

THE IMPACT OF COORDINATION ON HEALTH COMMODITY SECURITY IN SIERRA LEONE

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ABSTRACT

Technical Working Groups (TWG) in supply chain management comprise stakeholders, including government and non-government actors. The ability of these actors to articulate a collective focus to resolving identified challenges, irrespective of the interests and objectives of their affiliated institutions, provided one aligned front and strategies for tackling health supply chain management challenges in Sierra Leone. Relying on desk reviews of assessment reports and technical reports on different health supply chain operations revealed challenges of poor data visibility, low quality of LMIS data, and parallel operations within the system using various tools. Using the available and scarce resources via coordinated effort by the TWG, the challenges received attention, and there was a change of projection and a better narrative towards health commodity security.

KEYWORDS

Coordination, Commodity Security, Technical Working Group

1. INTRODUCTION

The synchronization of supply chain management domains and decision actors at all levels comprises of the needed coordination to getting health commodities in the right quality and quantity, at the right time and cost, in the health facilities for those that needs them for diagnosis and treatment. Coordination implies there must be unity of purpose and efforts towards a common health commodity security goal, which support scenarios where anyone will get health commodities at any health facility and anytime, when it is prescribed [1], [2]. The pursuit of commodity security has been made possible by the coordinating body in Sierra Leone. Different stakeholders are represented in the Sierra health supply chain management coordinating body and platform, to include representatives of donors like the USAID, the Foreign Commonwealth Development Organization (FCDO), The World Bank, UNFPA, The Global Fund's Principal Recipients and UNICEF, in addition to Implementing Partners like Global Health Supply Chain-Procurement and Supply Management (GHSC-PSM) Project, World Vision, CARE, Partners in Health, Clinton Health Access Initiative (CHAI) and Project Last Mile. It also includes various agencies of the host government like the Directorate of Pharmaceutical Services (DPS) of the Ministry of Health. National Medical Supply Agency (NMSA), other sub-groups and the district level departments, working together to ensure commodity security. Guided by adequate terms of reference, the coordinating body engages in decisions and pursuits in favor of commodity security, as well as leveraging the strengths of respective players within supply chain

management functions towards greater result [3], reflecting alignment of collective interest that is above any incompatibility that may exist. Furthermore, the strengths, capacity, competence and resources of constituent members of the coordinating technical working body compensate and reconciles each other for greater good towards health commodity security [4]. The enabling environment created by the coordinating body ensures cooperation amongst implementing partners to avoid duplication and repetition of supply chain implementation efforts at all levels because there is information sharing for action and visibility [5]. Considering the importance of coordination, what benefits has it achieved towards health commodity security in Sierra Leone?

This paper researched the manifested benefits of the coordinating technical working body and mechanism in Sierra Leone. A blend of the subtopics below suggests coordination impacts all domains of health supply chain management in Sierra Leone. The first section provides a background of the study

1.1. Background

In 2019 and 2020, the technical working group respectively conducted supportive supervision and reviewed LMIS data of the health supply chain system. The supportive supervision was to assess how the logistics management information system (LMIS) tools were used to manage inventory of health commodities at the health facilities, district and central medical stores. Both the assessment and review reveal some deficiencies in the national health supply chain of the country. These deficiencies were related to the Standard Operating Procedure (SOP) developed in 2010, and still in use in 2021, were no longer relevant. Furthermore, operators of the system created different, parallel and non-standardized procedures in their operations across all levels of the country's health supply chain management system. For example, there were no uniform way to requesting emergency orders by health facilities, roles and responsibilities were not clearly defined especially with the entrance of the National Medical Supply Agency (NMSA) which is a new national players and stakeholder, the development of parallel reporting and receiving forms, the bulkiness of the 2010 LMIS forms like the Requisition and Issue Voucher (RIV), discouraged facility personnels from using them, the change from Channel digital platform to mSupply and DHIS-2 for national visibility of stock levels and management, the non-inclusion of the community health workers (CHW) as essential part of the last mile distribution and finally the challenges with inventory management at all levels where the physical count of inventory significantly differ from the count in the inventory management system.

These deficiencies led to the following inefficiencies in the system. First is the non-visibility of the logistics management information system (LMIS) data at the health facility. Second is the extreme low reporting rates of health facilities. Third is the low usage of LMIS data for resupply decision and for forecasting of health commodity need exercises in the country. And finally stock out of live saving commodities were prominent.

2. INTERVENTIONS

Three Interventions were pursued by the Technical Working Group (TWG) to arrest and turn the challenging situations around

2.1. Sensitization and Awareness Creation

In 2021, GHSC-PSM in collaboration with NMSA and DPS worked with the Technical Working Policy Subgroup sensitize and convinced key stakeholders in the country on the need to update

the SOP and to further consider all factors, interest and contributions in operationalizing an updated functional system.

2.2. Development of a new SOP

Securing the buy-in of all stakeholders provided the desired momentum, energy and effort that led to the development of the new SOP in 2022. The interest of all stakeholders were aligned in the various procedures of the new SOP to include the procedures of interfacility transfer, the management of risks at all levels, the merging of daily dispensing report (DDR) with the Monthly Facility Report for Health Commodities (MFR-HC) to encourage reporting by health facility personnel, the inclusion of community health workers reporting process and tools. Constituents of the TWG that were involved include donors like USAID, UNICEF, UNFPA, FCDO. National players like the office of the DPS, NMSA, NMCP, and DHMTs. Additionally, representatives from all 16 district medical stores, district hospitals, health programs, health facilities and community health workers were involved. Other players include partners supported by Global Fund and PMI, which are Crown Agents, JhPiego Project Last Mile, and CARE.

2.3. Development of the Training Curriculum and Conducting Training of Trainers on the Newly Updated System

In 2023, GHSC-PSM in collaboration with NMSA and DPS developed a competency-based training curriculum that targeted all health facility level operations to include the usage of the newly created tools at the health facilities, which provided practical solutions to most of the system's challenges identified earlier. A total of 43 participants from the Central and District level staff were trained as trainers and 37 were certified to further cascade the training to all health facilities in the country.

3. METHODOLOGY

This qualitative case study leverages the reviews of reports, minutes, and other data sources to articulate the impact of coordination on health commodity security in Sierra Leone. The data sources included supportive supervision reports, which gather data mostly from observation of supervisors at health facility sites, the standard operating procedures (SOP) for Sierra Leone health supply chain management (SCM), training curriculum for health SCM, Logistics Management System cascade training reports, District Health Information Software (DHIS-2) LMIS module reporting rate for malaria products, Malaria Health Products Quantification Reports, the comparative report of Community Health Supply Chain Assessment. A literature review was also conducted to compare the desk review findings with those of other studies. Finally, content and thematic analysis generated the subtopic, which required quantitative aggregation and analysis to make the coordinating efforts of the technical working groups (TWG) visible in numerical terms.

4. INTERVENTION RESULTS

A total number of five (5) results of impacts were documented towards commodity security

4.1. Result 1: Coordinated Training Cascade

A maximum of two health facility staff from all health facilities, to make a total of 1801 were trained in the country via a coordinated effort from donor's support. Using the trainers, the following numbers of districts were trained. Trained facility staff were further supported to

cascade the knowledge of the supply chain management operations at the health facilities to 5,214 numbers of health workers across the country. The benefit of coordinated capacity building of health workers does not only lead to improved competencies and skills on the part of the workers, but it also saves cost as different donors apply their resources collectively in a manner that ensures no one unnecessarily receive training more than one time [6][7][8], thereby putting a stop to scenarios where training is used as rewards because of the monetary incentives provided to trainees.

Table 1: Number of districts supported by donor partners

Donors	Number of Supported and Trained Districts
USAID	4
UNFPA	6
Global Fund (GF)	6
Total Number of Districts	16

4.2. Result 2: Data visibility Improvement and Reporting Rates

The TWG pursued two approaches to improve data visibility. First is that the roles and responsibilities of staff in the use of the DHIS-2 were defined in the new SOP. This includes role of the Technical Working Group to review DHIS-2 data for completeness, inconsistencies and quality. Second is the inclusion of the roles of the District Information Officer (DIO) and the District Logistics Officer (DLO) to review the MFR-HC from health facilities and provide feedback and on the job training to health facility personnels. With roles and responsibilities well defined, data visibility improved as respective staff took their responsibilities more seriously with evidence of improved reporting rates. Taking malaria LMIS report for example, it increased from 39% in 2019 to 87% in 2023. Reporting rate and accuracy needs to be optimal because data affect implementation decision like resupply quantity decisions and actions, which further leads to either stock out or overstock based on wrong data and information [9]. The importance of accurate data visibility has huge impact in all aspects of SCM operations, which include simplify resupplying to health facilities for commodity security [10][11].

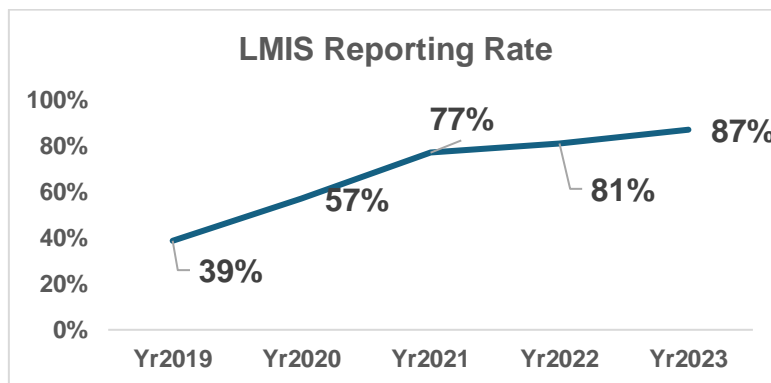


Figure 1: LMIS Reporting Rate

4.3. Result 3: Usage of Reported Health Facility Data for Resupply Decision

Improved LMIS data visibility from health facilities makes available the required data for use by the District Supply Chain Teams to develop a distribution matrix which convey the quantity for resupply per facility per product for health facility order fulfilment implementation. This has led to reduction in stock out rates. Example is average Antimalaria stock out rate from 2 digits to a

single digit rate figure. This approach is supported by Karimi et al., 2021, which puts attention on accuracy of LMIS reports to make informed resupply decisions to health facilities of developing countries [12][13].

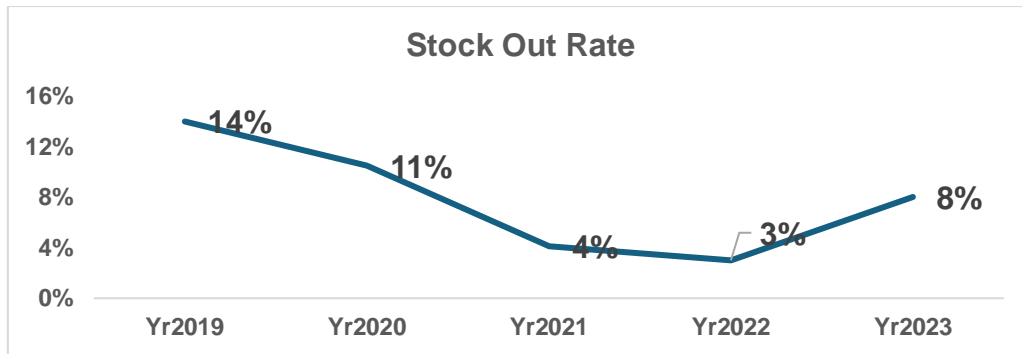


Figure 2: Stock Out Rate

4.4. Result 4: The Inclusion of Consumption Method of Forecasting National Health Commodity Needs

The availability of consumption data has led to its inclusion in the annual forecasting of national needs. Prior to 2023, only demographic method of forecast was accepted as final forecast because of poor morbidity and consumption data had unrealistic trends. In 2024, morbidity and consumption-based forecast became the final accepted forecasts because the quality of consumption data increased. Additionally, the forecast was only conducted at the national central level because districts do not have data to work with. The scenario has changed as the districts now have data to conduct their forecasts and send the outcome to the central level quantification team. The use of consumption method has improved the forecast reconciliation exercise, thereby enriching the guidance on the forecast method to use by commodity types. The benefit of consumption-based forecast is that it uses the past data generated by the system and from health facilities is that it reflects reality and does not need conversion of number of persons to actual commodity need[14].

Table 2: Forecasting Methods Used by Year

Forecast Methods Used	Year	Final Accepted Forecast
Demography, Morbidity, Consumption	2019	Demographic
Demography, Morbidity, Consumption	2020	Demographic
Demography, Morbidity, Consumption	2021	Demographic
Demography, Morbidity, Consumption	2022	Demographic
Demography, Morbidity, Consumption	2023	Demographic and Morbidity
Demography, Morbidity, Consumption	2024	Morbidity and Consumption

4.5. Result 5: Full Integration and Participation of Community Health Level Partners in the Health SCM

The inclusion of community health workers (CHW) hub and partners in the SOP development and training has created a collaboration that never existed before. The CHW now have a seat within the technical working group. Additionally, health facilities now issue integrated community commodity management (iCCM) products to CHW and the CHW send commodity

and logistics data to the Community Health Information System (CHIS) which is visible at the district level to inform decision making. Subsequently, there is visibility of CHW reporting rates and report completeness, for which there is follow up. The benefits of including CHW supply chain activities to the National supply chain system ensures the support needed to get product to far and hard to reach places in rural communities are considered [15] to curb communicable diseases and other health challenges

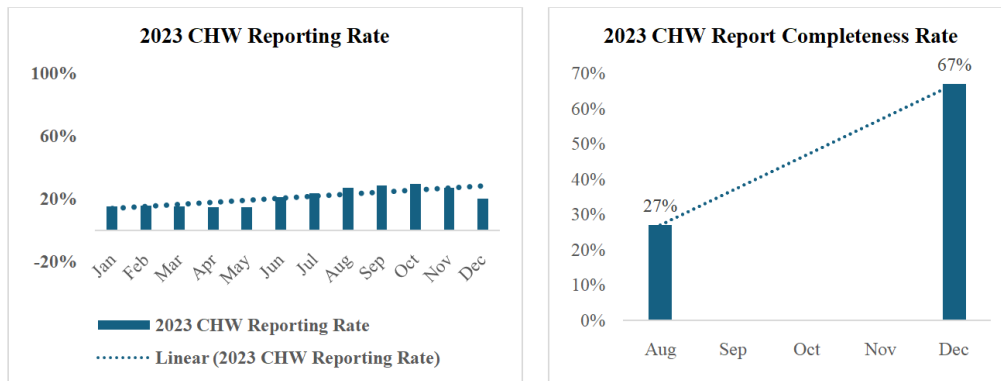


Figure 3: CHW Reporting and Report Completeness Rate

5. DISCUSSION AND CONCLUSION

The coordination effort of the technical working group has brought visibility and progress into various areas of health commodity security, from the increase in the numbers of staff whose capacity have been enhanced via training, improved visibility of LMIS data for decision making and forecasting future needs purposes, and finally to the full integration of the community health level partners in health SCM. These impactful results were possible because of the following. First is that coordination harmonizes efforts and resources of DPS, NMSA, Global Fund, UNFPA, UNICEF and GHSC-PSM towards a common health supply chain management goal [16]. Second is that there is a continuous and scheduled meeting of the TWG where there is direct contact to discuss key agenda items and exchange ideas and opinions from the planning stage of intervention, through the supervisory stage to final reporting of activity [17]. Thirdly, the reciprocal relationship of respect amongst the leadership of constituents represented in the technical working group, shaped the overall decision of the group for common good [18] towards health commodity security in Sierra Leone. And finally, it is recommended that the current technical working group and governance conduct supply chain actors mapping to incorporate other actors like UNDP and African Development Bank (ADP) not currently in the working groups for advantages of added resources in the pursuit of making health commodities available for all in Sierra Leone [19], thereby avoiding parallel supply chain operations, which is inimical to sustainability.

6. LIMITATION

The study is limited to the snapshot of the data and information extracted from the sources of data used in this research and the addition of interviews with open-ended inquiries would provide a richer and more in-depth perspective from various stakeholders within the technical working groups.

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