facilities.

(ii) Limited visibility on the performance of supply chain systems in terms of quality (as measured through stock-out rates, order refill rates and buffer stock levels), response times (as measured by order turnaround times, on time delivery and fill rates), efficiency and economy (as measured by the ratio of transport cost to value of products and total delivered costs).

In the absence of functional logistics systems, critical supply planning processes are based on:

- Proxy data such as morbidity and demographic data, which give an indication but are not an accurate reflection of the demand for and use of commodities over time.
- Assurance work undertaken to obtain supply chain related information. This information is often inadequate as it is not available on a continuous basis and gives a position at a specific point in time. This means that it cannot show whether identified issues are systemic or one-offs. The information collected by assurance providers is also limited to the areas visited and so rarely reflects the magnitude and extent of issues identified as well as their potential impact, for example, whether they resulted in treatment disruptions.⁴⁷

While electronic systems have been prioritized, they do not necessarily tackle the underlying issues. Under the 2014-16 allocation, the Secretariat and partners invested in electronic logistics management information systems to address the lack of consumption data in nine of the 15 countries. These investments in electronic systems have not necessarily improved data accuracy, quality, and timeliness of data due to:

- *Weak underlying manual processes*, such as poor or delayed record-keeping and incomplete data capture, which are carried over when electronic systems are implemented. Thus, the effectiveness of those systems is significantly hampered by the lack of timely and reliable data fed into them.
- *Limited coverage of electronic systems* mean that whilst interventions have tackled problems at the regional or district levels, issues at facility level have not been addressed. As a result, programs are unable to reap the full benefits of an electronic system.
- *Limited impact on human resources issues*: Logistics systems are dependent on workforce numbers and skills; therefore implementing improvements without concomitant investment in human resources limits their effectiveness. For example, Cambodia is rolling out an electronic logistics system. However, the Local Fund Agent reports that there are inadequate levels of human resources (including those with IT skills) at the facility/community level.⁴⁸

Rwanda has implemented effective electronic systems, supported by robust manual processes: This approach has reduced order processing from 5 to 2 days, reduced errors by 70%, and cut back the number of staff needed for warehouse management at the central level. The Rwanda case shows that, when successfully implemented, electronic systems offer real solutions.

Agreed Management Action: See agreed management action 2

⁴⁶ <http://allafrica.com/stories/200408300935.html>; Roll Back Malaria case study (RBM/WG/2012/REP1); <http://www.standardmedia.co.ke/business/article/1144026430/state-in-urgent-measures-to-boost-supply-of-arvs/?pageNo=1>

⁴⁷ The assurance providers do not quantify the extent and magnitude of issues identified.

⁴⁸ See also WHO World Health report, http://apps.who.int/iris/bitstream/10665/170250/1/9789240694439_eng.pdf?ua=1&ua=1

04 Inadequate human resources for service delivery and supply chain management

Inadequate staff levels and skills within the health workforce impacts service delivery across the supply chain.

All 15 countries reviewed identified inadequate human resources as an impediment to effective supply chain management. The lack of qualified human resources has not only affected service delivery but also the safe and efficient distribution of health commodities, and ultimately resulted in commodity losses, expiries, damages. These issues have been attributed to:

(i) Heavy work load for supply chain related staff, due to staff shortages. The World Health Organization reports that there is a ‘dramatic supply chain workforce shortage, with some countries facing vacancy rates up to 71% for public sector posts that require accredited pharmaceutical training’.^{49, 50} For example, Malawi has 19% of pharmacy technicians and 1% of assistants, respectively, in post.⁵¹ In light of staff shortages, treatment of patients is prioritized over tasks viewed as being administrative such as maintenance of stock records. Thirteen out of the 15 countries were unable to account for commodities received due to improper maintenance of stock records which, among other things, was attributed to staff shortages and inadequate skills.⁵² Multiple supply chains deployed by programs and donors also increase the workload of already strained staff at the facilities.

WHO estimates that there was a (global) deficit of approximately 17.4 million health workers in 2013 – of which almost 2.6 million were physicians and over 9 million were nurses and midwives. Regionally, the largest deficit of health workers was in South-East Asia (6.9 million) followed by Africa (4.2 million).

WHO World Health Report 2016

(ii) Limited skills of available human resources: there are inadequate skills for drug quantification and forecasting, distribution planning and inventory controls, all of which have a detrimental effect on stock management processes, as noted in Indonesia, Malawi and Cambodia. At an operational level, supply chain vacancies are typically filled by other health professionals such as nurses, midwives or assistants. For example, 71% of Tanzania’s pharmacies are staffed by workers with no logistics training. Supportive supervision at facility level often does not cover supply chain activities, a missed opportunity to offer on-job training to staff in these positions.

(iii) Low human resource retention: Low compensation and unfavorable conditions in rural areas and in the public sector were identified as impediments to staff involved in supply chain management in the 15 countries reviewed. This has resulted in health workers migrating to cities and/or crossing to the private sector in search of better opportunities. WHO notes that over 70% of the limited number of pharmacists cannot be retained in the public sector and cross to the private sector.⁵³

Interventions not mitigating human resource issues: The most common intervention to address human resource capacity issues is short term training for staff in service. Despite the notable staff shortages, there is limited evidence of investments in pre-service training. Where it has been implemented, such training has happened at the central level, yet human resource capacity issues are predominantly at facility level. Short term solutions, such as integrating systems to reduce staff workload, prioritizing supply chain in supportive supervision and investing in pre-service training, can bring quick wins in this area.

The Secretariat proactively engaged the government of Zimbabwe on human resources where the Government with the support of the Global Fund established the Health Workforce Retention scheme.

2014 Malaria Concept Note 2014

⁴⁹ <http://apps.who.int/medicinedocs/documents/s17997en/s17997en.pdf>

⁵⁰ WHO primarily focuses on and has data related to pharmaceutical skills and not other relevant skills for effective supply chain management e.g. procurement, logisticians, systems strengthening experts etc.

⁵¹ Malawi Ministry of Health 2014-15 HR vacancy analysis

⁵² Audit of Global Fund Grants to the Republic of Tanzania, 2016; Audit of Global Fund Grants to the Republic of Malawi, 2016; Audit of Global Fund Grants to the Republic of Uganda, 2016; Audit of Global Fund Grants to the Republic of Zimbabwe, 2016

⁵³ http://www.who.int/workforcealliance/about/hrh_crisis/en

Agreed Management Action: See agreed management action 2

05 Inadequate financial resources for supply chain transformation

Funding for supply chain activities is challenging due to limited government commitments, deprioritization of related activities in funding applications and ineffective management of partnerships

Funding remains one of the biggest challenges for supply chain transformation in all 15 countries, due to:

Limited government commitment to funding supply chain management:

Although the government is primarily responsible for funding supply chain activities, governments have not met their financial obligations towards supply chain activities in six countries reviewed. In Tanzania and Zimbabwe, operations of central medical stores were impacted by accumulated government debts amounting to US\$52m and US\$23m, respectively.⁵⁴ Under the Global Fund's principle of additionality⁵⁵ and the concept of counterpart funding/ willingness to pay, governments are expected to mobilize resources to support funded programs. However, as was noted in an OIG Grant-Making audit report, there were limitations in the Secretariat processes to track whether the commitments are honored by governments.⁵⁶

Statistics on health financing show that total health expenditure per capita is still low in many developing countries. Most developing countries spent less than 8% of their gross domestic product (GDP) on health, and many less than 5%.

WHO World Health Report 2016

Limited Global Fund resources for supply chain management: While the Global Fund has made significant investments in supply chain management overall, these investments have been limited in terms of the investments required to meaningfully transform in-country supply chain systems, and is not commensurate to this area's strategic importance. In the 15 countries reviewed, the average investment in supply chain management from 2003 to 2015 is 5%. Investments have also focused on the central/regional level, without requisite attention to the "last mile" where most of the issues are identified; this was particularly noted in Malawi, Uganda, Zimbabwe and Pakistan.

Supply chain deprioritized in light of more pressing program needs: As mentioned, funding for supply chain systems is often deprioritized in concept notes due to more pressing program needs such as treatment. US\$73.5 million supply chain related requests for funding in the 15 countries reviewed were listed in the "above allocation" request for funding.⁵⁷ As a result, their chances of being funded were significantly reduced. For example, the Ghana HIV/TB concept note identified supply chain as a critical risk but, as flagged by the Technical Review Panel and the Grant Approvals Committee, no funds were allocated to resolving these issues. This has been attributed to the limited involvement of supply chain stakeholders at the Country Dialogue stage. In addition, grants specific to health system strengthening are no longer encouraged. Although supply chain has received greater attention when considered under health system specific grants (e.g. up to 70% of the Cambodia and Pakistan health system strengthening grants were allocated to address supply chain issues), such grants have been discouraged under the new funding model due to past performance issues. As a result, only six from 15 countries reviewed have health system specific grants.

Ineffective leveraging of partnerships to address supply chain issues: Because significant investments are required to address supply chain issues, partnerships are key to providing the requisite level of resources. However, challenges in setting up effective partnerships remain at the country level:

⁵⁴ Strategic Review of MSD Tanzania, 2015

⁵⁵ The Global Fund is supposed to only finance programs when it is assured that its assistance does not replace or reduce other sources of funding, i.e. the Fund will only provide additional resources

⁵⁶ Audit of the Global Fund's Grant Making processes, 2016; https://www.theglobalfund.org/media/2644/oig_gf-oig-16-003_report_en.pdf

⁵⁷ Above allocation relates to requests above the country funding allocation which although technically sound is only funded through incentive funding available and/or is kept on a register of unfunded quality demand.

(i) Inadequate leadership to drive partnerships at country level: Without effective leadership, mechanisms that bring governments and development partners together such as Country Coordinating Mechanisms, donor groups, or commodity security groups primarily focus on resolving short term issues, as opposed to finding lasting solutions to supply chain issues. For example, Country Coordination Mechanisms have generally not liaised with national and/or in-country stakeholder forums to address supply chain issues. An Interagency Supply Chain Group⁵⁸ has been established to bring together key partners. However, discussions in this group have not always resulted in tangible actions to meaningfully transform supply chain issues at the country level. For example, the group developed performance indicators for procurement and supply chain management but it cannot hold agencies accountable to use these indicators in their respective programs.

(ii) Private sector not effectively leveraged to address supply chain issues: Private sector involvement has helped mitigate supply chain challenges in the public sector. The use of private sector actors in Malawi, Rwanda and Kenya has contributed to addressing many of the supply chain related constraints and challenges in these countries, for example by helping to improve storage and 'last mile' distribution of health commodities. However, mechanisms by which the private sector can be engaged have not been clearly articulated and efforts to better leverage the private sector are often resisted by Central Medical Stores. In cases where proper systems have not been put in place to manage the outsourced firms, the deployment of the private sector firms has not fully resolved supply chain issues as was noted in the OIG audits of Nigeria, Pakistan and the Democratic Republic of Congo.⁵⁹

(iii) The Secretariat could better leverage partnerships: In its 2017-22 strategy, the Global Fund cites mutually accountable partnerships as a critical enabler for building resilient and sustainable systems for health and improving resource mobilization. However, there is limited evidence of this in the 15 countries reviewed:

- *The Implementation through Partnership project is not used to adequately address supply chain issues*: This project was cited as a mitigating measure for treatment disruption in the corporate risk register. Although the project was implemented in six⁶⁰ countries reviewed, it was not used to find solutions for critical supply chain issues otherwise identified as critical in these countries.
- *Partnerships not effectively managed*: The Secretariat has entered into partnerships with some international organizations to optimize access to quality health products in countries receiving Global Fund financing e.g. Global Drug Facility (GDF) and the Center for Pharmaceutical Advancement and Training (CEPAT). The Secretariat however lacks mechanisms for assessing the effectiveness of these partnerships in servicing countries. For example, the effectiveness and utility of GDF in delivery of TB medicines has not been evaluated since 2003, despite the Global Fund purchasing around US\$82 million dollars of TB drugs from GDF, as well as other support services to TB programs. In addition, the memorandum of understanding with CEPAT is listed in the corporate risk register as a mitigation to quality issues. However, the memorandum, which facilitates access to CEPAT services by funded programs for strengthening regulatory systems, has not been operationalized since it was signed over a year ago.

⁵⁸ Members of the group include DFID GAVI, German Development Bank, Global Affairs Canada, Global Drug Facility, Norad, The Bill and Melinda Gates Foundation, The Global Fund, The World Bank, UNICEF, UNFPA, USAID WHO and World Food Program. It aims to provide better coordination and effective support to country efforts in ensuring sustainable access to high quality essential health commodities for beneficiaries

⁵⁹ Audit of the Global Fund grants to the Republic of: Nigeria (2016); Pakistan (2015) and Democratic Republic of Congo (2016). https://www.theglobalfund.org/media/2655/oig_gf-oig-16-014_report_en.pdf; https://www.theglobalfund.org/media/2631/oig_gf-oig-15-014_report_en.pdf; https://www.theglobalfund.org/media/2663/oig_gf-oig-16-022_report_en.pdf

⁶⁰ Democratic Republic of Congo, Ghana, Kenya, Malawi, Nigeria and Pakistan

- *No framework to guide partnership approach:* The Secretariat does not have a framework to guide its approach to partnerships. Consequently, the type and extent of collaboration with partners tend to be driven by individuals and goodwill, and rarely involve negotiated commitments or clearly articulated roles and responsibilities. In contrast, the US government has developed such a framework to provide guidance on due diligence and management of partnerships at the country level.⁶¹

Agreed Management Action: See agreed management action 2

⁶¹ USG Health Partnership Assessment Tool; Promoting Partnerships to Advance Global Health Initiative Objectives, 2013

06 Challenges in Secretariat structures and processes in managing supply chain issues

Challenges in program implementation have exposed a number of tensions in the Global Fund operating model, which are compounded by a lack of clarified and effective structures at the Secretariat.

Supply chain management had not been prioritized by the Secretariat prior to 2016. As was noted in the 2015 OIG report on Procurement and Supply Chain Management at the Global Fund,⁶² strategies, structures, systems and processes in place have primarily focused on improving procurement, leaving supply chain issues to be addressed at a portfolio level. The Supply Chain Department, established in August 2016, is developing a strategy that is expected to inform how the Secretariat's structures, systems and processes will be better aligned to support supply chain management.

Perceived limitations of the Global Fund model: According to its framework document, the Global Fund was set up as a financing mechanism and not an implementing entity.⁶³ However, challenges in program implementation (including supply chain management) bring into question the effectiveness of the current model in finding pragmatic solutions to challenges. The result is a number of emerging tensions between the founding principles of the Global Fund:

- Tensions between the Global Fund's mandate as a financing mechanism and its expected roles in program implementation: Under the current model, Principal Recipients are responsible for the implementation of all procurement and supply chain management activities with the Secretariat only providing oversight to ensure access to effective and quality-assured health products. The challenges identified in supply chain often call for a more hands-on approach as has been deployed in the Nigeria supply chain transformation project.⁶⁴ However, the Board has not yet clearly formulated its appetite for a significantly expanded role in implementing country supply chains and, assuming such appetite exists, a clear understanding of the implications in terms of mandate, trade-offs and level of resources required to achieve success.
- Tensions between the effectiveness in getting commodities to beneficiaries versus country ownership and sustainability: As noted in finding 02, the Secretariat and other partners have supported the creation of parallel supply chain systems in many of the countries reviewed (including the Democratic Republic of Congo, Malawi, Cambodia and Pakistan), because of weaknesses in country systems and their inability to get health commodities to beneficiaries. However, such parallel processes are not sustainable and are contrary to the principles of country ownership and sustainability.

Without necessarily calling into question the relevance of this business model, which has strong stakeholder consensus and deep political support, there is nonetheless a pressing need to tailor the operationalization of this model to fit the situation in different environments, as suggested by significant weaknesses in both program implementation and quality of oversight including supply chain identified in the OIG's reviews of several high-impact portfolios.

OIG Annual Opinion 2015

Inadequate oversight over supply chain management: The Board and the Management Executive Committee have provided limited strategic direction and comprehensive oversight to procurement and supply chain management-related activities. In particular:

⁶² Audit of Procurement and Supply Chain Management at the Global Fund (2015); https://www.theglobalfund.org/media/2625/oig_gf-oig-15-008_report_en.pdf

⁶³ The Global Fund Framework Document

⁶⁴ The Nigeria supply chain integration project is designed to improve patient access and availability of medicines – through visibility, control and efficient Last Mile delivery. The project will also ensure a tighter integration of National health commodities supply chains between Federal & State, Donors, Public & Private Sector, and across commodities

(i) At the Board level: Until supply chain was highlighted at the 34th Board meeting in 2015,⁶⁵ there had been limited oversight by the Board on related matters. Oversight of supply chain is also not allocated to any specific Board committee. As a result, supply chain was not given sufficient attention by the Board between 2008 and 2014. There has been limited traction or follow-up by the Secretariat on the 2007 Board decision to establish a capacity-building services and supply-chain-management assistance mechanism to help countries address challenges and constraints in their supply management systems.⁶⁶

(ii) At the Secretariat level: Supply chain only became a priority for the Secretariat in 2016. Prior to this, there had been limited deliberations on supply chain by the Management Executive Committee level who had prioritized procurement matters. The Secretariat's process to develop a supply chain management strategy started in 2014 but only gained traction in 2016. At the time of the audit, the Secretariat procurement and supply chain management was listed under the strategic objective related to building resilient and sustainable systems for health. However, it did not have any supply chain related key performance indicators in place at the operational level. The OIG was informed that they were under development and are expected to be in place by the second quarter of 2017. Similarly, there are limited provisions for supply chain management in grant agreements and operational policies which primarily focus on procurement. There are limited supply chain related indicators in grant performance frameworks to measure performance and drive desired change in supported programs.

Secretariat structures, systems and resources for addressing supply chain issues are sub-optimal:

(i) Limitations in current Secretariat structures: The Secretariat's approach to addressing supply chain issues is fragmented across the Grant Management and Finance Divisions⁶⁷ and five departments.⁶⁸ Relevant Secretariat staff report to different heads/ managers, all of whom have different objectives, priorities and performance measures. While the Secretariat has clarified roles and responsibilities among the different departments involved in procurement and supply chain management following an OIG audit report on the area, this has not been revisited in light of the newly established supply chain department.⁶⁹

This siloed approach reinforces the focus on addressing specific functional issues as opposed to taking a holistic approach to resolve supply chain issues (see finding 2.1). This is especially important given the fact that procurement and supply chain management functions are interrelated. Recent OIG reports have confirmed this disconnect. For example, the disconnect between the Country Team and the Pooled Procurement Mechanism team was clear when a shipment of anti-malaria drugs valued at US\$1.7 million was delivered to a Principal Recipient in Uganda. The recipient was not expecting the delivery and had not made arrangements for storage.⁷⁰ In another example, the audits of Tanzania and Uganda found unreconciled differences between commodities supplied from the Global Fund's Pooled Procurement Mechanism and stocks recorded as received by the central warehouse which had not been detected by the Secretariat.⁷¹ At the time of this audit, modalities to drive collaboration and ensure synergies across the work of all departments involved in supply chain management related functions (including the Country teams) were not in place, even though they are expected to contribute significantly to the implementation of the supply chain strategy.

⁶⁵ Global Fund Board meeting in November 2015 (GF/B34/25)

⁶⁶ Board decision GF/B15/DP15

⁶⁷ FISA is the Finance, Information Technology, Sourcing and Administration Division (FISA)

⁶⁸ The new supply chain department and the health product management specialists which is part of the Country Team are under the Grant Management division while the Pooled Procurement Mechanism and the Private Sector Co-Payment Mechanism are located, alongside other purchasing-related functions including Wambo, under the Sourcing Department in the Finance Division. There is also the RSSH team that is looking to strengthen procurement and supply chain management in the Strategic, Investment and Impact Division.

⁶⁹ Audit of Procurement and Supply Chain Management at the Global Fund (2015); https://www.theglobalfund.org/media/2625/oig_gf-oig-15-008_report_en.pdf

⁷⁰ Audit of Procurement and Supply Chain Management at the Global Fund, 2015

⁷¹ Audit of the Global Fund grants to the Republic of Tanzania, 2016, Audit of the Global Fund grants to the Republic of Uganda, 2016

(ii) Limitations in available human resource numbers: Procurement and supply chain specialists are not resourced at the same levels as other technical functional areas.⁷² The OIG noted that:

- There has been an increase in the number of Finance Officers (45) compared to Health Product Management Specialists (25) since 2012. This means that Health Product Management Specialists are more thinly spread across several portfolios with significant supply chain issues. For example, four health product management specialists oversee eight High Impact countries that represent 28% of the 2014-2016 allocation and 42% of total Procurement and Supply Chain Management spend from 2014 to 2015. The 16 resources deployed under the newly formed Supply Chain Department will not alleviate this issue since initial considerations show their work will be independent, rather than complementary, of the role undertaken by the Health Product Management Specialists.
- Diagnostics products represent 8% of Global Fund investments in health commodities in the 15 countries reviewed (to put this into context, it is higher than the investment in tuberculosis drugs in the 15 countries reviewed). Despite the importance of diagnostics in scaling up programs and the limited relevant expertise in Country Teams, there is only one laboratory specialist at the Secretariat.

The *Differentiation for Impact* project assessed the resources and processes adopted for grant portfolios and performed adjustments to align resources and processes with size and complexity of grant portfolios. However, the analysis was mainly based on grant size and portfolio risk classification and did not consider the known supply chain challenges. Consequently, the work performed by the relevant staff is tailored to focus on what it is possible to achieve, rather than what needs to be achieved. This has resulted in staff mainly focusing on grant-making activities with a limited role being played in monitoring procurement and supply chain management activities during implementation of grants, when most of the issues noted materialize.

(iii) Multiple skill sets required to resolve supply chain management issues: With regard to skills, all health products management officers are qualified and experienced pharmacists with varied levels of experience in logistics management. These skills sets are adequate to fulfill their current roles.⁷³ However, depending on the Global Fund's role in supply chain management going forward, the Secretariat is likely to require a cross range of supply chain related skills, such as in pharmaceuticals, logistics, laboratory, quality assurance, management and health system strengthening.

(iv) No system at the Secretariat for supply chain related data: Currently, there is no system at the Secretariat to record and analyze supply chain data for decision-making. The information available at the Secretariat is limited insofar as it only records stock levels at central levels. Information with regard to stock-outs, expiries and unaccounted stock is obtained from targeted assurance work on an ad hoc basis only.

The Secretariat is currently implementing the *Accelerated Integration Management (AIM)* project that seeks to integrate and align processes, data and systems to support efficient portfolio management. However, while information for other functions is well advanced in AIM, supply chain related information is limited which is a missed opportunity to strengthen supply chain data at the Secretariat.

Development of strategies underway: At the time of this audit, the Secretariat was developing strategies for RSSH. However, while the two processes are related, the Secretariat has not put mechanisms in place to ensure that the two strategies are aligned. For example, the steering

⁷² Review of oversight of Grant Procurement and Supply Chain Management arrangements (2010) and Internal Audit of the Integration of Specialists into Country Teams (2013), Procurement and Supply Chain Management at the Global Fund (2015)

⁷³ 4% have formal logistics training; 80% have over 5 years logistics experience (58% over 10 years and 8% none); 17% have commercial logistics experience.

committee established to oversee the development of the supply chain strategy does not have representation from the RSSH team.

Agreed Management Action 3: The Secretariat will:

- (i) Agree a plan to structure both the Supply Chain and the Procurement teams and implement an improved structure and related systems and processes that clarifies roles, responsibilities and accountabilities and ensures the effective use of available procurement and supply chain management resources.
- (ii) Define oversight arrangements for procurement and supply chain management at Secretariat level to ensure increased visibility and accountabilities over this function.

Owner: Executive Director

Target Date: 30 June 2018

07 Assurance mechanisms unable to support the identification and mitigation of supply chain related risks

The Secretariat does not receive timely assurance on supply chain related matters, which limits its visibility of in-country risks to inform decision-making.

With no in-country presence, the Global Fund's business model relies on assurance from internal and external assurance providers to effectively manage the risks inherent in its programs. However, assurance mechanisms do not provide timely information with regard to supply chain related risks in the corporate risk register (treatment disruption, substandard quality of health products and theft/diversion of non-financial assets).

Limited resources allocated to supply chain assurance: Although procurement and supply chain related risk has been identified as critical in the achievement of impact, there is a disparity between the Secretariat's assessment of supply chain related risk and the level of assurance resources allocated. The Local Fund Agent is the primary source of Secretariat-directed assurance over procurement and supply chain management; however:

- Only approximately 12% of the Local Fund Agent budget is allocated to supply-chain activities in comparison to the level of procurement and supply chain related grant expenditures, which is 68% in the 15 countries reviewed.
- The limited budget allocated to Local Fund Agent reviews over procurement and supply chain management is not fully utilized, with only 67% of these budgets utilized in the 15 countries reviewed. For example, despite major supply chain related issues identified in Zimbabwe, Malawi, Indonesia and the Democratic Republic of Congo, a significant proportion of the agent's procurement and supply chain budgets from 2014 to 2015 went unused.⁷⁴
- The Local Fund Agent procurement and supply chain experts in 13 out of the 15 countries reviewed are not resident in-country. For example, the same expert provided significant services to Ghana, Nigeria, Tanzania and Zimbabwe in 2014 and 2015, all of which are High Impact portfolios, with supply chain issues rated as high risk. This limited availability across a wide spectrum of countries with high prevalence of supply chain issues impacts the agent's ability to identify and respond to local supply chain issues in a timely manner.

The Pakistan Local Fund Agent has better coverage of the risks since they have a relevantly larger budget for procurement and supply chain management than other countries (29% vs 12% respectively).

Limited assurance over supply chain related risks: A review of the effectiveness of assurance mechanisms to provide supply chain related information for decision-making revealed:

(i) Limited coverage of supply chain activities: Assurance work primarily focuses on procurement with limited (if any) review of supply chain at the country level. Supply chain related reviews by the Country Teams and Local Fund Agents takes place primarily during the grant-making process when assessing capacities of recipients in managing the grants. Assurance activities are limited once implementation is underway, although this phase of the grant lifecycle is when most supply chain risks materialize. Local Fund Agents' coverage of stock-outs, waste, unaccounted stock and quality assurance of health commodities is limited in 14 out of the 15 countries reviewed.

(ii) Limitations in assurance tools deployed: Routine assurance tools (the onsite data verification and country profiles) that previously provided supply chain assurance have recently been replaced with health facility assessments which will be performed every 2-3 years. While these assessments provide more extensive coverage than onsite date verifications, they do not provide real time supply chain related data for decision-making.

⁷⁴ The proportions were 88%, 68%, 63% and 55%, respectively.

Information collected by assurance providers is, to a large extent, irrelevant for decision-making: While the information collected by the Local Fund Agent through the Progress Update and Disbursement Request (PUDR) may be useful for general monitoring, it is less relevant for decision-making or mitigating emerging issues related to supply chain. The Local Fund Agent mainly reports information on stock-outs at the central level and does limited review at the health facilities level where most issues occur. For example, OIG audits in five countries noted that while central levels had sufficient stocks, significant stock-outs were reported at facility level. Information is not timely and therefore, by the time stock-outs are reported in the PUDR to the Secretariat, it is often too late to act.

Assurance related projects have not addressed supply chain issues: A review of the Risk and Assurance project at the Secretariat revealed:

Risk and assurance project has not translated into any change in approach: The Risk and Assurance project has been rolled out by the Secretariat to proactively address significant risks facing implementing countries. The OIG noted that this project has not materially impacted the assurance sought over supply chain risks since it did not result in any differences in the terms of reference for, or investments made in, the relevant assurance providers. For example, while six of the pilot countries identified a mismatch of assurance spending and health products risks, no changes were made in their allocated assurance budgets nor in the terms of reference of the assurance providers.⁷⁵

Risk and Assurance framework inadequate in addressing supply chain related risks: A draft supply chain assurance framework has been developed by the Secretariat. The framework has been developed around the current Local Fund Agent model. Consequently most of those who responded to the request for information were accounting firms with limited public health supply chain experience. Other assurance providers with more experience in supply chain used by other donors were not considered.

Agreed Management Action 4: The Secretariat will develop a procurement and supply chain management specific assurance framework that lays out principles that will guide country specific assurance under the differentiated approach. The assurance plan will be linked to the Secretariat's broader assurance framework to avoid fragmentation in approach. Assurance plans will be developed for the 12 priority countries.

Owner: Head Grant Management

Target Date: 30 June 2018

⁷⁵ Cambodia, Ethiopia, Indonesia, Somalia, Sudan and Zambia

V. Table of Agreed Actions

#	Category	Agreed Management Action	Target date	Owner
1	Supply chain strategy	The Secretariat shall develop a comprehensive strategy that addresses all the significant supply chain health system issues identified in the in-country supply chain audit. In particular, the strategy will define the Global Fund's scope of responsibility, oversight, and necessary initiatives that must be taken to support the resolution of in-country supply chain challenges. This strategy will take into account proposals detailed in the building resilient systems for health strategy that aims to strengthen and expand the capacity of health systems to address health issues in a sustainable, equitable and effective manner.	30 June 2018	Head Grant Management
2	Strengthening in-country supply chain systems	<p>The Secretariat will conduct in-country supply chain diagnostic studies in 12 prioritized countries and use these to develop specific plans on how their supply chain systems will be strengthened. Each country plan will include plans detailing:</p> <ul style="list-style-type: none"> • The creation/ strengthening of effective country governance structures with the support of a partner-financier group in order to strengthen in-country supply chain accountability and coordination as well as the establishment/ reinforcement of a costed country supply chain strategy; • Identification and implementation of mechanisms to support the collection of key supply chain data required by the Secretariat for decision making; • Establish baseline on in-country supply chain capacity and identify suitable programs to close capacity gaps; and • A plan on how funds for country supply chain transformation will be mobilized. <p>The Secretariat will also develop a plan for conducting in-country supply chain diagnostic studies for the rest of the relevant portfolios.</p>	30 June 2018	Head Grant Management
3	Organization of the procurement and supply	<p>The Secretariat will:</p> <p>(i) Agree a plan to structure both the Supply Chain and the Procurement teams</p>	30 June 2018	Executive Director

	chain management structure	<p>and implement an improved structure and related systems and processes that clarifies roles, responsibilities and accountabilities and ensures the effective use of available procurement and supply chain management resources.</p> <p>(ii) Define oversight arrangements for procurement and supply chain management at Secretariat level to ensure increased visibility and accountabilities over this function.</p>		
4	Supply chain assurance framework	The Secretariat will develop a procurement and supply chain management specific assurance framework that lays out principles that will guide country specific assurance under the differentiated approach. The assurance plan will be linked to the Secretariat's broader assurance framework to avoid fragmentation in approach. Assurance plans will be developed for the 12 priority countries.	30 June 2018	Head Grant Management

Annex A: General Audit Rating Classification

<p>Effective</p>	<p>No issues or few minor issues noted. Internal controls, governance and risk management processes are adequately designed, consistently well implemented, and effective to provide reasonable assurance that the objectives will be met.</p>
<p>Partially Effective</p>	<p>Moderate issues noted. Internal controls, governance and risk management practices are adequately designed, generally well implemented, but one or a limited number of issues were identified that may present a moderate risk to the achievement of the objectives.</p>
<p>Needs significant improvement</p>	<p>One or few significant issues noted. Internal controls, governance and risk management practices have some weaknesses in design or operating effectiveness such that, until they are addressed, there is not yet reasonable assurance that the objectives are likely to be met.</p>
<p>Ineffective</p>	<p>Multiple significant and/or (a) material issue(s) noted. Internal controls, governance and risk management processes are not adequately designed and/or are not generally effective. The nature of these issues is such that the achievement of objectives is seriously compromised.</p>

Annex B: Methodology

The Office of the Inspector General (OIG) performs its audits in accordance with the global Institute of Internal Auditors' (IIA) definition of internal auditing, international standards for the professional practice of internal auditing (Standards) and code of ethics. These Standards help ensure the quality and professionalism of the OIG's work.

The principles and details of the OIG's audit approach are described in its Charter, Audit Manual, Code of Conduct and specific terms of reference for each engagement. These help our auditors to provide high quality professional work, and to operate efficiently and effectively. They also help safeguard the independence of the OIG's auditors and the integrity of their work. The OIG's Audit Manual contains detailed instructions for carrying out its audits, in line with the appropriate standards and expected quality.

The scope of OIG audits may be specific or broad, depending on the context, and covers risk management, governance and internal controls. Audits test and evaluate supervisory and control systems to determine whether risk is managed appropriately. Detailed testing takes place across the Global Fund as well as of grant recipients, and is used to provide specific assessments of the different areas of the organization's' activities. Other sources of evidence, such as the work of other auditors/assurance providers, are also used to support the conclusions.

OIG audits typically involve an examination of programs, operations, management systems and procedures of bodies and institutions that manage Global Fund funds, to assess whether they are achieving economy, efficiency and effectiveness in the use of those resources. They may include a review of inputs (financial, human, material, organizational or regulatory means needed for the implementation of the program), outputs (deliverables of the program), results (immediate effects of the program on beneficiaries) and impacts (long-term changes in society that are attributable to Global Fund support).

Audits cover a wide range of topics with a particular focus on issues related to the impact of Global Fund investments, procurement and supply chain management, change management, and key financial and fiduciary controls.

Annex C: Message from the Executive Director

Programs supported by the Global Fund have made significant progress, saving more than 20 million lives in the past 15 years, largely due to the successful delivery of health products that have been enormously effective in preventing and treating HIV, tuberculosis and malaria.

Specifically, programs supported by the Global Fund have delivered:

- More than 700 million mosquito nets to protect families from malaria;
- More than 16 million courses of treatment for TB;
- More than 10 million people on antiretroviral therapy for HIV

The impact of supplying those commodities is clear: Mortality rates among children under five – by far the most vulnerable group – fell by 69 percent between 2000 and 2015. In East and southern Africa, the regions most affected by HIV, AIDS-related deaths have decreased by 36 percent and treatment coverage has more than doubled since 2010. The number of people dying of TB fell 22 percent between 2000 and 2015.

Clearly, procurement and supply chains are delivering. In fact, the targets that have been set have been met. What was thought impossible only 15 years ago has been achieved.

But we can do better. Procurement and supply chain processes have been identified as requiring additional action, by our own internal risk assessments, including the evaluation of key roadblocks to progress through a broad-ranging group of key global health actors through Global Fund-initiated “Impact Through Partnerships,” as well as in audits of programs in several countries by the Office of the Inspector General (OIG.) The OIG Audit Report on Global Fund In-Country Supply Chain Processes, further validates that extensive body of work.

The OIG is a central and important part of providing assurance, conducting independent audits and investigations to complement the active risk management and controls put in place by the Secretariat with oversight by the Board of the Global Fund.

As this report indicates, procurement and supply chain represent a continuum. The work of procuring drugs and medical supplies in a timely way is only the first step in getting them through a supply chain, so that they can actually reach the people who need them, at clinics and in villages that often present obstacles in the “last mile.”

Although stock-outs sometimes occur, we have consistently preventing disruptions of supply by operating a rapid supply mechanism starting in 2015 that responds to emergency orders for antiretroviral drugs for HIV, artemisinin combination therapy for malaria, and rapid diagnostic tests for TB. The rapid supply mechanism is accessible in all countries supported by Global Fund grants, and leverages Global Fund Framework Agreements that require vendor-managed inventory.

The Global Fund began investing heavily in procurement four years ago. Expanding pooled procurement has saved more than US\$650 million, which is money that countries now use to save more lives and improve systems. On Time and In Full (OTIF) deliveries increased from 36 percent in 2013 to 80 percent in 2016 for the Pooled Procurement Mechanism (PPM), which now covers 60 percent of procurement supported by the Global Fund and is at levels achieved in the private sector.

But OTIF is measured at a central warehouse level, and the ‘last mile’ can be significantly more challenging. Therefore, in 2016, the Global Fund launched a new supply chain initiative, including the development of a supply chain strategy, conducting in-depth diagnostics in 12 high-risk countries by the end of 2017, and work with government and private sector partners to implement supply chain transformation projects. The Global Fund created a new Supply Chain Department within the Grant

Management Division, and appointed senior managers with significant private sector experience to implement a coordinated approach.

Many pieces of our new approach are already underway. For instance:

- **Project Last Mile** is a public-private partnership designed assist in improving the availability of critical medicines by building the capacity of Ministries of Health. The partnership leverages the supply chain expertise of the Coca-Cola Company and its bottlers across Africa and includes USAID, the Global Fund, the Bill & Melinda Gates Foundation, local implementation partners, and Ministries of Health, with a goal of supporting up to 10 countries over the next 5 years.
- **Partnership in Nigeria:** Despite many complications, the Global Fund is establishing special partnerships on supply chain in many countries. In Nigeria, through joint planning, co-investment and collaboration with the national Government and partners including the UK's Department for International Development, the Global Fund is investing US\$20 million to support supply chain integration for otherwise multiple vertical programs. The goal is to address structural problems, reduce cost and improve customer service by improving the efficiency/performance of the public-sector health product supply-chain.

Overall, the Global Fund's new strategic approach on supply chain aims to significantly improve product availability, reduce product waste, reduce supply chain costs, significantly improve forecast accuracy and also increase inventory turnover, which in itself can reduce costs and waste.

As we implement this work, we welcome the Audit Report by the Office of the Inspector General (OIG) on the Global Fund In-Country Supply Chain Processes. The report identifies many of the challenges that are already being addressed with the new supply chain strategy and other transformative measures.

The audit encompasses agreed management actions, nearly all of which were initiated as part of the supply chain management project launched in 2016 and so validate the work that was begun, include:

- The Global Fund is developing a comprehensive supply chain strategy that will define a scope of responsibility, oversight, and necessary initiatives to address supply chain challenges. The strategy will take into account proposals detailed in the building resilient systems for health strategy that aims to strengthen and expand the capacity of health systems to address health issues in a sustainable, equitable and effective manner.
- The Global Fund will conduct in-country supply chain diagnostic studies in 12 priority countries and use these to develop specific plans to strengthen supply chain systems. Each country plan will include plans detailing: Strengthening country governance structures with the support of a partner-financier group to reinforce supply chain accountability and coordination, as well as a costed country supply chain strategy; mechanisms to support key supply chain data; programs to close capacity gaps; and mobilization of funds for country supply chain transformation.
- The Global Fund will implement a plan to structure both the Supply Chain and the Procurement teams and implement an improved structure that clarifies roles, responsibilities and accountabilities and ensures the effective use of available procurement and supply chain management resources.
- The Global Fund will define oversight arrangements for procurement and supply chain management to ensure increased visibility and accountability.
- The Global Fund will develop a procurement and supply chain management specific assurance framework that lays out principles that will guide country specific assurance under the differentiated approach. The assurance plan will be linked to the Secretariat's

broader assurance framework to avoid fragmentation in approach. Assurance plans will be developed for the 12 priority countries.

The Global Fund is constantly evolving, to improve. Based on extensive input, including from OIG reports, from best-practice in the private sector, and from in-country experience, we are working to fulfil our commitment that people affected by diseases get the supplies they need.

The Global Fund partnership has made exceptional progress towards the global goal ending epidemics. We are grateful for the suggestions so that products get to the maximum number of people who need them to achieve the greatest impact.

Respectfully,

Mark Dybul