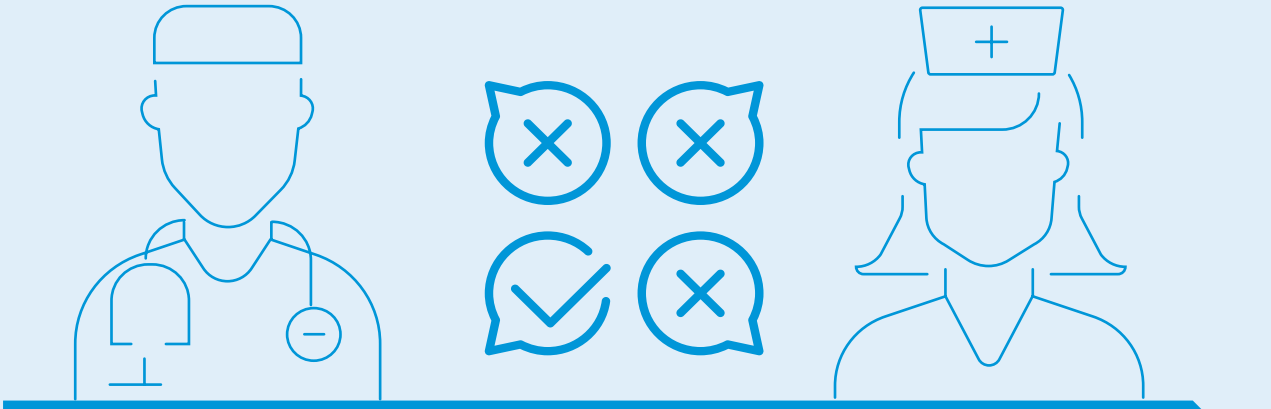
Government of Sierra Leone

Ministry of Health and Sanitation

NATIONAL HEALTH SUPPLY CHAIN STRATEGY (NHSCS) 2023–2027



Ministry of Health and Sanitation

NATIONAL HEALTH SUPPLY CHAIN STRATEGIC PLAN 2023–2027

Contents

Abbreviations

CHW	Community Health Worker
CMO	Chief Medical Officer
CPD	Continuous Professional Development
CR	Cost Recovery
CSO	Civil ociety Organization
DFD	District Forecast and Distribution (TWG)
DHLS	Directorate of Hospitals and Laboratory Services
DHMT	District Health Management Team
DHSE	Directorate of Health Security and Emergencies
DIO	District Information Officer
DMS	District Medical Store
DPHC	Directorate of Primary Health Care
DPPI	Directorate of Policy, Planning, and Information
DPS	Directorate of Pharmaceutical Services
DTC	Drug Therapeutic Committee
EHSP	Essential Health Services Package
EML	Essential Medicines List
ESC	Emergency Supply Chain
FHC	Free Health Care
FMC	Family Management Committee
FP	Family Planning
GHSA	Global Health Security Agenda
GHSC-PSM	Global Health Supply Chain – Procurement and Supply Management (Project)
GoSL	Government of Sierra Leone
HFAC	Health For All Coalition
HR	Human Resources
HSCC	Health Sector Coordinating Committee
IHPAU	Integrated Health Project Administrative Unit
LMIS	Logistics Management Information System
MDAs	Ministries, Departments and Agencies
MoF	Ministry of Finance
MoHS	Ministry of Health and Sanitation
NCD	Non-Communicable Disease
NGO	Non-governmental Organization
NHSS	National Health Sector Strategy
NMP	National Medicines Policy
NMSA	National Medical Supplies Agency
NSBS	National Safe Blood Services
NHSCS	National Health Supply Chain Strategy
NTD	Neglected Tropical Diseases
PBSL	Pharmacy Board of Sierra Leone
PHU	Peripheral Health Unit
PMI	U.S. President's Malaria Initiative
PPP	Public Private Partnership
PSSL	Pharmaceutical Society of Sierra Leone
QA	Quality Assurance
RH	Reproductive Health
RMU	Rational Medicines Use
RRiV	Report, Requisition, and Issues Voucher
SC	Supply Chain
SLeSHI	Sierra Leone Social Health Insurance
STG	Standard Treatment Guideline
TB	Tuberculosis
TOR	Terms of Reference
TWG	Technical Working Group
UHC	Universal Health Coverage
UNFPA	United Nations Population Fund
UNICEF	United Nations Child Fund
USAID	United States Agency for International Development
VDC	Village Development Committee
WHO	World Health Organization

Foreword

The Government of Sierra Leone (GoSL) through the Ministry of Health and Sanitation (MoHS) continues to play a crucial role in providing health care services in response to the population needs, and consistent with the Universal Health Coverage (UHC) 2030 goal of reorganizing and strengthening the entire public and private health systems to ensure access and availability to quality and affordable health care services for residents of Sierra Leone by the year 2030.

The strategic statement in the UHC plan for health products and technologies seeks to fostering a strong, efficient, and resilient pharmaceutical management system that meets priority health needs through the provision of the right quantity of effective, safe, quality, and affordable medicines, vaccines, medical supplies, equipment, and health technologies that would enhance the provision of services that are not only accessible but acceptable to the people of Sierra Leone.

The policy direction regarding the regulatory control in relation to quality assured, safe, and efficacious pharmaceutical products and the prevention of falsified and substandard products moving through the country's supply chain is further elaborated in the National Medicines Policy 2020. The strategy development process usefully coincided with the pre-validation phase of the National Health Sector Strategy 2021-2025, thereby enabling alignment with key strategies for the health sector. The strategy also aligns with Sustainable Development Goal (SDG) at global level. Sustainable Development Goal 3 has an overarching goal of ensuring that citizens have access to safe, effective, quality essential health care services, including affordable essential medicines and vaccines without going into poverty.

Notably, MoHS, working in collaboration with other Ministries, Departments and Agencies (MDAs) and Health Development Partners, has been driving a host of healthcare reforms aimed at strengthening national capacity to deliver on the UHC agenda 2030. Some of these reforms include, but have not been limited to, the transformation of the Directorate of Drugs and Medical Supplies (DDMS) to the Directorate of Pharmaceutical Services (DPS) and its consequent restructuring; the repeal and replacement of the National Pharmaceutical Procurement Unit (NPPU) Act of 2012 to make way for the establishment of the National Medical Supplies Agency (NMSA) – a public service agency exclusively responsible for the procurement, warehousing and distribution of drugs and medical supplies in a transparent and cost-effective manner, for and on behalf of all public institutions throughout Sierra Leone. Several key policy initiatives have also been formulated, and coordination with the pharmaceutical sector has been prioritized and improved. While sufficient progress has been made towards improving the regulatory and governance environment within the sector, it is also fair to acknowledge that a number of challenges remain.

This inaugural National Health Supply Chain Strategy (NHSCS) is therefore a sound response to the key challenges already identified within the sector. It seeks to provide strategic direction for the health sector in the management of the supply chain for health products and technologies in the medium term from 2023 to 2027. The NHSCS is therefore organised around twelve guiding principles that drive six inter-dependent and mutually exhaustive strategic result areas. These are streamlined governance and coordinated financing; increase rational medicines use; strategic, cost-effective, quality procurement; efficient, secure distribution to patients; sustainable decision support systems; and supply chain skills and workforce development. The principal objective of this strategic plan document is to provide a coordinated, harmonized framework to guide the efforts of all partners and stakeholders that are committed to ensuring the availability of essential health commodities to Sierra Leoneans.

It is important to note that the core principle of developing this strategy and costed implementation plan was inclusive participation and engagement of stakeholders at various stages of the process. It is gratifying to note that over sixty stakeholder organizations were engaged with over one hundred one on one interactions to elicit input and feedback, thereby enriching the contents of this document.

With the unwavering commitment of GoSL, health development partners, and other stakeholders within the pharmaceutical supply chain system, together we will doubtless improve access to essential medicines, vaccines, and other health products in the country, particularly at the last mile.

I therefore urge all those involved in implementing this plan to fully apply themselves according to the guiding principle outlined so that we can contribute significantly to improving the health status of our people – the people of Sierra Leone.

Dr. Austin Demby

Honourable Minister of Health and Sanitation
Ministry of Health and Sanitation

Acknowledgements

One fundamental principle in the development of this National Health Supply Chain Strategy (NHSCS) and its Costed Implementation Plan (CIP) 2023-2027 was to create a collaborative environment in which a wide range of stakeholders were engaged throughout the process.

Several formal approaches were used to engage the stakeholders including diagnostics analysis, key informant interviews, focused group discussions, field assessment, and consultative and validation workshops to solicit direct input and feedback from individuals, teams, and organizations.

On behalf of the Ministry of Health and Sanitation (MoHS), I wish to acknowledge the financial and technical support rendered by our health development partners, especially the United Nations Population Fund (UNFPA), who contributed immensely to the development of this document. I wish to also thank the Global Funds (GF-ATM) who have ring fenced funds to cover the gaps in the development of this supply chain strategy.

The interventions and transformative ideas outlined in this strategy are ambitious, but with dedication and a strong sense of vision and teamwork from MoHS and our health development partners, they can undoubtedly be achieved. The NHSCS and CIP is integral to ensuring that all people in Sierra Leone receive equitable access to essential medicines, vaccines, and medical supplies. The work envisioned in this strategy is not only important but critical to the services provided to our citizens, thereby contributing to the achievement of Universal Health Coverage (UHC) for all Sierra Leoneans.

I wish to thank the staff of MoHS, and our health development partners who actively participated in the strategy development process. In particular, heads and representatives from these specific institutions and units are singled out for special thanks: Kim Dickson, UNFPA Country Representative to Sierra Leone; Michael Jack Lansana, Chief Pharmacist and Director, Directorate of Pharmaceutical Services (MoHS); Lawrence A. Sandi, Managing Director, NMSA; Gamachis G. Shogo, RHCS Technical Specialist, UNFPA; Salamatu Dumbuya, National RHCS Specialist, UNFPA; Hany Abdallah, Lead Consultant, UNFPA.

The incredible input from members of the Supply Chain Technical Working Group Policy Sub-Committee Members; Staff Members of the Directorate of Pharmaceutical Services (MoHS) and the National Medical Supplies Agency and all the stakeholders who participated or contributed to the various phases of the development of the NHSCS are hereby fully acknowledged.

Permanent Secretary
Ministry of Health and Sanitation

Executive summary

The Ministry of Health and Sanitation, Sierra Leone, has undertaken to develop this National Health Supply Chain Strategy (NHSCS) to guide investments and interventions in this critical and strategic pillar of the health sector programme delivery. Medicines and medical products represent the largest area of cost for the sector, and expenditure has been largely dependent on external donor support. However, as the country looks forward to a healthy and economically prosperous future for its citizens, a dedicated strategy to cost effectively and sustainably meet the medicines and medical supply needs of its population becomes critical.

The NHSCS is the outcome of a multi-disciplinary, multi-stakeholder consultative process that has relied on rigorous analysis and expert evaluations, and engaged over 60 stakeholders at national, district and facility levels, including various public directorates, financial and implementing partners, civil society organizations and the private sector. The strategy development process usefully coincided with the pre-validation phase of the National Health Sector Strategy 2021–2025 (MoHS, National Health Sector Strategic Plan 2021, draft), thereby enabling an alignment with key strategies in the health sector.

The principal objective of this strategic plan document is to provide a coordinated, harmonized framework to guide efforts of all partners and stakeholders committed to ensuring availability of essential health commodities to Sierra Leoneans. Considering the boldness of proposed strategies in requiring a "different way of doing supply chain" as compared to current practices, the NHSCS aims to be more of a guide to potential interventions versus a prescriptive approach to transforming public health supply chains (SC) by 2027. To this end, the NHSCS is organized around 12 guiding principles that drive six inter-dependent strategic results. The NHSCS also identifies potential risks to strategy execution based on current context, as well as potential interventions to mitigate their impact. The following table highlights the key milestones targeted by the strategic result areas; the strategy includes possible interventions to achieve these milestones over the course of the next five years:

Strategic result #1.

Streamlined governance and coordinated financing: Establish a streamlined, coordinated national SC governance mechanism, linking central and district level mechanisms, and centrally harmonizing the planning and deployment of investments in health commodities and SC systems.

2023–2024	2025–2026	2027
TORs for streamlined governance mechanism defined and adopted through public order (clarity on mechanisms it replaces) Monitoring & Evaluation plan for NHSCS defined SC performance and risk management framework defined.	Performance management report implemented and used to review NHSCS and SC performance Coordinated SC financing mechanism, updated regularly	Routine central and district SC performance monitoring and management Review of terms of reference and update as appropriate

Alignment and coordination with the existing National Health Sector Strategy performance management system and reviews, at central and district level

Change management and communication plan defined and implemented at all levels

NMSA representation and participation at Health Sector Coordinating Committee level, through the Supply Chain Technical Working Group (TWG) (linked with Strategic Result #3), including standing agenda item to update the status of supply financing

Strategic result #2.

Increased rational medicines use: Generate, analyse and use data linking medicine consumption and morbidity, to improve quantification, procurement and distribution of target products.

2023–2024	2025–2026	2027
Definition of medicines targeted for rational medicines use Data and analytical roadmap to integrate morbidity and medicine use (e.g., DHIS2, survey data sources) in SC decisions (quantification, procurement, distribution) Essential Medicines List and standard treatment guidelines printed and distributed to guide selection and increase rational prescribing of medicines	Establishment of drug information services at central and hospital level to provide access to information on medicines and use	Funded, sustainable drug therapeutics committees in 45% of district hospitals (based on target to achieve 60% by 2030)

Policy and roadmap for long-term financing of drug therapeutics committees

Regular audit of prescription drug utilization records done by drug therapeutics committees and operational research by Directorate of Pharmaceutical Services (DPS) to identify issues related to irrational prescribing and findings from such audits/ research to feed into SC decisions.

Strategic result #3.

Strategic, cost effective, quality procurement: Strengthen and establish centralized procurement capacity within NMSA to coordinate and manage all commodity procurements in the health sector, leveraging strategic procurement management systems and pooled financing mechanisms.

2023–2024	2025–2026	2027
NMSA capability and capacity to manage cost-efficient and strategic procurement strengthened Policy audit of donor and government procurement guidelines to address potential strategy bottlenecks	Harmonized funding for drugs in one basket	Sustainable financing of procurement and SC operations

NMSA to regularly map and coordinate all resources: donor, GoSL-supported procurement. Stakeholders engaged with clear strategy on fund mobilization and financing.

Financial and fiduciary management systems established, including independent financial audits.

Strategic result #4.

Efficient, secure distribution to patients: Design and implement a national, integrated distribution system that leverages the district's role in active facility-level inventory management that cost effectively responds to patient and product requirements in the next five years.

2023–2024	2025–2026	2027
Policy for integrated approach defined and endorsed Integrated SC design developed, considering district context, and including short, medium and long-term targets for system implementation Standard operating procedures and playbooks for SC system implementation available, including clear definition of roles at all levels.	Medium-term targets for integrated SC systems completed Digital information system actively linked with distribution activities (in coordination with Strategic Result #5)	Analytical tools institutionalized to support continuous system optimization and cost management (in coordination with Strategic Result #5)

NMSA-led coordination mechanisms supported and strengthened, to ensure communication and alignment of stakeholders to integrated approach (in coordination with Strategic Result #1).

Alignment of central and district structures to new roles and responsibilities.
Training and continuous coaching system to support change management involved in redefined stakeholder roles (in coordination with Strategic Result #1 change management and communication plan).

Strategic result #5.

Sustainable decision support systems: Logistics Management Information System (LMIS) data management systems and processes integrated with distribution and supply planning processes, strategically phasing in the digitalization and automation of data capture, reporting and analysis tools at service delivery points.

2023–2024	2025–2026	2027
Streamlined LMIS tools and systems under integrated SC design (in coordination with Strategic Result #4). Roles and responsibilities for data personnel aligned with integrated distribution strategy (in coordination with Strategic Result #4).	Automated analytics and feedback from LMIS to support SC decisions: redistribution, rational medicines use	Robust, functioning LMIS/ decision support system, demonstrating SC performance results

Comprehensive LMIS and data governance plan developed and implemented, evaluating adequacy of all systems for next five years, phased road map for roll out, clarifying standards, tools, roles and financing plan; includes oversight and coordination mechanism with Supply Chain Technical Working Group for the information of the Director of Policy, Planning, and Information.

Change management plan to support and enable decision makers to interpret and use data for relevant SC decisions (in coordination with Strategic Result #1).

Strategic result #6.

SC skills & workforce development: Begin implementation of a DPS-NMSA-coordinated harmonized human resources capacity development plan for the national SC, including measures to institutionalize SC roles in health sector scheme of service, and to ensure professionalization of SC competency in the health sector

2023–2024	2025–2026	2027
Key SC roles/positions to be captured in scheme of service defined, with terms of reference. Recruitment plan in place in collaboration with MoHS Human Resources Directorate and Human Resource for Health Training plan for staff undertaking SC roles developed, prioritizing key strategic functions/skills such as procurement and data use for SC decision-making	Structured staff compensation system for excellent performance created	Performance management processes implemented; performance review conducted for all SC staff HR policy document for SC developed and available to HR departments

Appropriate human resources budget for SC developed, including collaboration with stakeholders for budget allocation over five-year plan.

Partners and other stakeholders coordinated to collaborate on and align all SC trainings.

» Introduction

Overall strategic direction

In March 2020, the Ministry of Health and Sanitation (MoHS), through the initiative and leadership of the Directorate for Pharmaceutical Services (DPS), embarked upon the development of the National Health Supply Chain Strategy (NHSCS). As the launch of the supply chain strategy development process took place alongside the national response to COVID-19 pandemic, a phased approach was required to pace and adapt the process to global and in-country circumstances.

Phase 1 of the process involved a Diagnostic Analysis of the national supply chain (SC) situation between October and November 2020. The analysis involved extensive review of available policy documents, notably the National Medicines Policy (MoHS, 2020) and the National Health Sector Strategic Plan (MoHS, 2017), and various guidance and technical reports, as well as interviews and validation activities with over 30 stakeholder organizations (see Annex 1).

Phase 2, initiated in February 2021, involved deeper strategic analysis of priority challenges identified in Phase 1, and culminated in a consultative workshop in June 2021 to define the key strategic parameters of the NHSCS. The process coincided with the pre-validation phase of the National Health Sector Strategy 2021–2025 (MoHS, 2021 draft) and enabled key strategies in this guidance document to be factored into the finalization of the NHSCS. The NHSCS ultimately considers the strengths, opportunities, best practices and recommendations ensuing from consultations with over 60 stakeholders (see Annex 1) and expert evaluations throughout the development process.

Overall, the principal objective of this strategic plan document is to provide a coordinated, harmonized framework to guide the efforts of all partners and stakeholders committed to ensuring the availability of essential health commodities to Sierra Leoneans. The NHSCS is organized around 12 guiding principles that drive six inter-dependent and mutually exhaustive strategic result areas. Considering the boldness of proposed strategies that call for a “different way of doing SC” as compared to current practices, the NHSCS aims to be more of a guide to potential interventions rather than a prescriptive approach to transforming public health SCs by 2027. To this end, the NHSCS identifies potential risks to strategy execution based on current context. These risks and potential interventions to mitigate their impact are defined in the risk and mitigation approach section. It is fully expected that new or adapted interventions may be identified and introduced as the strategy is reviewed and monitored over the course of the next five years.

State of essential medicines: availability and trends

The Phase 1 Diagnostics Report provides a comprehensive review of the current availability of essential medicines, and the SC and health sector challenges and bottlenecks that contribute to this state. These issues are aptly highlighted in the NHSCS and can be summarized as follows:

1. **Limited availability of essential medicines and medical supplies** due to persistent stockouts, leakages, inadequate financing, irrational prescriptions, weak regulation of complementary/ alternative medicines, weak research into medicines and weak supply chain management systems.

2. **Limited availability and poor quality of medical equipment** due to inadequate and ineffective procurement, weak and fragmented procurement planning, coordination and management, inadequate resources, weak reinforcement of standards and theft of medical equipment.

The National Health Policy (GoSL, 2020) described the following four action areas to ensure the availability, affordability, efficacy and overall quality of medicines and medical products for all levels of service provision and for all people in Sierra Leone:

a. Strengthen regulation of pharmaceutical services and timely procurement of essential medicines, lab supplies and equipment required to meet basic health care needs

b. Support rational use and prescription of medicines, commodities and equipment, through guidelines and strategies to assure adherence, reduce resistance, maximize patient safety and improve training

c. Monitor access and utilization of essential medicines as well as development and enforcement measures to eliminate or control misuse and theft of medical equipment.

d. Assure the availability of safe blood for transfusion in all hospitals.

Strategic objectives

The NHSCS aligns with the NHSS in terms of supporting the overall goal, strategic objective and priority result of the health sector strategy (see Figure 1). Specifically, the NHSCS supports the NHSS Strategic Pillar 7 Objective (Essentials Medicines and Health Technology):

"To foster effective, efficient and sustainable pharmaceutical system that meets priority health needs."

The NHSS elaborates three specific objectives under this mandate, the first two of which are within the purview of the NHSCS:

1. Support the pharmaceutical services governance and management structures for rationale use of medicines and medical supplies by 2025.

2. Support effective and efficient innovative technologies, mechanisms and processes for procurement, storage and distribution mechanisms for essential health commodities and their rationale use at the last mile by 2025.

3. Support pharmacovigilance and medicines regulatory mechanisms to ensure internationally acceptable standards on efficacy, safety, quality and use of medicines and health technologies and by 2025.

Figure 1: NHSS 2021-2025 vision, mission, goal and objective

Vision
All people in Sierra Leone have access to affordable quality health care services and health seurity without suffering undue financial hardship.

Mission
Building resilient and responsive health systems to provide and regulate comprehensive healthcare services in an equitable manner through innovative and appropriate technology and partnerships while garanteeing social and financial protections.

Goal
All people in Sierra Leone have equitable access to quality and affordable health services whether public or private at all time without any undue financial hardship by 2030.

Strategic objective
To transform the health sector to an adequately resourced and functioning national healthcare delivery system that is affordable and accessible to all, especially the most vulnerable segment of the population.

Strategic priority result
An effective, efficient, technology savvy and sustainable pharmaceutical SC management system that meets health needs of the population.

Source: MoHS, 2021-Draft

Guiding principles

Various frameworks and approaches exist to guide SC strategy development both in private sector and public health SCs. Ultimately, SC strategies strive to define a future state that makes trade-offs between three decision parameters (level of customer service, cost and sustainability) while evolving its design to incorporate SC best practices and advanced capability (see Figure 2) (DeSmet, 2021).

Adopting these considerations to the NHSCS development process, the following 12 principles emerged during stakeholder consultations to guide SC design and strategic approaches:

1. **Integration will drive the strategy** including both vertical integration (including all health programmes, blood supplies and lab diagnostics) and horizontal integration (processes systematically interconnecting DPS, NMSA, districts, health facilities and community level).

2. **A framework of accountability and responsibility** will strengthen and maximize each SC actor's role and help to achieve the benefits of an integrated approach. Alignment with the goals and strategies of the NHSS will be monitored and ensured, supporting a life-stages approach to meeting the needs of Sierra Leoneans. A framework of change management will guide interventions.

3. SC needs to be **elevated to the highest decision-making governance** forum of the Ministry as one of the key areas of investments for the health and economic well-being of the country.

4. SC resources will be mobilized and allocated under a **coordinated and/or pooled framework**, overseeing product and system requirements.

5. **NMSA procurement capacity** will be focal to driving strategic, efficient, timely and transparent access to products, including compliance to quality assurance (QA) standards, and addressing cost recovery products. This capacity will be strengthened in strategic sourcing, procurement procedures, contract management, oversight of outsourced providers and performance analysis, including warehousing and distribution capacity.

6. **District capacity and engagement will be leveraged** to intensify last mile operations and performance.

7. **Tested best practices in procurement and distribution** will be adopted to ensure a lean, streamlined, cost effective and higher performing SC – one size will not fit all SC clients and a highly coordinated, integrated approach will be applied.

8. **A strategic governance plan for eLMIS**, aligned with health sector information system strategies, will coordinate and guide phased implementation and investment in digitization, integration and decision-support systems. The plan will especially demonstrate use of data in operations and target sustainable system maintenance.

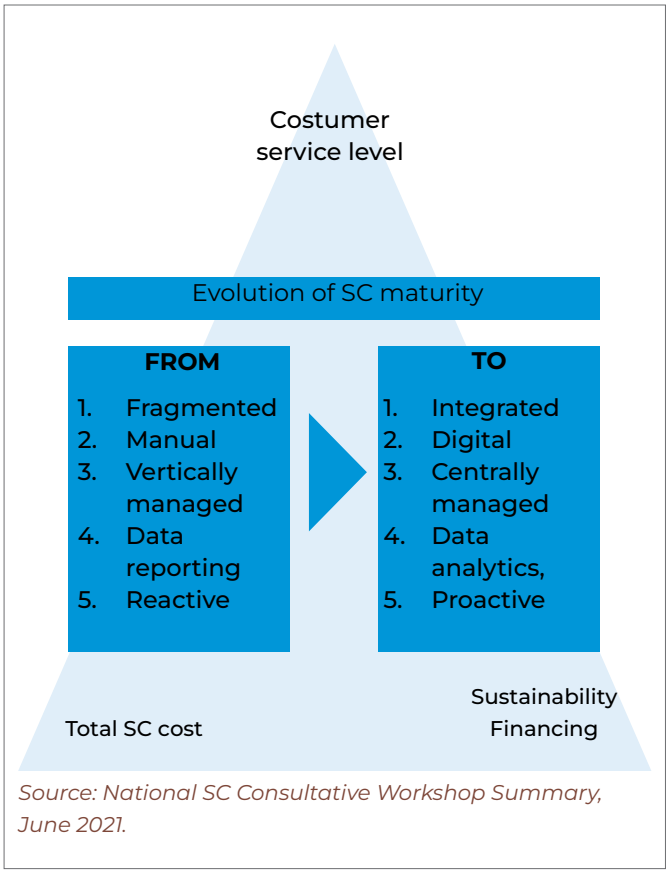
9. **Rational medicines use (RMU) will be integrated into SC operations** to minimize wastage, maximize use of medicines for intended purpose, and ultimately patient outcomes.

10. **A coordinated, harmonized human resources development plan** (between NMSA, DPS-MoHS Human Resources Directorate) for the whole SC will guide the planning, and capacity/professional development of SC actors, working with professional associations and universities to increase SC competency in the health sector.

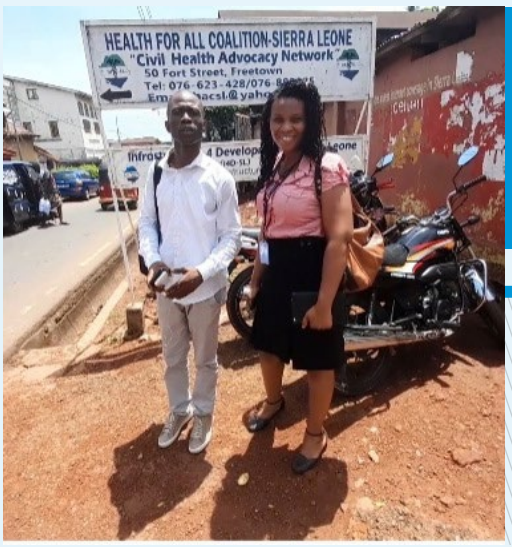
11. The **role of the community as end-user will be formalized and integrated** at all levels of the SC, including stewardship, accountability, ownership, distribution and RMU. A harmonized framework will be used to assure the safeguarding of products and their use for intended purposes only.

12. The **private sector will be evaluated and engaged** to bring in capital, improve efficiency and increase access.

Figure 2: SC strategy parameters



Source: National SC Consultative Workshop Summary, June 2021.



The following section presents the background and rationale for the six principal strategies that will be targeted in the next five years. The specific risks and implementation milestones and interventions will be described in subsequent sections.

Strategic Results

Strategic Result 1: Streamlined governance and coordinated financing

Critical issues

The national pharmaceutical SC in Sierra Leone relies on multiple actors to act in a coordinated and aligned manner to deliver access to needed essential medicines to the population. The principal actors include DPS, NMSA, District, and partners. Annex 2 is a draft Accountability Matrix for principal SC functions developed during the national consultative workshop for SC strategy development. As the overarching government oversight body for the pharmaceutical sector, DPS holds the mandate to set the strategic direction for the delivery of pharmaceutical services, and the coordination and implementation of other MoHS strategic guidance affecting the pharmaceutical sector. NMSA, established in 2017 by an act of parliament, is the institution responsible for procuring, storing and distributing medical products and supplies to all public health institutions. Districts are also key stakeholders as stewards of health service delivery in their areas under the GoSL's decentralized governance structure. Partners, including donors and their implementing mechanisms, play a significant role in providing the primary source of medicines and SC operations financing at the time of this strategy. On the receiving end, programmes, hospitals, Peripheral Health Units (PHUs) and community organizations have key stakes in the design and implementation of SC systems.

The following critical issues were identified as challenges and bottlenecks to ensuring that all stakeholders are coordinated and aligned for efficient and effective delivery of medicines:

- **Existence of multiple, vertical governance mechanisms for SC:** These increase the coordination burden on DPS and NMSA, and lead to missed opportunities for synergy and collaboration between health programmes. Annex 3 summarizes the existing coordination and oversight mechanisms.
- **Lack of trust and of alignment of objectives:** Each mechanism described in Annex 3 varies in the modality it applies to monitor and address the availability of medicines and the performance of SC systems. Standardized approaches and tools are lacking for implementing key governance functions, consequently weakening opportunities to build transparency and trust between key SC organizations (DPS, NMSA, districts, programmes) and various donor and partner organizations.
- **Weak accountability framework:** Reporting and communication processes, structures, and systems for enforcing accountability and performance are not well-defined.
- **Inconsistent participation:** Participation of key stakeholders may be limited owing to multiplicity of platforms, inconsistency in the organization/follow-up of mechanism activities, and inadequate information flow to facilitate coordination (information requirements not well defined). Key stakeholders, such as civil society organizations (CSOs) and community leaders may also be missing from memberships.
- **Complexity of SC issues:** The lack of a harmonized accountability framework and a coordinated vision for SC challenges the ability of governance mechanisms to strategically and sustainably address issues that arise.
- **Silos in negotiation of product and SC systems financing:** Programme-based/vertical approaches cause missed opportunities for harmonization and the extension of financing for SC across product categories.

Hence, the NHSCS aims to achieve the following results within the next five years:

Strategic result #1.

Establish a streamlined, coordinated national SC governance mechanism, linking central and district level mechanisms, and centrally harmonizing the planning and deployment of investments in medicines and SC systems.

Rationale

To significantly transition the structure and modalities of SC systems in Sierra Leone as described above, key changes to the governance and financing of medicines and SC will be necessary. The NHSCS presents an opportunity to streamline existing governance mechanisms, strengthening mechanisms that are considered effective in coordinating SC stakeholders and addressing SC performance targets.

An integrated and coordinated national procurement and distribution monitoring system will be necessary to rationalize allocation and use of existing resources across MoHS programmes.[1] In addition, standing representation of SC issues and requirements at high-level meetings of the MoHS will be critical, considering the significant share of health sector financing that is tied to medicines. The high-level MoHS forums include the Health Sector Coordinating Committee (HSCC), the Executive Management Committee, and/or the Chief Medical Officer Meeting, with a standing agenda item on the status of medicines financing. Representation at this level will also be tied to Strategic Result #3 and the latter's aim to harmonize financing of health commodities and SC systems, and capture value in NMSA's role to ensure efficient procurement for the public sector.

Existing mechanisms that should be leveraged to achieve a robust system include:

- District Forecasting and Distribution (DFD) TWGs. This mechanism is well-supported by partners at the central level (DPS), and the secretariats of this mechanism have been diligent in ensuring follow-up to key issues and action items.
- Community partnerships. Community and civil service organizations are currently engaged in monitoring distribution.
- District governance systems. These systems are involved in receiving and distributing commodities, for example, by involving the police, the District Council, etc. District-level case examples demonstrate the impact of District Medical Office ownership and leadership of SC systems and issues.
- Monthly partners meeting (district level). These regular meetings promote the engagement of partners' liaisons and focal leads.
- Development Partner coordination mechanisms. These mechanisms promote knowledge transfer for central level stakeholders (e.g., forecasting, distribution matrix, supply planning, mSupply).

Meanwhile, the following responsibilities will be key to ensuring an effective governance mechanism at all levels:

Donor Governance: Good, harmonized coordination and communication with donor partners, strong leadership by government

Communication with and coordination of multiple stakeholders, at central and district level: Regular meetings for consistency of attendance and constructive use of time during meetings. Dedicated and committed secretariat. Pre-meetings in subgroups as needed (e.g., for complex topics, to increase productivity and knowledge sharing). Adopting tools or Standard operating procedures (SOPs) for digital engagement and participation.

Transparency: Clear reporting lines and good communication

Supply chain financing: Coordinated, standardized tool and process for routinely updating and addressing SC financing, with leadership from DPS. Proactive follow-up and engagement of district councils for strategic financing/procurement of products.

Support policy implementation: implementation of EML, Standard Treatment Guideline (STG), National Medicines Policy (NMP)

Specification and Quantification: Set standards for procurement, coordinated review of medicines requirements

1. Experience of Rwanda's iCPDS is a good recent example.

Supply chain monitoring: accountability, transparency and ethical practices in procurement, and supply management systems: Independent monitoring of performance in areas of accountability of key SC stakeholders (e.g., NMSA, DPS, districts)

Quality assurance policy: Enforcement of regulatory policy for medicines registration and donation. Ensuring availability of quality medicines for the entire country (public and private).

Annex 4 includes draft performance metrics identified by the NHSS and derived during strategy consultations. These metrics will be critically reviewed along with other draft national performance monitoring frameworks (United Nations Children's Fund, 2020) and finalized as part of the implementation of the NHSCS.

Strategic Result 2: Increased Rational Medicines Use

Critical issues

Under the directive of the NHSS, the NHSCS centres the issue of poor prescribing practices in the public health service delivery system as a key driver of inefficiency and wastage of medicines and SC resources in Sierra Leone. The practice of polypharmacy and indiscriminate prescription of antibiotics in hospitals, among other irrational medicines use practices, has been documented and found to result in artificial stockouts and potential inflations in the forecasting and funding requirements for essential medicines (DPS/RMU, 2019; DPS/RMU, 2020), as well as high out-of-pocket expenditures for clients.

Both the NMP and NHSS hone-in on RMU and target the following contributing factors:

- Hospital drug and therapeutic committees (DTCs) functioning sub-optimally or not functioning at all
- Attitude, practice and perception of health workers, including resistance to change
- Need to update, disseminate, and enforce use of STGs.

Strategic result #2.

Generate, analyse and use data linking consumption of medicines and morbidity to improve quantification, procurement and distribution of target products

Rationale

The strategic result for this area ultimately focuses on the use of data and evidence regarding RMU to proactively guide SC decisions and responses. Meanwhile, the strategic result will rely on the implementation of key interventions that directly impact the critical issues in RMU identified above. Collectively, these interventions are expected to achieve targets established by the NMP for RMU by 2030 (see Table 1).

Table 1: NMP (2020-2030) Targets for RMU

60%	% of public hospitals have functional DTCs
20%	% reduction in antimicrobial prescription at the outpatient departments of health facilities
100%	% of generic prescription in public facilities

Source: MoHS (NMP), 2020.

Positive achievements and opportunities already exist to make this strategic result a practical and realizable one, including among the main ones:

- NHSS plans underway to update and roll out the Essential Health Service Package (EHSP) for UHC under the Service Delivery Pillar
- Similarly, NHSS plans to develop standard disease-specific treatment guidelines for hospitals
- Existence of a unit within DPS focused on coordinating hospital DTCs, including monitoring/ coaching of District and Hospital Pharmacists, and supporting central and district TWGs
- DTCs in 1) hospitals
- NMP policy enforcing/encouraging prescribing in generics
- Plans by DPS unit for patient education programmes regarding safe medicines use.

Strategic Result 3: Strategic, cost-effective, quality procurement

Critical issues

The current fragmented nature of the national medicines' procurement function contributes to redundant procurements of products, missed opportunities for economies of scale and strategic purchasing, and overall, a diminished ability to oversee and manage procurement resources and ensure quality procurements across the board. Annex 5 is a map of current procurement activities, illustrating procurement largely split along sources of funding.

Several issues are critical to address to achieve an efficient and sustainable SC system in the next five years:

1) Multiple and parallel procurement in the health sector

2) Risks of over-dependence on donors for financing of medicines and SC systems

3) Delayed release of funds for medicines procurement from MoHS and Ministry of Finance (MoF), including challenges to meet co-financing commitments

4) Capacity and capability gaps in human resources needed to strategically carry out the procurement function

5) Lack of or weak system for addressing MoF and MoHS stakeholders interfacing with donors regarding the impact of donor policies on cost-effective procurement of medicines

6) Weak enforcement of compliance to EML and donation policy, at central and also district levels.

Strategic Result #3.

Strengthen and establish centralized procurement capacity within NMSA to coordinate and manage all commodity procurements in the health sector, leveraging strategic procurement management systems and pooled financing mechanisms

Rationale

The main impetus of this strategic result area is to move away from fragmented procurement of medicines needed in the health sector to a centralized model that streamlines costs and leverages economies of scale and scope as far as possible. The strategy will capitalize on the opportunity to:

- Clarify and actualize the role of NMSA, ensuring that line ministries are aware of the provisions in the Act establishing NMSA and its supersession of all other Acts related to the procurement of pharmaceuticals
- Efficiently and effectively invest in building needed pharmaceutical procurement capability and capacity for the health sector, including in international best practices
- Enforce national EML for all programmes, including donations (e.g., NTDs) and any medicines supplied to public facilities
- Bring visibility to pricing schemes across programmes for similar products as a way of assessing and minimizing cost variances
- Respond to emergencies leveraging comprehensive view on available and planned supplies to the country
- Engage innovative financing strategies to supplement donor and government financing strategies.

The strategy will need rigorous planning to be executed but has the potential to strengthen NMSA's ability to underwrite strategic purchasing and financing arrangements, particularly if the following measures are carried out:

- Pooling of funds from all Ministry Departments and Agencies (MDAs) including the Local Councils
- Attracting buy-in from donor and partner institutions by demonstrating procurement capability/performance as well as financial and fiduciary responsibility and transparency
- Responding to requirements and expectations of planned national health insurance programme (SLESHI) for affordable, quality medicines, as defined in National Health Sector Financing Strategy (MoHS, 2021).

Strategic Result 4: Efficient and secured distribution to patients

Critical issues

As documented in the Phase 1 Diagnostic Report (UNFPA, 2020) and evaluated during stakeholder consultations in the development of this strategy, the Sierra Leone health SC requires strategic approaches to address short-term issues affecting distribution performance, while applying a long-term view to decisions affecting SC capital and system investments (such as physical infrastructure, human resources, materials and financial resources). Several analyses and pilots conducted in the last 1 to 2 years (UNFPA, 2020) leading to this strategy can inform possible options for conceiving the most efficient, high performing design. However, there is still a need to validate these models at national scale, under a fully integrated SC system design. Some of the product, programme or district specific experiences include:

- Segmented distribution of FHC and essential medicines in Koinadugu and Falaba with Project Last Mile, involving active monitoring of facility inventory using digital Report, Requisition and Issues Voucher (RRRIV) and adjusting of delivery modes (e.g., trucks, motorbikes) based on facility demand volume and road characteristics
- NMSA outsourcing versus in-house management of transport operations in 11 districts for integrated quarterly distribution from district to health facilities with support from Crown Agents.
- Optimization of EPI SC with UNICEF support, evaluating design options for integrating cold-chain requiring oxytocin and five-dose measles containing vaccine.
- Bed nets mass campaign distribution under the National Malaria Control Programme (NMCP) based on direct-from-supplier/port distribution of pre-packed product consignments to districts.

- Contracting out of hospital pharmacy to a private pharmaceutical company in Connaught Hospital responsible for stocking and providing quality medicines at competitive prices, so that NMSA can eventually procure and supply medicines to private companies under a scaled-up scenario of the public private partnership (PPP) model.

Overall, a prescription of the national SC design for the next five years based on these experiences would be premature without deeper analysis and a 'pressure testing' of assumptions. Hence, the NHSCS needs to take into account the following key issues in the approach to system transformation in the next five years:

1. District level ownership and accountability for key SC functions is critical, considering the role of districts and district health management teams (DHMTs) in overseeing and managing service delivery systems and human resources in the health system.

    - Particular emphasis should be given to the district's role in product inventory monitoring/management and data quality activities at the PHU and district hospital level.

2. Districts and NMSA will evaluate and implement the most cost-effective SC design appropriate for the district, considering the demand, service delivery and geographic profile of the districts. A one-size fits all design does not work for the districts. A highly coordinated system design should facilitate a tailored and cost-effective approach.

    - In close coordination with NMSA, districts can play a role in managing distribution of products to their facilities; this merits further analysis to determine a responsive but cost-effective distribution arrangement from the central to the peripheral level.

    - Districts and NMSA should customize distribution models based on the characteristics of product categories, applying active approaches to managing high demand products to avoid leakage and waste, and customizing systems for specialized products such as blood and blood supplies, and nutrition commodities.

    - Investment in warehousing and transport capacity will be aligned based on comprehensive systems design, with pressure-tested assumptions for future demand patterns and options for resource utilization (e.g., options for building, owning and/or leasing capital assets).

Strategic Result #4.

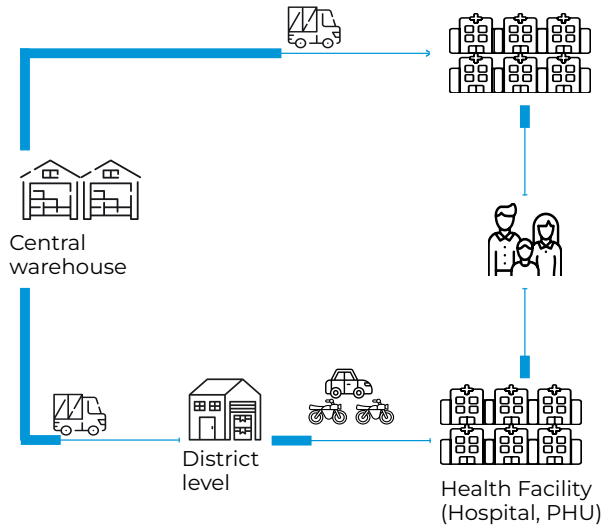
Design and implement a national, integrated distribution system that leverages the district's role in active facility-level inventory management and cost-effective response to patient and product requirements in the next five years.

Rationale

The strategic area is designed on the principle of taking an integrated approach to SC system design, namely factoring the requirements of all programmes along the life stages of a person (NHSS, 2021-2025), from RH/FP to child health/EPI, nutrition, adolescent and sexual reproductive health, screenings, and infectious and chronic disease care and treatment. This approach covers nine current programme areas, including Free Health Care (FHC), Reproductive Health/Family Planning (RH/FP), HIV/AIDS, malaria, TB, leprosy, CH/EPI, Neglected Tropical Diseases (NTDs), Non-Communicable Diseases (NCDs) and Lab and Blood. All activities under the integrated approach can effectively be coordinated by one entity, NMSA, in close collaboration with DPS, programmes, district level teams and relevant sector stakeholders.

The strategy will take a total system approach to optimizing service level, cost, and sustainability parameters. This means looking at SC design from the central to peripheral levels and determining the most cost-effective and sustainable design to reach patients at health facility levels. Figure 3 is an illustration of potential future design options reviewed during the NHSCS consultative process.

Figure 3: Potential future SC design scenarios



Source: National SC Strategy Consultative Workshop, June 2021 (presentation by Project Last Mile).

An integrated approach is also expected to result in important cost savings compared to a segregated approach. These savings should be quantified and monetized as part of the strategy and form the basis for longer term planning of SC operations financing/ sustainability.

Demonstrations of efficiency in the system should also be the part of NMSA's resource mobilization strategy and funding model, harmonizing donor and government contributions to SC operations over the next five years (see Strategic Result #3).

Finally, the strategy will leverage existing strengths in community engagement and participation to ensure secure receipt and handling of medicines at SC nodes and minimize leakage (see Annex 6 for Community Engagement in SC).

Strategic Result 5: Sustainable decision support systems

Critical issues

Data driven decision-making is the backbone of any mature and high performing SC and important achievements have been and continue to be made in establishing a robust LMIS for the SC in Sierra Leone. With the recent development of an LMIS roadmap approved for funding through the recent Global Fund grant round (NFM3), DPS has articulated a vision for LMIS: "Real time visibility of products at all warehouses, hospitals and PHUs through integrated eLMIS and robust performance management system to improve data quality (timeliness, accuracy, completeness) and use."

The LMIS roadmap addresses systemic and operational challenges that are also in scope for the NHSCS in this area, such as:

- Fund management: Fund disbursement and utilization challenges for execution of LMIS activities, under the integrated project management structure (IHPAU)
- Human resources for LMIS: Capacity, high attrition
- Data use: Low usage of data for decision-making by DHMTs
- Data quality: A result of factors cited above
- Data standardization: No standardized national master facility list. Product lists also programme-specific versus integrated.
- Performance management: Routine and systematic use of an appropriate human resource appraisal tool
- Infrastructure: Hardware, unstable internet connectivity
- Other issues: Weak implementation of SOPs for data management and supervision
- Hospitals: Poor performers compared to PHUs; ad hoc system of addressing technical issues.

Hence, this strategic area emphasizes the integration of data systems in SC decisions and responses at all levels (users are more likely to report and use data if they can associate this activity with a desired response) and strengthening governance of information systems to ensure they are robust and sustainable.

Strategic Result #5.

LMIS data management systems and processes integrated with distribution and supply planning processes, strategically phasing in the digitalization and automation of data capture, reporting and analysis tools at service delivery points.

Rationale

This strategic area expects to coordinate with information system development plans and interventions envisioned in the NHSS (e.g., digitization of patient registers at PHU). Meanwhile, the strategy also builds on strengths and opportunities in the current context, including:

1. LMIS subgroup under National SC TWG
2. DFD TWG
3. Project Last Mile pilot of eRRIV using tablets
4. Centralized platform through DHIS2; supporting integration of mSupply and RRIV
5. Existence of district information officers (DIOs) and Central level LMIS Focal Point.

The following describe the features of a future LMIS, based on consultations about the vision of LMIS cited above:

1. User-centred, user-friendly, integrated, harmonized tools (manual and digital)
2. Government-owned and led national roadmap for LMIS development/management, where all partners coordinate and align interventions
3. Phased digitalization of RRIVs to enable real-time integration of inventory data for distribution/ redistribution decisions
4. Planning and management of digitalization costs – operational and maintenance
5. Strengthened data security (e.g., back up of record)
6. Automated 'linkage' between HMIS & LMIS indicators (linking service with consumption statistics, supporting Strategic Result #2 targets)
7. Automated/system-supported analytics at district and national level; analysis and feedback to facilities
8. Visibility of upstream pipeline at PHU and hospital levels.

Strategic Result 6: SC skills & workforce development

Critical issues

While important support has been provided by partners in developing the capacity of SC staff or that of staff involved in SC activities, approaches have largely been programme driven or ad hoc. Systemic issues related to human resources (HR) for SC prevail and need to be considered to have a lasting impact on HR capacity development for SC.

The major issues are the following:

1. **Inadequacy of staffing:** Both DPS and NMSA are constrained in staffing, both lacking the full complement of needed staff, making the recruitment and acquisition of staff with the relevant skills one of the most critical decisions facing the SC system.

2. **Lack of adequate funding:** Funding is important for all SC activities and remains a significant and major constraint for SC overall. This can lead to short-term arrangements versus strategic investment in long-term workforce development plans. There is also currently no quantification or budget allocation for SC human resources in the NHSS (MoHS, 2021).

3. **Training and development/staff capacity-building:** In-service SC trainings are not well-coordinated, and training activities are not supervised by HR personnel in NMSA and DPS. In addition, training module contents need to be standardized to ensure they are competency-based and relevant to the Sierra Leone SC context, including modules on monitoring and evaluation of logistics activities, and supervision and coaching of personnel.

4. **Retention of staff:** Staff attrition is on the increase and an effective retention strategy is lacking.

5. **Performance management gap:** There is a lack of linkage between performance appraisal and compensation, training opportunities and promotion. Staff performance is not regularly evaluated.

6. **Staff welfare constraint:** Little or no attention is paid to welfare of HR in the SC system.

7. **No succession planning:** Strategy is lacking for passing on leadership roles to staff and ensuring a smooth transition after staff move on to new opportunities or retire. It is more cost-effective to develop current staff than hire new people.

Strategic Result #6.

Begin implementation of a harmonized HR capacity development plan coordinated by the DPS and NMSA for the national SC, including measures to institutionalize SC roles in the health sector scheme of service, and to ensure professionalization of SC competency in the health sector.

Rationale

To be sustainable, any strategy to comprehensively address HR issues and needs in the health SC sector must be grounded in HR policies and HR development strategies of stakeholder institutions such as MoHS, NMSA, and districts. Considering the significant shortage of skilled health professionals in the health sector (e.g., clinical professionals), a strategy to institutionalize the SC role and profession in public health HR plans is potentially ambitious but inevitably critical to ensuring sustainable and high performing systems.[2]

2. The NHSS currently does not include SC roles in the cadre of planned health professionals. The opportunity to include SC competencies in existing cadres remains, while planning and advocacy for institutionalizing SC roles in the health system will still be required and addressed in this strategic plan.

The strategic target in this area is intended to be bold but pragmatic, ultimately targeting the inclusion of SC roles in the Scheme of Service of the MoHS. The interventions proposed to implement this strategy were inspired by strategic consultations with the MoHS HR Directorate as part of the NHSCS development process, supporting the central role that a well-capacitated and motivated health SC cadre can play in transforming SC performance.

The strategy capitalizes on positive achievements within Sierra Leone addressing SC HR development, including:

- Skills gaps assessment by NMSA to evaluate training and workforce development needs and programme for staff in late 2020
- Advocacy for DIOs to be added to government Civil Service Scheme (currently supported by donor funds)
- Introduction of SC in the continuous professional development (CPD) programme of the Pharmaceutical Society of Sierra Leone (PSSL) in 2020
- Partnership of PSSL with international SC training institute (e.g., Empower School of Public Health) to conduct online training in SC
- Planned roll-out of SC introduction course by NMSA and DPS for staff at central and district level working in SC.

Annex 7 includes a draft preliminary list of roles identified in the NHSCS development process.

» Risks and mitigation approach

Every strategy has risks that can and should be estimated during the strategic planning process. Addressed upfront and deliberately, risks to as well of a successful strategy can be avoided, minimized, transferred or controlled. This section summarizes the various types of risks identified during the strategy consultation process.

	Potential risk	Possible mitigation approach
Governance risk	Unclear timelines for integration; reluctance by programmes to integrate procurement activities with NMSA.	· Robust stakeholder engagement · Advocacy, to foster willingness on the side of partners to trust the process · GoSL policy to ensure that all programmes integrate with NMSA procurement structures within clear timeline (within first two years of NHSCS) · National policies that will enforce coordination of all health programmes involved in SC activities · SOP and guidelines on how the integration is done. Document/ quantify benefits of integration, demonstrate a win-win situation. · Clear TORs/job descriptions for the function/roles of various programmes in the strategy · Build capacity of NMSA/ DPS staff to carry out integrated planning · Inclusive discussions, meetings, and communication providing equal and fair opportunities for integrated planning including fair/strategic allocation of resources
	Continued reliance on donors, donor fatigue	· Donor coordination on supply chain financing · Harmonization of activities among programmes/donors to avoid duplicative financing – rationalize funding across priority activities · Sustainable GoSL commitment towards SC financing · Improve NMSA/GoSL financial management systems and transparency (address donor policy requirements to support harmonized/pooled funding) · GoSL to ensure it creates adequate avenues for resources to be provided to health and SC · GoSL to gradually take over funding of procurement of commodities for sustainability · Clear business plan to leverage Cost Recovery and SLESHI contribution to finance SC
Operational risk	Corruption/non-transparency in the procurement process – unreliable supplier selection, low quality product, non-conformity with contract terms	· Policy to involve independent parties in the procurement process/committee · Robust procurement monitoring system, with partner representatives Ensure compliance with NPPA SOPs for procurement · Supplier pre-qualification, implemented through transparent process · Competitive open bid should only be allowed during the procurement process unless in cases where suppliers are limited for certain products
	Supplier delays in delivery of supplies	· Strong vendor/contract management system in place. Proactive, regular vendor communication. · Setting and monitoring of supplier performance indicators · Strict supervision of supplier adherence to terms and conditions by procurement committee

	Potential risk	Possible mitigation approach
Operational risk	Weak financial management systems at NMSA	· Recruit qualified personnel or reputable firm to manage finances for SC
	Insufficient coordination between NMSA procurement and programmes	· TWG in procurement activities, coordination among programmes
	Procurement and donations not based on essential medicines list (EML)	· Procurement committee to ensure adherence to EML · NMSA-DPS coordination on this activity · Update donation guidelines
	Non-adherence to STGs; irrational use of medicines	· Collect and use data to effectively pick up irrational prescribing and use · Pilot e-prescribing and dispensing and link to inventory management. Pilot, establish electronic medical records to track patient care · One integrated guideline to manage patients (all treatment guidelines should come from STGs). Policy of standardization of treatment guidelines. · Sensitization, education, training of prescribers and public on the benefit of RMU; engagement of community/civil society organizations · Work with medical council and other regulatory boards to ensure that health workers abide with treatment guidelines · Prioritize procurement of product that promote RMU (e.g., tests) · SOP to guide professionals in the rationale use of medicines · Review National Guidelines on the Rational Use of Blood and Blood Products · Capture RMU activities under annual workplan at every level of service delivery
	Absence of DTC/non-functioning DTC and absence of trained Clinical Pharmacists	· Introducing PharmD in the curriculum to train clinical pharmacists · Policies to include clinical pharmacist in the clinical team · Legal/accreditation requirement for hospitals to run DTCs · Non-financial incentives provided for members of the DTC (e.g., performance-based projects to be carried out within the hospitals)
	Poor warehousing/storage condition	· Strategic, cost-effective upgrade of warehouse stores infrastructure
Financial risk	Lack of sustainable funding for procurement & SC activities including lack of seed capital; poor quantification or overestimation of products for procurement; high procurement prices	· Committee on resource mobilization for procurement. Robust financial advocacy and mobilization with strong political and partner support · Advocacy for domestic funding, harmonized basket funding · Loan financing (loans) with clear debt repayment strategy. Advocate GoSL to guarantee soft loan or provide initial seed money to finance SC operations · Lobbying for increased GoSL contribution · Streamlined and approved price catalogue · Consolidated quantification/procurement products list · Making sure medicines are supplied that are actually in demand (harmonize products under CR and FHC) · Establish cost recovery system with clear policy on cost recovery, profits/ benefits to be made from it. · Make sure NMSA is competitive (e.g., vis-à-vis the private sector) in quality and affordability of drugs in the country
	Wastage, inefficient use of funds; fragmented funding allocation and management for various programmes	· Constantly explore ways to save money that can be utilized elsewhere · Harmonize funding for drugs in one basket

Milestones and key interventions

DPS is the steward of the NHSCS and will overall be accountable for its implementation and review. The NHSCS will be accompanied by a Costed Implementation Plan to guide strategic investments in the critical interventions. The following is a road map of high-level milestones to guide achievement of each strategic result area. Some potential key interventions to realize these milestones and/or to implement the key strategies are also highlighted in this section.

Strategic Result #1.

Streamlined governance and coordinated financing

2023–2024	2025–2026	2027
TORs for streamlined governance mechanism defined and adopted through public order (clarity on mechanisms it replaces) M&E plan for NHSCS defined SC performance and risk management framework defined	Performance management report implemented and used to review NHSCS and SC performance Coordinated SC financing mechanism set up, updated regularly	Routine central and district SC performance monitoring and management carried out TORs and update reviewed as needed

Alignment and coordination with NHSS performance management system and reviews, at central and district level

Change management and communication plan defined and implemented at all levels

NMSA representation and participation through the SC TWG at HSCC level (linked with Strategic Result #3), including standing agenda item to update the status of supply financing

Potential key interventions

1. Benchmarking of effective national level integrated coordination mechanisms for procurement and distribution – development of business case for integrated mechanism, including cost savings in planning functions (integrated quantification/ supply planning/distribution), optimized utilization of available fund and human resources, improved capacity to meet crosscutting programmatic goals and targets.

2. Performance management plan developed, including routine and ad hoc tools and activities, and data management plan to ensure performance plan is practical and implementable

3. Standardized systems and tools for SC risk management (e.g., coordinated SC audits, integrated facility surveys, updated SC maps describing standardized system parameters, customized to product category as needed)

4. Continued District Forecasting & Distribution TWG, integrated with national mechanism and with updated TORs and performance management system to align with national system

5. Routine updated resource mapping for medicines and SC systems, including financing and critical gaps

6. Communication and change management activities, integrated in health sector forums and mechanisms as far as possible, to support adoption of strategic priorities.

Strategic Result #2.

Increased Rational Medicines Use

2023–2024	2025–2026	2027
Definition of medicines targeted for RMU Data and analytical road map for integrating morbidity and medicines use (e.g., DHIS2, survey data sources) in SC decisions (quantification, procurement, distribution) EML and STGs printed and distributed to guide selection and increase rational prescribing of medicines.	Establishment of drug Information services at central and hospital level to provide access to information on medicines and use.	Funded, sustainable DTCs in 45% of district hospitals (based on target to achieve 60% by 2030).

Policy and roadmap for financing of DTCs long-term

Regular drug utilization records (prescription) audit done by DTCs and operational research by DPS to find issues regarding irrational prescribing and findings from such audits/research to feed into SC decisions

Potential key interventions

1. Expansion of the establishment of a TWG for RMU with the inclusion of relevant players such as DPS, NMSA, PBSL, SLMDA, Nurses Board, CMO and Clinical Health Officers, amongst others, with TORs to address issues regarding RMU. Consultative engagements with top officials of the ministry on the importance of RMU/ DTC.

2. Popularization of STG, EML among all health facilities and health professionals (printing and dissemination), in coordination with NHSS plans for standard health service delivery.

3. Continual engagement of community organizations to promote products safety awareness and appropriate utilization.

4. Deployment of Clinical Pharmacists in public hospitals to be part of the clinical team; manpower issues to be addressed by MoHS and Hospital HR.

5. Dispensing of interventions to reduce patients receiving medicines from unvetted sources (e.g., prepacked medicines given to the patients by pharmacy professionals in the hospital wards).

6. Inventory analytics feature in NMSA to flag unusual consumption (more or less than expected/targeted) of medicines at facility level, and definition of appropriate actions to be taken to address deviances.

7. Establishment and strengthening of Drug Information Service unit at central level (DPS) to provide information on drugs/medicines to clinicians and curb irrational prescribing and antimicrobial resistance as recommended by WHO.

8. In the short term, informing all donors involved in the SC about STGs and EML so that all procurements and donations are done based on EML and STG.

Strategic Result #3.

Strategic, cost-effective, quality procurement

2023–2024	2025–2026	2027
NMSA capability and capacity to manage cost-efficient and strategic procurement strengthened. Policy audit of donor and government procurement guidelines to address potential strategy bottlenecks.	Harmonized funding for drugs in one basket.	Sustainable financing of procurement and SC operations.

NMSA to regularly map and coordinate all resources – donor, GoSL supported procurement. Stakeholders engaged with clear strategy on fund mobilization and financing.

Financial and fiduciary management systems established, including independent financial audits.

Potential key interventions

1. Lessons learnt from successful public and private sector pharmaceutical funds.
2. NMSA financial business plan, including cost recovery strategy based on DPS policy. Considers seed capital requirements for NMSA procurement and operations, mark up assessment and policy, financing strategy including potential loans, partner financing, private sector contracting/sovereign guarantees. Business plan to include timelines and pre-requisites for transitioning procurement role to NMSA for programme areas.
3. Evaluation of private sector outsourcing and/or partnership models at scale, ensuring sustainability of NMSA funds while contracting quality and affordable supply of medicines (e.g., prime vendor model for hospitals).
4. Strengthening of NMSA financial and fiduciary systems to support establishment of pooled procurement basket fund.
5. Negotiated long-term agreements with manufacturers/suppliers (e.g., consignment front loading, good credit terms).
6. Pricing and import study – who is importing, what are they paying, what is fair price. Supports NMSA goal to ensure affordable drug imports. Coordinate with PBSL to monitor and improve status of market regulation of drug sales – reduce drug peddlers, formulation of policy on who is allowed to sell what.
7. Coordination of all procuring entities and line ministries to map what procurements are being done – NMSA to lead/co-lead process, including tracking of donor support levels in drug procurement landscape.
8. Coordinate and advocate for innovative supply and SC financing, in agreement with Health Financing Strategy (MoHS, 2021) implementation.
9. Ensuring alignment with evolving Sierra Leone health insurance scheme to support efficient and sustainable supply and financing of pharmacy benefit.

STRATEGIC RESULT #4.

Efficient and secure distribution to patients

2023–2024	2025–2026	2027
Policy for integrated approach defined and endorsed Integrated SC design developed, considering district context, and including short, medium, long-term targets for system implementation SOPs and playbooks for SC system implementation available, including clear definition of roles at all levels	Medium-term targets for integrated SC systems completed (Digital) information system actively linked with distribution activities (in coordination with Strategic Result #5).	Analytical tools institutionalized to support continuous system optimization and cost management (in coordination with Strategic Result #5)

NMSA-led coordination mechanisms supported and strengthened, to ensure communication and alignment of stakeholders to integrated approach (in coordination with Strategic Result #1)

Alignment of central and district structures to new roles and responsibilities

Training and continuous coaching system to support change management involved in redefined stakeholder roles (in coordination with Strategic Result #1 change management and communication plan)

Potential key interventions

1. Costed, scenario-based SC design and optimization analysis for integrated SC, based on volume projections, route and distribution frequency planning, and including warehouse and vehicle resourcing scenarios.

2. National and district level road map for implementation of SC design, including transformation and continuous improvement approaches to support sustainability of implementation.

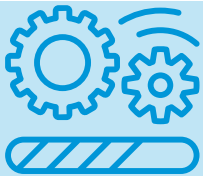
3. Guidelines/SOPs for system implementation at all levels

4. Human resources capacity development plan to support SC design implementation (in coordination with Strategic Result #6)

5. Performance management system to recognize strong performance and support lagging organizational performance.

Strategic Result #5.

Sustainable decision support systems



2023–2024	2025–2026	2027
Streamlined LMIS tools and systems under integrated SC design (in coordination with Strategic Result #4) Roles and responsibilities for data personnel aligned with integrated distribution strategy (in coordination with Strategic Result #4)	Automated analytics and feedback from LMIS to support SC decisions ((re) distribution, RMU)	Robust, functioning LMIS/ decision support system, demonstrating SC performance results

Comprehensive LMIS and data governance plan developed and implemented, evaluating adequacy of all systems for next five years; phased road map for roll out, clarifying standards, tools, roles, and financing plan; includes oversight and coordination mechanism with Supply Chain Technical Working Group for the information of the Director of Policy, Planning, and Information (DPPI).

Change management plan to support and enable decision makers to interpret and use data for relevant SC decisions (in coordination with Strategic Result #1).

Potential key interventions

1. Phased digitalization of RRIV. Encourage use of Tablets for reporting at PHUs level (e.g., Project Last Mile). Ensure availability of reporting tools as appropriate, including automation of opening/closing balances on eLMIS tools to encourage SMS reporting in areas with little or no coverage.

2. LMIS/data governance plan addressing critical issues and establishing sustainable decision support system

3. Supporting continuous data flow and exchange between DPS and NMSA to enable SC operations

4. Integration of tools to support RMU decisions (review patients seen with drugs used)

5. Providing continuous feedback on reporting rates and data accuracy for end users and follow up on poor reporting facilities, identify and resolve issues promptly. Inculcate culture of feedback on decisions around data

6. Engagement of hospital management teams on data collection issues with respect to LMIS

7. HR recruitment and development plan for data related personnel, including DIOs (see Strategic Result #6). Empowerment of district medical store staff to do data quality checks at facilities frequently.

8. Introduction of eLMIS training into pre-service curriculum and university. (Note: Supply chain management is already incorporated in the university curriculum and taught in the final year of bachelor's programme).

9. Sustainable, coordinated approach to provide internet connectivity at facilities and districts.

10. Empowerment of DFD TWGs in all districts (linked to Strategic Result #1).

Future considerations:

11. Evaluation and phased, coordinated introduction of digitalized patient level data, registers, e-script, e-dispensing. E-stock management (e.g., at hospitals) data uploaded to DHIS2. Leverage government and partner support in health sector data digitalization.

12. Staff motivation for good reporting and punitive measures for consistent non-reporting.

Strategic Result #6.

SC skills and workforce development

2023–2024	2025–2026	2027
Key SC roles/positions to be captured in Scheme of Service defined with TORs Recruitment plan in place in collaboration with MoHS HR Directorate and human resource for health Training plan for staff undertaking SC roles developed, prioritizing key strategic functions/skills such as procurement and data use for SC decision-making	Structured staff compensation system for excellent performance created	Performance management processes implemented; performance review conducted for all SC staff HR policy document for SC developed and available to HR departments

Appropriate HR budget for SC developed, including collaboration with stakeholders for budget allocation over five-year plan.

Partners and other stakeholders coordinated to collaborate on and align all SC trainings.

Potential key interventions

1. Political advocacy to ensure political will to undertake decisions like recruitment on large scale. Government needs to recognize SC HR as a key priority.
2. Development of staff career pathways for staff involved in SC roles (across NMSA & DPS); can be conceived along with definition of TORs for SC role/positions.
3. Innovative/cost-effective competency-based capacity-building approaches (self-paced, virtual).
4. Evaluation and support for pre-service SC trainings modules with universities and/or professional association.
5. Investigation and incorporation of international SC certification trainings and programmes for strategic functions (such as procurement, data management and analytics).
6. Development of succession strategy for SC leadership and management roles to ensure operations continue smoothly.
7. Creation of management committee responsible for staff welfare and collaborating with stakeholders for the provision of staff benefits, services and facilities. Collaboration with multiple stakeholders (pharmacists, other workers like logisticians, data/information personnel) and the responsible departments to help alleviate collectively relevant issues.
8. Short-term issue to address: back payment of NMSA store staff salaries.

High level costed implementation plan

Introduction

In August 2021, the Ministry of Health (MoH) of Sierra Leone completed the National Supply Chain Strategy (NSCS), a five year strategic plan that provides a framework and strategic road map for strengthening the country's pharmaceutical supply chain. Aligned with the recently updated National Health Strategic Plan (NHSS, 2021–2025) and developed in a highly consultative approach, the NSCS articulates six strategic results designed around core principles of integration, efficiency, accountability and transparency, maximization of returns from existing strengths in the national SC system, and sustainability. The strategic focus areas include:

1. **Governance & financing:** Establish a streamlined, coordinated national SC governance mechanism, linking central and district level mechanisms, and centrally harmonizing the planning and deployment of investments in medicines and SC systems.

2. **Rational medicines use:** Generate, analyse and use data linking the consumption of medicines and morbidity, to improve quantification, procurement and distribution of target products.

3. **Strategic procurement:** Strengthen and establish centralized procurement capacity within NMSA to coordinate and manage all commodity procurements in the health sector, leveraging strategic procurement management systems and pooled financing mechanisms.

4. **Patient-centric distribution:** Design and implement a national, integrated distribution system that leverages the district's role in active facility-level inventory management and cost-effectively responds to patient and product requirements in the next five years.

5. **Decision support systems:** Integrate LMIS data management systems and processes with distribution and supply planning processes, strategically phasing-in the digitalization and automation of data capture, reporting and analysis tools at service delivery points.

6. **Workforce development:** Begin implementation of a DPS-NMSA-coordinated harmonized human resources capacity development plan for the national SC, including measures to institutionalize SC roles in health sector scheme of service, and to ensure professionalization of SC competency in the health sector.

The NSCS also defines key milestones and interventions to guide the implementation of strategic results over the next five years. Hence, the objective of this document is to provide an estimate of the overall investment envelope that will be required to catalyse the NSCS. This estimate is based on the key interventions identified in the NSCS, and aims to provide a 'high level' cost of the package of interventions envisioned in the NSCS over the next five years. The document is structured in three parts (spreadsheets):

1. **The Summary Page - including a description of the methodology informing the Costed Implementation Plan (CIP), and the summary of costing findings**

2. **The Costing Page - providing a worksheet used to develop cost estimates**

3. **The Assumptions Page - documenting the high level cost assumptions driving the estimates.**

The CIP is intended to provide a reference document to gauge the adequacy of existing catalytic investments planned to improve the health supply chain including potential funding gaps. Existing support plans can also be aligned to the strategic areas and better leveraged to ensure a concerted investment impact on the performance of the national SC system.

The CIP does not include costing of SC systems targeted by the NSCS, and the impact that NSCS interventions will have on these systems. It is expected that these costs will be quantified as either a baseline in the NSCS performance management plan, or as part of the implementation of strategic interventions included in the NSCS.

Methodology

The CIP is based on the Key Interventions defined in the NSCS (2021–2025) document for each of the strategic areas. The interventions are costed using an activity-based approach that considers the additional activities required by the responsible organization to implement the interventions. Interventions that are considered part of routine or standard functions of the responsible organization are not costed, the CIP rather focusing on costing interventions that are considered catalytic or marginal to the activities of the organization.

Based on this marginal cost approach, assumptions were necessary, the most significant ones of which are described here.

1. The costing approach assumed responsible organizations currently have the minimal level of staffing and human resources capacity needed to shepherd and support the implementation of the NSCS in the coming five years. The one exception to this assumption is Intervention 5.4, in the area of Rational Medicines Use (RMU), where it is recommended that a cadre of Clinical Pharmacists be recruited to support strategic result targets.

Meanwhile, the following interventions highlighted rely directly on the assumption of an existing human resources capacity to ensure successful implementation: note that, overall, the leadership and management level staff are also assumed in place to oversee the implementation of the NSCS over the next five years:

- 1.4 4) Continued District Forecasting & Distribution (DFD), Technical Working Group (TWG) integrated with the national mechanism and with updated TORs and performance management system to align with national system.
- 2.1 1) Establishment of a TWG for RMU with the inclusion of relevant players such DPS, NMSA, PBSL, SLMDA, Nurses Board, CMO, Clinical Health Officer, among others, with TORs to address issues regarding RMU. Consultative engagements with top officials of the ministry on the importance of RMU/ DTC.
- 2.2 2) Popularization of STG, EML to all health facilities and health professionals (printing and dissemination), in coordination with NHSS plans for standard health service delivery.
- 2.3 3) Continual engagement of community organizations to promote products safety awareness and appropriateness.
- 2.5 5) Dispensing interventions to reduce patients receiving medicines from unvetted sources (e.g., prepacked of medicines given to the patients by pharmacists in the hospital wards).
- 4.5 5) Performance management system developed to recognize strong performance and support lagging organizational performance.
- 5.3 3) Supporting continuous data flow and exchange between DPS and NMSA to enable SC operations.
- 5.4 4) Integration of tools to support RMU decisions (review patients seen with drugs used).
- 5.5 5) Providing continuous feedback on reporting rates and data accuracy for end users and follow up on poor reporting facilities, identify and resolve issues promptly. Inculcate culture of feedback on decisions around data.

- 5.6 6) Engagement of hospital management teams on data collection issues with respect to LMIS.
- 5.7 7) HR recruitment and development plan for data personnel, including DIOs (see Strategic Result #6). Empowerment of district medical store staff to do data quality checks at facilities frequently.
- 5.9 9) Sustainable, coordinated approach to provide internet connectivity at facilities and districts.
- 5.12 12) Staff motivation for good reporting and punitive measures for consistent non-reporting.
- 6.7 7) Creation of management committee responsible for staff welfare and collaborating with stakeholders for the provision of staff benefits, services and facilities. Collaboration with multiple stakeholders (pharmacists, other workers like logisticians, data/information personnel) and the responsible departments to help alleviate collectively relevant issues.
- 6.8 8) 'Short term' issue to address: back payment of NMSA store staff salaries.

2. Certain interventions were considered broader than the purview of the NSCS, in which case the CIP assumed that required resources would be costed and leveraged in broader health sector plans, and are not included here. These interventions include:

- 5.9 9) Sustainable, coordinated approach to provide internet connectivity at facilities and districts.
- 5.11 11) Evaluation and phased, coordinated introduction of digitalized patient level data, registers, e-script, e-dispensing. E-stock management (e.g., at hospitals) of data uploaded to DHIS2. Leverage government and partner support in health sector data digitalization.

3. Estimated total cost figures (plugs) were used for certain interventions, based on historical ballpark estimates of costs for similar interventions (i.e., in lieu of more detailed cost estimation approaches). These assumptions can further be refined with more targeted, detailed costing as part of technical assistance (TA) activities used to implement relevant/ related interventions. Budget plugs were considered for the following:

- 1.6 6) Communication and change management activities, integrated in health sector forums and mechanisms as far as possible, to support adoption of strategic priorities.
- 2.2 2) Popularization of STG, EML to all health facilities and health professionals (printing and dissemination), in coordination with NHSS plans for standard health service delivery.
- 2.7 7) Establishment and strengthening of drugs information Service unit at central level (DPS) so to provide information on drugs/medicines to clinicians and curb irrational prescribing and antimocrobian resistance as recommended by WHO.
- 3.6 6) Pricing and import study – who is importing, what are they paying, what is fair price. Supports NMSA goal to ensure affordable drug imports. Coordinate with Pharmacy Board of Sierra Leone (PBSL) to monitor and improve status of market regulation of drug sales – reduce drug peddlers, formulation of policy on who is allowed to sell what.
- 4.2 2) National and district level road map for implementation of SC design, including transformation and continuous improvement approaches to support sustainability of implementation.
- 5.1 1) Phased digitalization of RRIV. Encourage use of tablets for reporting at PHU level (e.g., Project Last Mile). Ensure availability of reporting tools as appropriate, including automation of opening/ closing balances on eLMIS tools to encourage SMS reporting in areas with little or no coverage.

4. Timing (Due column in Costing Page): The target due date for initially achieving an intervention is considered the due date for that intervention and the costs to implement the intervention are considered for that year or earlier. Certain interventions may continue after that time in which case the due date for that intervention may be described as 'ongoing'. Note, a modest inflation rate is considered and compounded for costs estimates in years two to five of the CIP.

5. Costs are estimated in US dollars. Where Sierra Leone Leones were used as the basis for estimated, the exchange rate prevailing at the time of this exercise was used for conversion (see Assumptions Page).

Findings

Overall, an estimated $5.6 million investment envelope is considered necessary to support the implementation of the Sierra Leone NSCS. Table 1 below provides the more detailed breakdown of this 'high level' estimate. The bulk of this investment, close to 75 per cent, is targeted in the first two years of the NSCS, and largely on Strategic Results 1, 2 and 3: Governance & Coordinated Financing, RMU, and Strategic Procurement.

Key cost drivers by area include:

- **Governance & financing:** Dedicated programme management support to shepherd and enable implementation of the NSCS interventions and communications/ change management; development of performance and risk management systems.
- **RMU:** Supporting establishment of a drug information service unit; popularization of standard treatment and dispensing guidelines.
- **Strategic procurement:** Business/financial/procurement planning; strengthening financial and fiduciary systems; strategic private sector engagement.

Costs estimates represent average cost estimates rather than cost ceilings. Investment quantifications may be adjusted, upward and downward, as a result of NSCS implementation, including potentially new investment requirements being considered in the future (e.g., as a result of SC design considerations).

Table 1: Summary of estimated cost for implementing NSCS (2023–2027)

Strategic Result	Year 1 - 2023	Year 2 - 2024	Year 3 - 2025	Year 4 - 2026	Year 5 - 2027	Total	% of Total
1. Governing and financing	$935,700	$759,687	$100,786	$103,809	$106,923	$2,006,905	36%
2. Rational medicines use	$349,500	$412,513	$341,512	$170,128	$206,905	$1,480,557	26%
3. Strategic procurement	$382,795	$210,838	$17,823	$18,358	$18,909	$648,722	12%
4. Patient-centric distribution	$191,200	$206,000	$-	$-	$-	$397,200	7%
5. Decision support	$130,050	$261,672	$4,297	$-	$-	$396,018	7%
6. Workforce development	$7,650	$399,125	$95,799	$98,673	$101,633	$702,881	12%
Total	$1,996,895	$2,249,834	$560,217	$390,968	$434,370	$5,632,284	100%
Annual cost as % of total	**35%**	**40%**	**10%**	**7%**	**8%**	**100%**	

Table 2 presents a breakdown of Implementation costs by responsible organization. Implementation of interventions is expected to involve other stakeholder organizations, including civil society organizations.

Table 2: Estimated cost of implementing NSCS (2023–2027), by responsible organization

Responsible Organization	2023-2027	% of Total
DPS	$2,169,266	39%
NMSA	$1,149,798	20%
DPS and NMSA	$2,269,383	40%
Districts total	$43,837	1%
	$5,632,284	100%

	Yr1 -2023	Yr2 - 2024	Yr3 - 2025	Yr4 - 2026	Yr5- 2027
Annual Total	$1,996,895	$2,249,834	$560,217	$390,968	$434,370
Cumulative Annual	$ 1,996,895	$4,246,729	$4,806,946	$5,197,914	$5,632,284

Strategic Area	Strategic Milestones (from NSCS (2021-2025)	Sub #	Key Interventions	Respon-sible	Due (mm-yy)	Cost category	Levels	Cost type	Costing notes	Yr1 -2023	Yr2 - 2024	Yr3-2025	Yr4 - 2026	Yr5- 2027
Governance & financing	I. TORs for streamlined governance mechanism defined and adopted though public order (clarity on mechanisms it replaces). (2021-2022) II. Monitoring & Evaluation plan for NSCS defined. (2021-2022) III. SC performance and risk management framework defined. (2021-2022) IV. Performance management report implemented and used to review NSCS and SC performance. (2023-2024) V. Coordinated SC financing mechanism, updated regularly. (2023-2024) VI. Routine central and district SC performance monitoring and management. (2025) VII. Review of terms of reference and update as appropriate. (2025) VIII. Alignment and coordination with National Health Sector Strategy performance management system and reviews, at central and district level. (2021-2025) IX. Change management and communication plan defined and implemented at all levels. (2021-2025)	1.1	1) Benchmarking of effective national level integrated coordination mechanisms for procurement and distribution (e.g., Rwanda) – development of business case for integrated mechanism, including cost savings in planning functions (integrated quantification/ supply planning/ distribution), optimized utilization of available fund and human resources, improved capacity to meet 'crosscutting' programmatic goals and targets.	DSP	Oct. 21	TA	MoH	TA, work-shop	4-week STTA (1-week remote, 3-weeks in-country); 1 2-day endorsement workshop with central/ district stakeholders	$78,100				
		1.2	2) Performance management plan developed, including routine and ad hoc tools and activities, and data management plan to ensure performance plan is practical and implementable.	DSP and NMSA	Dec. 21	TA	MoH	TA, work-shop	6-week STTA (2-weeks remote, 4-weeks in-country); 1 3-day development/ endorsement workshops	$97,800				
		1.3	3) Standardized systems and tools for SC risk management (e.g., coordinated SC audits, integrated facility surveys, updated SC maps describing standardized system parameters (customized to product category as needed).	DSP and NMSA	Dec. 21	TA	MoH	TA, work-shop	4-week STTA (2-weeks remote, 2-weeks in-country); 1 3-day development/ endorsement workshops	$64,800				
		1.4	4) Continued District Forecasting & Distribution (DFD) TWG, integrated with national mechanism and with updated TORs and performance management system to align with national system.	Districts	Feb 22	Activity	DP	TA, capa-city building	TA as part of 1.2 above; training (1-week 30-persons) + roll out of performance management system (quarterly supervision of 17 districts by 2 persons, 2 days per district).		$43,837			
		1.5	5) Routine updated resource mapping for medicines and SC systems, including financing and critical gaps.	NMSA	Ongoing	TA	Other central	TA	Local STTA totaling 8-weeks per year	$20,000	$20,600	$21,218	$21,855	$22,510
		1.6	6) Communication and change management activities, integrated in health sector forums and mechanisms as far as possible, to support adoption of strategic priorities.	DSP and NMSA	Ongoing	Com-muni-cation	Other central		Various activities: annual budget plug. Program Management type support to boost DPS (and NMSA) Capacity in shepherding, implementing, mornitoring the Strategics Plan (international firm - 40 weeks per year, 1st 2 years)	$675,000	$695,250	$79,568	$81,955	$84,413

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Strategic Area	Strategic Milestones (from NSCS (2021-2025)	Sub #	Key Interventions	Respon-sible	Due (mm-yy)	Cost category	Levels	Cost type	Costing notes	Yr1 -2023	Yr2 - 2024	Yr3 -2025	Yr4 - 2026	Yr5-2027
2. Rational medicines use	I. Definition of medicines targeted for RMU. (2021-2022) II. Data and analytical road map for integrating morbidity and medicines use (e.g., DHIS2, survey data sources) in SC decisions (quantification, procurement, distribution). (2021-2022) III. Essential Medicines List and standard treatment guidelines printed and distributed to guide selection and increase rational prescribing of medicines. (2021-2022) IV. Establishment of drug Information services at central and hospital level to provide access to information on medicines and use. (2023-2024) V. Funded, sustainable drug therapeutics committees in 45% of district hospitals (based on target to achieve 60% by 2030). (2025) VI. Policy and road map for financing of drug therapeutics committees long-term. (2021-2025) VII. Regular drug utilization records (prescription) audit done by drug therapeutics committees and operational research by DPS to find issues regarding irrational prescribing and findings from such audits/ research to feed into SC decisions. (2021-2025)"	2.1	1) Establishment of a TWG for RMU with the inclusion of relevant players such DPS, NMSA, PBSL, SLMDA, Nurses Board, CMO, Clinical Health Officer, among others, with TORs to address issues regarding RMU. Consultative engagements with top officials of the ministry on the importance of RMU/ DTC.	DSP	Oct. 21	Activity	MoH	TA, Activities	Local STTA (3-weeks)	$7,500				
		2.2	2) Popularization of STG, EML to all health facilities and health professionals (printing and dissemination), in coordination with NHSS plans for standard health service delivery.	DSP	Dec. 21 Dec. 22	Activity	MoH	Various	Integrate in NHSS activities as far as possible. Annual budget plug.	$100,000	$103,000			
		2.3	3) Continual engagement of community organizations to promote products safety awareness and appropriate utilization.	DSP	Ongoing	Activity	MoH	Various	Part of 2.2					
		2.4	4) Deployment of Clinical Pharmacists in public hospitals to be part of the clinical team; manpower issue to be addressed by MoHS and Hospital HR.	DSP	Ongoing	HR	HF	HR	1 Clinical pharmacist in up to 45% of hospitals (30 out of 67) by 2025		$66,253	$93,262	$124,233	$159,633
		2.5	5) Dispensing interventions to reduce patients receiving medicines from unvetted sources (e.g., prepacked of medicines given to the patients by pharmacists in the hospital wards).	DSP	Ongoing	Activity	Other central	Training	Training workshops, in TOT (3-day small workshop, bi-annually)	$42,000	$43,260	$44,558	$45,895	$47,271
		2.6	6) Inventory analytics feature in NMSA to flag unusual consumption (more or less than expected/ targeted) of medicines at facility level, and definition of appropriate actions to be taken to address deviances.	MNSA	June 23	TA	MoH	System deploy-ment	12-week STTA for systems development & deployment; assumes NMSA enterprise strengthened before initiation			$203,693		
		2.7	7) Establishment and strengthening of Drug Information Service unit at central level (DPS) so as to provide information on drugs/medicines to clinicians and curb irrational prescribing and antimicrobial resistance as recommended by WHO.	DSP	Dec. 22	Systems	MoH	System deploy-ment	System deployment - budget plug (including infrastructure, systems, capacity building)	$200,000	$200,000			
		2.8	8) Short term: All donors involved in the SC informed about STGs and EML so that all procurements and donations should be done based on EML and STG.	DSP	Ongoing	Com-muni-cation	MoH	Com-muni-cation	Incorporated in existing donor forums, and 2.2					

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Strategic Area	Strategic Milestones (from NSCS (2021-2025)	Sub #	Key Interventions	Respon-sible	Due (mm-yy)	Cost category	Levels	Cost type	Costing notes	Yr1-2023	Yr2-2024	Yr3 -2025	Yr4-2026	Yr5-2027
3. Strategic procurement	I. NMSA capability and capacity to manage cost-efficient and strategic procurement strengthened. (2021-2022) II. Policy audit of donor and government procurement guidelines to address potential strategy bottlenecks. (2021-2022) III. Harmonized funding for drugs in one basket. (2023-2024) IV. Sustainable financing of procurement and SC operations (2025) V. NMSA unit to regularly map and coordinate all resources – donor, GoSL supported procurement. Stakeholders engaged with clear strategy on fund mobilization and financing. (2021-2025) VI. Financial and fiduciary management systems established, including independent financial audits. (2021-2025)	3.1	1) Benchmarking of successful public and private sector pharmaceutical funds.	MNSA	Dec. 21	TA	Other central	TA, Exchange tour	Study tour, and/or 4-week STTA	$63,000				
		3.2	2) NMSA financial business plan, including cost recovery strategy. Considers seed capital requirements for NMSA procurement and operations, mark up assessment and policy, financing strategy including potential loans, partner financing, private sector contracting/ sovereign guarantees. Business plan to include timelines and pre-requisites for transitioning procurement role to NMSA for program areas.	MNSA	Jan.22	TA	Other central	TA strategic planning	8-week STTA (3-week remote, 5-week in-country); 2 2-day strategic retreats	$70,400	$40,436			
		3.3	3) Evaluation of private sector outsourcing and/or partnership models at scale, ensuring sustainability of NMSA funds while contracting quality and affordable supply of medicines (e.g., prime vendor model for hospitals).	MNSA	Dec.21	TA	Other central	Evalua-tion, TA strategic consulta-tion	4-week local STTA, 2 2-day strategic consultations	$24,800				
		3.4	4) NMSA financial and fiduciary systems strengthening to support establishment of pooled procurement basket fund.	MNSA	Ongoing	TA	Other central	Technical service	24-week local firm STTA (12-weeks in Year 1 and 2); 4-weeks ongoing support	$50,400	$51,912	$17,823	$18,358	$18,909
		3.5	5) Negotiated 'long term' agreements with manufacturers/ suppliers (e.g., consignment front loading, good credit terms).	MNSA	Ongoing	TA	Other central	TA Training	12-week STTA; 1 week training for 3 procurement officers	$74,195	$53,600			
		3.6	6) Pricing and import study – who is importing, what are they paying, what is fair price. Supports NMSA goal to ensure affordable drug imports. Coordinate with PBSL to monitor and improve status of market regulation of drug sales – reduce drug peddlers, formulation of policy on who is allowed to sell what.	MNSA	March.22	TA	Other central	Study TA	Pricing Study, including 2-day consultation workshop - budget plug	$100,000				
		3.7	7) Coordination of all procuring entities and line ministries to map what procurements are being done – NMSA to lead/co-lead process, including mapping of donor support levels in drug procurement landscape.	MNSA	Ongoing	TA	Other central	TA	STTA, part of 1.5 above					
		3.8	8) Coordinate and advocate for innovative supply and SC financing, in coordination with Health Financing Strategy (MoHS, 2021) implementation – e.g., tax on mobile phone use, corporate social responsibility, mining sector levy, fuel price levy, sin tax allocation, withholding tax ring fenced for FHC, negotiate portion of domestic financing from national revenue authority and MoF; grant and funds from philanthropic associations; digitalization of revenues.	MNSA	Dec. 22	TA	Other central	TA	4-week STTA		$64,890			
		3.9	9) Ensure alignment with health insurance scheme to support efficient and sustainable supply and financing of pharmacy benefit.	MNSA	Dec. 22	TA	Other central	TA	Part of 3.8 above					

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Strategic Area	Strategic Milestones (from NSCS 2021-2025)	Sub #	Key Interventions	Respon-sible	Due (mm-yy)	Cost category	Levels	Cost type	Costing notes	Yr1-2023	Yr2-2024	Yr3-2025	Yr4-2026	Yr5-2027
4.Patient-centric distribution	I.Policy for integrated approach defined and endorsed. (2021-2022) II. Integrated SC design developed, considering district context, and including short, medium, long-term targets for system implementation. (2021-2022) III. Standard operating procedures and playbooks for SC system implementation available, including clear definition of roles at all levels. (2021-2022) IV. Medium-term targets for integrated SC systems completed. (2022-2024) V. (Digital) information system actively linked with distribution activities (in coordination with Strategic Result #5). (2022-2024) VI. Analytical tools institutionalized to support continuous system optimization and cost management (in coordination with Strategic Result #5). (2025) VII. NMSA-led coordination mechanisms supported and strengthened, to ensure communication and alignment of stakeholders to integrated approach (in coordination with Strategic Result #1). (2021-2025) VIII. Alignment of central and district structures to new roles and responsibilities. (2021-2025) IX. Training and continuous coaching system to support change management involved in redefined stakeholder roles (in coordination with Strategic Result #1 change management and communication plan). (2021-2025).	4.1	1) Costed, scenario-based SC design and optimization analysis for integrated SC, based on volume projections, route and distribution frequency planning, and including warehouse and vehicle resourcing scenarios.	MNSA	Dec. 21	TA	Other central	TA design workshop	10-week STTA; 5-day design consultation with districts	$191,200				
		4.2	2) National and district level roadmap for implementation of SC design, including transformation and continuous improvement approaches to support sustainability of implementation.	DSP	March.22	TA	Other central	Capacity building	SC system design implementation - budget plug		$206,000			
		4.3	3) Guidelines/ SOPs for system implementation at all levels.	DSP	Dec.21	TA	MoH	TA	Part of STTA under 4.1					
		4.4	4) Human resources capacity development plan to support SC design implementation (in coordination with Strategic Result #6).	DSP and MNSA	March.21	TA	MoH	TA	Link with interventions under Strategic Area 6.					
		4.5	5) Performance management system developed to recognize strong performance and support lagging organizational performance.	DSP	March.22	Activity	MoH	Activity	DPS led					

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Strategic Area	Strategic Milestones (from NSCS (2021-2025)	Sub #	Key Interventions	Respon-sible	Due (mm-yy)	Cost category	Levels	Cost type	Costing notes	Yr1 -2023	Yr2 - 2024	Yr3 -2025	Yr4 - 2026	Yr5- 2027
5. Decision support systems	I. Streamlined LMIS tools and systems under integrated SC design (in coordination with Strategic Result #4). (2021-2022) II. Roles and responsibilities for data personnel aligned with integrated distribution strategy (in coordination with Strategic Result #4). (2021-2022) III. Automated analytics and feedback from LMIS to support SC decisions ((re)distribution, rational medicines use). (2021-2022) IV. Robust, functioning LMIS/ decision support system, demonstrating SC performance results. (2025) V. Comprehensive LMIS and data governance plan developed and implemented, evaluating adequacy of all systems for next 5 years, phased roadmap for roll out, clarifying standards, tools, roles, and financing plan; includes oversight and coordination mechanism with Director of Policy, Planning and Information/ National Health Sector Strategy focal person. (2021-2025)	5.1	1) Phased digitalization of RRIV. Encourage use of tablets for reporting at PHUs level (e.g., Project Last Mile). Ensure availability of reporting tools as appropriate, including automation of opening/ closing balances on eLMIS tools to encourage SMS reporting in areas with little or no coverage.	DPS	déc-22	Systems	MoH	System deloyment	System deployment - budget plug (including infrastructure, systems, capacity building)		$257, 500			
		5.2	2) LMIS/Data governance plan addressing critical issues and establishing sustainable decision support system.	DPS	déc-21	TA	MoH	TA	8-week STTA	$126,000				
		5.3	3) Supporting continuous data flow and exchange between DPS and NMSA to enable SC operations.	DPS	Ongoing	Activity	MoH		Part of 5.2 support					
		5.4	4) Integration of tools to support RMU decisions (review patients seen with drugs used)	DPS	Ongoing	Activity	MoH	System deloyment	Part of 2.6 support					
		5.5	5) Providing continuous feedback on reporting rates and data accuracy for end users à follow up on poor reporting facilities, identify and resolve issues promptly. Inculcate culture of feedback on decisions around data.	DPS	Ongoing	Activity	MoH	Activity	Part of routine operations; part of 5.2 support					
		5.6	6) Engagement of hospital management teams on data collection issues with respect to LMIS.	DPS	ongoing	Activity	MoH	Activity	Part of routine operations; supportive supervision support (5-days bimonthly)	$4,050	$4,172	$4,297		
		5.7	7) HR recruitment and development plan for data related personnel, including DIOs (see Strategic Result #6). Empowerment of district medical store staff to do data quality checks at facilities frequently.	DPS	déc-22	Activity	MoH	Activity	Link with Strategic Area 6 interventions below					
		5.8	8) Introduction of eLMIS training into pre-service curriculum & University (note: SCM is already incorporated in the university curriculum and taught in final year of bachelor's program).	DPS	déc-22	TA	MoH	TA, TOT	Link with 6.4 below					
		5.9	9) Sustainable, coordinated approach to provide internet connectivity at facilities and districts.	DPS	Ongoing	Activity	MoH	Activity	Link to cross-sector interventions & funding					
		5.10	10) Empowerment of DFD TWGs in all districts (linked to Strategic Result #1).	Districts	Ongoing	TA	DP	TA	Part of support under 1.4					
		5.11	11) Evaluation and phased, coordinated introduction of digitalized patient level data, registers, e-script, e-dispensing. E-stock management (e.g., at hospitals) à data uploaded to DHIS2. Leverage government and partner support in health sector data digitalization.	DPS	TBD	TA	MoH	TA	Link to intra-sector interventions & funding					
		5.12	12) Staff motivation for good reporting and punitive measures for consistent non-reporting.	DPS	Ongoing	Activity	MoH	Activity	Link to 4.5					

Sierra Leone National Supply Chain Strategy - 'High level' Costed Implementation Plan

Strategic Area	Strategic Milestones (from NSCS (2021-2025)	Sub #	Key Interventions	Respon-sible	Due (mm-yy)	Cost category	Levels	Cost type	Costing notes	Yr1 - 2023	Yr2-2024	Yr3 -2025	Yr4-2026	Yr5-2027
6. Workforce development	I. Key SC roles/posi□ons to be captured in Scheme of Service defined with terms of reference. (2021-2022) II. Recruitment plan in place in collabora□on with MOHS Human Resources Directorate and human resource for health. (2021-2022) III. Training plan for staff undertaking SC roles developed, prioritizing key strategic functions/skills such as procurement and data use for SC decision making. (2021-2022) IV. Structured staff compensation system for excellentperformance created. (2022-2024) V. Performance management processes implemented; performance review conducted for all SC staff. (2025) VI. HR policy document for SC developed and available to HR departments. (2025) VII. Appropriate human resources budget for SC developed, including collaboration with stakeholders for budget allocation over 5-year plan. (2021-2025) VIII. Partners and other stakeholders coordinated to collaborate on and align all SC trainings. (2021-2025)performance created. (2022-2024)	6.1	1) Political advocacy to ensure political will to undertake decisions like recruitment on large scale. Government needs to recognize SC HR as a key priority.	DPS	Dec.22	TA	MoH	TA	3-week STTA (1-week remote, 2-weeks in-country); link with 6.2; 2 1-day advocacy/ consultation workshops		$44,393			
		6.2	2) Development of staff career pathways for staff involved in SC roles (across NMSA & DPS) – can be conceived along with definition of TORs for SC role/ positions.	DPS and MNSA	Dec.22	TA	MoH	TA	8-week STTA (4-week remote, 4 week in-country); 2 1-day advocacy/consultation workshops		$93,833			
		6.3	3) Innovative/ cost effective competency-based capacity building approaches (self-paced, virtual).	DPS	Dec.22	TA	MoH	Capacity buiding	8-week STTA (4-week remote, 4 week in-country)		$88,580			
		6.4	4) Evaluation and support for pre-service SC trainings modules with universities and/or professional association.	DPS	Dec.22	TA	MoH	TA	4-week STTA; 3-day TOT training for 25 people		$79,310			
		6.5	5) Investigation and incorporation of international SC certification trainings and programs for strategic functions (such as procurement, data management and analytics).	DPS and MNSA	Ongoing	Capacity buiding	MoH	Training	Training Annual training plan - budget plug		$77,250	$79,568	$81,955	$84,413
		6.6	6) Development of succession strategy for SC leadership and management roles to ensure operations continue smoothly.	DPS	Dec.22	TA	MoH	TA	Part of 6.2 and 6.4 support					
		6.7	7) Creation of management committee responsible for staff welfare and collaborating with stakeholders for the provision of staff benefits, services and facilities. Collaboration with multiple stakeholders (pharmacists, other workers like logisticians, data/information personnel) and the responsible departments to help alleviate collectively relevant issues.	DPS and MNSA	Ongoing	Activity	MoH	Activity	Support for consultative/ collaborative activities (bimonthly 1-day workshops)	$7,650	$15,759	$16,232	$16,719	$17,220
		6.8	8) Short term issue to address: back payment of NMSA store staff salaries.	DPS and MNSA	Oct.21	Activity	MoH	Activity	Part of routine operations.					

Global assumptions for cost estimation

Exchange Rate: SLL 17.58 - $1
Annual Inflation: 3% Applied to costs occuring in Years 2 to 5, compounded each year

	Unit	Quantity	Unit cost	Total	
Annual staff salaries					
Clinical Pharmacist					$4,084
Annual Salary Increment					5%
Day workshop - small (20 people), daily					
Hall Rental	Day	1	$300	$300	
M&E	Person-day	20	$20	$400	
Transport	Person-day	20	$20	$400	
Material	Per workshop	1	$500	$500	
Total				**$1,600**	
Multi-day workshop - small (20), daily					
Hall Rental	Day	1	$300	$300	
Lodging	Person-day	20	$120	$2,400	
M&E	Person-day	20	$20	$400	
Transport	Per workshop	20	$20	$400	
Material	Per workshop	1	$800	$800	
Total				**$4,300**	
International Short-Term Technical Assistance (STTA)					
In-country STTA (including stay)	Person-week	1	$15,000	$15,000	
Travel to country	Per trip	1	$3,000	$3,000	
Remote STTA	Person-week	1	$5,000	$5,000	
Travel inside country	Person-week	1	$1,500	$1,500	
Local STTA					
Rate	Person-day	1	$500	$500	
Supervision budget					
Vehicle rental	Per day	1	$115	$115	
Per diem	Person-day	1	$20	$20	
Training/Workshop overseas					
Course fee	Per person	1	$2,000	$2,000	
Travel overseas Lodging/M&IE	Per person	1	$3,000	$3,000	
Lodging/M&E	Person-day	1	$295	$295	
Training in-country					
Lodging	Person-day	1	$120	$120	
M&E	Person-day	1	$40	$40	
Transport	Per training	1	$40	$40	
Material	Per training	1	$1,000	$1,000	
Other budget estimates/ plugs					
1.6 Communication and change management activities	**Annual**		**$75,000**	**$75,000**	
2.2 Popularization of STG (including printing costs)	**2021-2022**		**$100,000**	**$100,000**	

	Unit	Quantity	Unit cost	Total	
Day workshop - medium (40 people), daily					
Hall Rental	Day	1	$300	$300	
M&E	Person-day	40	$20	$800	
Transport	Person-day	40	$20	$800	
Material	Per workshop	1	$650	$650	
Total				**$2,550**	
Multi-day workshop - medium (40 people), daily					
Hall Rental	Day	1	$300	$300	
Lodging	Person-day	40	$120	$4,800	
M&E	Person-day	40	$40	$1,600	
Transport	Per workshop	40	$30	$1,200	
Material	Per workshop	1	$500	$500	
Total				**$8,400**	
Total International STTA - Firm					
Fee	Per week	1	$15,000	$15,000	
Local STTA-Firm					
Fee	Per week	1	$4,200	$4,200	

Annexes

1. Consultations for NHSCS development

Phase	Mode of engagement	Consultations
Guidance and oversight	National SC Policy Sub-Committee (guided by TOR and minutes of 13 meetings documented so far); reported back twice to the National SC TWG	
Phase 1	Secondary data analysis	71 documents (Annex 3 of Phase 1 Diagnostic report), Inception Report, policy and guidance documents, technical reports
	Key informant interviews	29 Interviewees (Annex 1 of Phase 1 Diagnostic report - DPS, NMSA, District Pharmacists, DPPI, Programmes, Crown Agents, GHSC-PSM, PLM, UNFPA, UNICEF, WHO, AISPO)
	Focus groups	
	Consultative mini-workshop	27 participants (Annex 2 of Phase 1 Diagnostic report - DPS, NMSA, Programmes, District Pharmacists, District Logistics Officers, Crown Agents, UNFPA, GHSC-PSM, UNICEF)
Phase 2	Strategy Teams	65 members in four major teams – DPS, Other MoHS Directorates, NMSA, Programmes, Civil Society, Private Sector
	Field assessment	68 central & 73 district level key informants (DPS, NMSA, Health for All Coalition, UN agencies, Programmes, DPPI, IHPAU, MoHS-HR, City/District councils, Transporters, Customs clearing agents, PMI, Nursing, PHUs, Hospitals, DHMTs)
	National consultative workshop	60 participants: MoHS: Programmes, DPS, NMSA, DPHC, DPPI, NSBS, IHPAU, SiLeSHI, HR, Pharmacy Board, DHMTs, hospitals, partners, College of Medicine and Health Allied Services, Pharmaceutical Society

2. Draft accountability framework for key SC functions

The following assignment of responsibility was discussed and developed during strategy development consultations. It is expected that a detailed, formal, and final accountability framework will be developed as part of implementation of the governance strategy (Strategic Result #1).

Definition of accountability:

R = Responsible – organization/person who performs the work. A = Accountable – organization/person ultimately accountable for the work or decision being made. C = Consulted – organization/anyone who must be consulted with prior to a decision being made and/or the task being completed. I= Informed

	Matrix of accountability	DPS	NMSA	Programs	Districts	Others	Notes
Planning	1. Demand planning (forecasting and supply planning)	RA	C	C	C		
	2. Supply planning	A	R	C	C	C	
	3. Product resource mobilization	C	R	C	C	A	CMO office is accountable
	4. SC operations resource Mobilization	C	RA	C	C		
Procurement	5. Procurement	C	RA	C			
	6. Supplier management	C	RA	C			
	7. Contract management	I	RA				
	8. Customs clearance	I	RA				
	9. Product Receiving	C	RA				
	10. Supplier payment/ management	I	RA				
Distribution	11. Hospital order processing	C	RA	C	C		Other suggestion for district to be RA
	12. PHU order processing	C	C	C	RA		
	13. CHW order processing	C	C	C	RA		
	14. Facility inventory management*				RA		
	15. Delivery planning to facility		RA				
	16. Facility emergency order processing		RA				
	17. Product return management**		A		R	C	PBSL
Other	18. Product disposal	C	A	C	R	C	PBSL
	19. RMU	RA	C	C	C	C	
	20. Quality assurance	A	R	C	C		
	21. Donation	C	RA	C	C		
	22. HR	RA	C	C	C		
	23. Drug utilization data	RA	C	C	C		
	24. Inventory data	RA	C	C	C		
	25. Lab commodities	C	A	C	R		
	26. Blood products	C	A	C	R		
	27. Enforcement of STG	RA	C	C	C		

3. Existing governance mechanisms

The following is a draft list of existing, relevant governance mechanisms involved in the coordination and/or oversight of SC activities as identified by the National SC Strategy Development Team.

	Type of governance mechanism [3]		Chair/ co-Chair	Secretariat	Reports to
1	Health Sector Coordinating Committee (HSCC)		(Proposed for NHSCS governance and oversight)		
2	Health Sector Steering Group (HSSG)		(Proposed for NHSCS governance and oversight)		
3	Chief Medical Officer (CMO) Meeting		Chief/ Deputy Chief Medical Officer	CMO office	Minister
4	Health Sector Working Group				
5	National Essential Medicines Committee		CMO	Chief Pharmacist	Minister
6	National SC TWG		DPS	DPS	
	Subgroups	LMIS/M&E	DPS	CHAI & DPPI	National SC TWG
		Financing	Permanent Secretary	Crown Agents & DPS	
		Procurement/Supply logistics & strategy	NMSA	Crown Agents & NMSA	
		Policy	DPS	UNFPA	
7	National Quantification Committee (NQC)		CMO or Deputy CMO/ DPPI	DPS	National Essential Medicines Committee
	Programme Specific Quantification TWGs	HIV/AIDS	Programme Managers/ Senior Pharmacist (DPS)	Programme Pharmacist	National Quantification Committee (NQC)
		Malaria			
		TB / Leprosy			
		RH			
		NTD			
		CH/EPI			
		FHC/CR			
		Lab (proposed/ initiated)			
8	Procurement Committee		NMSA		
9	Programme Specific Supply Chain TWGs				
	FHC Operations Meeting		NMSA		
	RHCS Committee		Director of RCH	Programme Manager and UNFPA	
10	District Forecast and Distribution (DFD) TWGs		District Medical Officer	District Pharmacist	National Quantification Committee
11	Drug and Therapeutic Committees (DTCs)		Medical Superintendent	Hospital Pharmacist	DPS/RMU

3. The membership of the respective governance mechanisms may be subject to changes based on prevailing circumstances and as approved by the SC TWG.

4. Draft performance metrics

This annex contains two sets of metrics reviewed during the strategy consultation process: (1) metrics from the NHSS 2021–2025 draft document (MoHS, 2021 draft), excerpting measures pertinent to SC systems strengthening directly or indirectly; (2) metrics from a national SC performance management framework developed with support from UNICEF (UNICEF, 2020) – the framework was reviewed to highlight measures that potentially need to be incorporated into the national framework as a result of NHSCS strategic priorities.

Both sets are draft only and are expected to be reviewed and formalized during the development and implementation of the NHSCS Performance Management Plan. The sets of metrics are included here as illustrative and for future reference.

1. Matrix of accountability for draft NHSS indicator for products & SC

	Matrix of accountability	DPS	NMSA	Programs	Districts	Others	Notes
Direct Performance Measures	17. Access to a core set of relevant essential medicines [SDG 3.b.3] (percentage) (national, district level)	A	R	C	C		
	32. Percentage of health facilities with no stock outs of essential drugs and vaccines (disaggregated by type of facility)	A	R	C	C		A=RMU, Quantification body C=supply chain actors R=procurement entity
	39. Number of newly registered pharmaceutical products per year (national)	C	R		C	A	A=Regulatory body C=supply chain actors/ Governance R=procurement entity
	40. Percentage of targeted health facilities, establishments, services and products continuously compliant to licensing standards (national)	R	C		C	A	A=Regulatory body C=supply chain actors
	41. Percentage of health facilities submitting timely reports (national, district level)	A	C	C	R		A=responsible for LMIS, RMU C= supply chain actors R=procurement entity
Indirect Performance Measures	22. Antiretroviral therapy (ART) coverage among people living with HIV (percentage) (national, district level)	C	C	A	R		
	23. Intermittent preventive therapy for malaria during pregnancy (IPTp) 3+ doses (percentage) (national, district level)	C	C	A	R		
	24. Children receiving Penta-3 before 12 months of age (percentage) (national, district level)	C	C	A	R		

2. Draft National Performance Framework for SC, including feedback from NHSCS consultations

Metrics highlighted in blue and numbered as NHSCS were identified during NHSCS consultations, and relate to NHSCS strategic areas – these draft metrics are considered as gap in the national performance monitoring framework.

#	SC function	KPI	Type	DPS	NMSA	District
NHSCS	Cost	Maintenance cost: warehouse/ vehicles				
NHSCS	Distribution	% of health facilities whose (emergency) request was responded to				
NHSCS	Distribution	% of health facilities that received orders in full and on time				
NHSCS	Donations	% of drugs donated at central level				
NHSCS	Donations	# of donations in compliance with donation policy				
NHSCS	Forecasting	# of supply plan reviews per year				
NHSCS	Forecasting	# of supply plan revisions per year				
NHSCS	HR	# of trainings				
NHSCS	HR	Effective use of training budget (no duplication etc.)				
NHSCS	HR	Succession planning/ successful succession				
NHSCS	HR	Staff retention				
NHSCS	HR	Recruitment cost				
NHSCS	HR	Performance measures (staff)				
NHSCS	Lab/ Equipment	Medical equipment installed with training				
NHSCS	LMIS	Data accuracy				
NHSCS	Other	% of stock delivered from outside our system				
NHSCS	Overall	SC policies/ SOPs developed/ reviewed				
NHSCS	Procurement	% of purchased from pre-qualified suppliers				
NHSCS	Procurement	% of products procured per forecast list				
NHSCS	QA	# of SC issues reported by CSOs				
NHSCS	QA	# of SC issues addressed at NMSA, DPS, districts				
NHSCS	Reverse	# of incidence where need for reverse logistics identified, A. due to expiry; B. due to redistribution				
NHSCS	RMU	% of encounters with antibiotics prescribed				
NHSCS	RMU	% of encounters with infections prescribed				
NHSCS	RMU	% of antimalarials prescribed with prior testing				
NHSCS	RMU	% of patients receiving treatment per STGs				
NHSCS	Waste	Wastage due to poor handling				

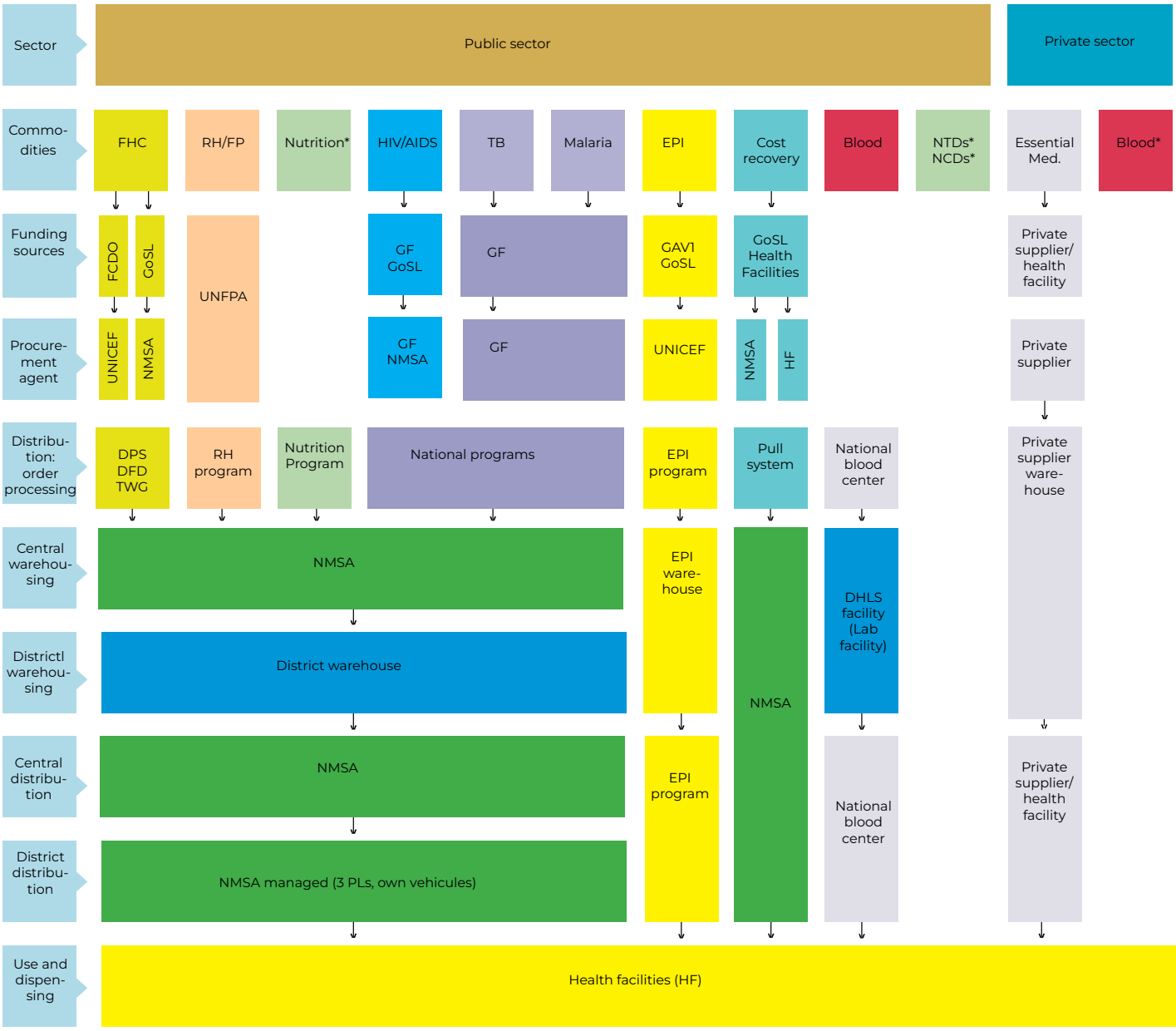
2. Draft National Performance Framework for SC, including feedback from NHSCS consultations (Continued)

#	SC function	KPI	Type	DPS	NMSA	District
1	Forecasting	% of commodities selected for procurement that are listed on the NEML	Quality	x		
2	Forecasting	Forecast accuracy (% diff. between forecasted consumption & actual consumption)	Quality	x		
3	Procurement	% of products that undergo quality testing	Quality	x	x	
4	Procurement	% of contracts issued as framework contracts	Quality		x	
5	Procurement	Adequate shelf life	Quality		x	x
6	Procurement	Order compliance - % of orders fulfilled meeting all criteria defined in purchase orders or contract	Quality			
7	Procurement	% of orders with products on back order	Quality			
8	Procurement	Lead time for contract / purchase order issue	Response Time		x	
9	Procurement	Lead time for contract award	Response Time		x	
10	Procurement	On-time delivery	Response Time		x	
11	Procurement	Supplier lead time variability	Response Time		x	
12	Procurement	Ratio of unit prices paid through an emergency procurement vs. competitive bidding (provisional)	Cost		x	
13	Procurement	Fixed order cost	Cost		x	
14	Procurement	Total supply cost	Cost		x	
15	Procurement	% of purchase orders / contracts issued as emergency orders	Productivity		x	x
16	Procurement	Supplier fill rate	Productivity		x	
17	WHing, storage	Inventory accuracy rate	Quality		x	x
18	WHing, storage	Put-away accuracy	Quality		x	x
19	WHing, storage	Defined security measures	Quality	x	x	x
20	WHing, storage	Warehouse ordering processing time (provisional)	Quality		x	x
21	WHing, storage	Customs clearance cycle	Response Time		x	
22	WHing, storage	Total warehouse / storeroom cost	Cost		x	
23	WHing, storage	Value of products damaged in a WH / storeroom	Cost		x	x
24	WHing, storage	Storage space utilization	Cost		x	x
25	WHing, storage	% of storage space dedicated for handling	Cost		x	x
26	Inventory management	Stockout rate	Quality	x	x	x

2. Draft National Performance Framework for SC, including feedback from NHSCS consultations (Continued)

#	SC function	KPI	Type	DPS	NMSA	District
27	Inventory management	Inventory accuracy rate	Quality		x	x
28	Inventory management	Adequate shelf life	Quality		x	x
29	Inventory management	Stock wastage due to expiry or damage	Quality		x	x
30	Inventory management	Stocked according to plan (provisional)	Quality		x	x
31	Inventory management	Order fill rate (provisional)	Quality		x	x
32	Inventory management	Inventory holding cost	Cost		x	x
33	Inventory management	Value of unusable stock	Cost		x	x
34	Inventory management	Value of unaccounted (missing) stock	Cost		x	x
38	Inventory management	Inventory turnover rate	Productivity		x	
39	LMIS	Facility reporting rates	Productivity	x	x	x
40	LMIS	% of orders placed via electronic ordering (provisional)	Productivity	x	x	x
41	LMIS	Order entry accuracy (provisional)	Quality		x	x
42	LMIS	Order entry time (provisional)	Response time		x	x
43	LMIS	Order lead time (provisional)	Response time		x	x
44	Distribution	On-time arrivals - % of shipments arriving within agreed time window	Quality		x	x
45	Distribution	% of shipments where quantity dispatched equals quantity received	Quality		x	x
46	Distribution	% of shipments arriving in good condition	Quality		x	x
47	Distribution	Average vehicle loading / unloading time	Response time			x
48	Distribution	Vehicle turnaround time	Response time			x
49	Distribution	Total transportation cost	Cost		x	
50	Distribution	Average transportation cost per kilometre / volume	Cost		x	
51	Distribution	Ratio of transportation cost to value of product	Cost		x	
52	Distribution	Vehicle use availability	Productivity		x	x
53	Distribution	Container capacity utilization	Productivity		x	x
54	Distribution	Average number of stops per route	Productivity		x	x
55	RL	Reverse logistics for use of usable health commodities	Productivity		x	x
56	RMU	Ave. no. of medicines prescribed per encounter	Quality	x		
57	RMU	% of medicines prescribed by generic name	Quality	x		
58	RMU	% of medicines prescribed from EML	Quality	x		

5. Current state – procurement and SC



6. Community engagement in SC

The role of the community and CSOs is a core pillar of the Sierra Leone health sector strategy and the focus of strategic consideration for the NHSCS. Under the representation and leadership of the Health for All Coalition (HFAC) in national SC sub-committees as well as in strategic teams during the NHSCS development process, an in-depth review of the prospective role that the community can and should play in the next five years was completed and is summarized below.

Current opportunities and role of community and CSOs

Opportunities already exist to leverage CSOs in the SC system:

1. CSOs already have experience in SC at the national, district and chiefdom level, with good working relationships at the national and district level.
2. Community platforms exist for SC monitoring and participation in SC (e.g., village development committees (VDCs) and family management committees (FMCs). Such platforms are already supported by health sector interventions (e.g., with USAID support).

The current objectives of CSO engagement in the health SC have been to:

1. Improve accountability and transparency in the SC management
2. Promote community participation and ownership
3. Build community trust in the SC
4. Identify and report leakages during the distribution of medicines by ensuring medicines are safely delivered and stored in health facilities and are properly recorded in facility records.

Examples of HFAC and CSO activities have included:

1. Training of district and chiefdom CSO focal person in drug SC monitoring
2. Training of community structures (VDC and FMC) in SC monitoring
3. Observing the delivery process at the following stages:

    - loading of the delivery trucks at NMSA central stores
    - receipt of FHC commodities at district medical stores (DMS), PHUs and hospitals
    - At most 14 days after the completion of the first mile deliveries at the DMS
    - At most seven days after the delivery of stock at facilities (PHUs and hospitals).

4. Feedback at district and national levels

5. Building strong partnership with MoHS.

Overall, activities have contributed to active community participation, particularly in observing the receipt and monitoring of FHC drugs at all levels and establishing real-time mechanisms for feedback to address SC issues reported during the FHC distribution at district and national levels. Anecdotally, reductions have been reported in leakages and discrepancy during distribution. A second layer of verification has been adopted as a result of feedback from the community and community awareness and ownership in the SC is gradually gaining momentum.

Critical issues and strategic considerations in NHSCS

The following issues currently challenge the role that CSOs play in the SC:

1. Resistance at some PHUs on the involvement of the CSOs
2. Inadequate or inconsistent support for community participation and monitoring in the SC
3. Perception of (lack of) independence of CSOs from political leadership influence.

In support of the strategic results targeted by the NHSCS, the following strategic considerations will drive the engagement of CSOs over the next five years:

1. Definition and dissemination of policy to formalize the roles of the CSOs in the SC at all levels
2. Definition of the CSOs' role in RMU and strategic objectives/interventions in Strategic Result #2. Do CSO's have accountability, and if so, to whom?
3. Support for implementation of the policy at district level and with DHMTs
4. Integration of CSO SC role/responsibilities in existing package of support for community and CSO engagement
5. Definition and formalization of the role and modalities of CSOs in national SC performance monitoring/ management systems, including SC audits (under Strategic Result #1)
6. Inclusion of CSOs in SC system design and implementation, including strategic approach to roll out training (or training of trainers) on standardized SC tools and processes at district/ PHU levels.

7. Key HR roles in the integrated SC

The following is an illustrative draft list of key roles envisioned for the successful implementation of the NHSCS over the next five years. Listed roles are not intended to indicate staffing levels or full-time positions, but rather give an indication of the types of skills and roles required in the SC system.

More rigorous assessments are still needed and recommended to determine the projected skill needs and the potential strategies to develop these skills in existing or new health professional cadres. This will be done in coordination with interventions under Strategic Result #4.

Central level	
DPS	NMSA
• Quantification Officer /Manager • Policy and Planning Management Officer • Rational Medicines Use Officer and Manager • Quality Assurance Officer • LMIS Officer/Manager • ICT Officer/Manager • M&E Officer & Manager • HR Manager & Officer	• Operations Manager • Logistics Manager (Central Logistics Officers) • Fleet Manager, drivers + mates • Warehouse Manager, Storekeepers, RBOs, DO, store hands • LMIS Manager, Officer • Procurement Manager, Senior Officer, Officer • HR – Manager, Officer • Quality Assurance – Manager, Officer • ICT Officer, technicians • Business Development & Investment Manager, Officer • Public relations, Customer Service/ Relationship Manager, Officer • Cold Chain Technician • Internal Audit –Manager, Officer • Finance & Admin – Manager, Accountant
District level	
• SC Manager (District Pharmacist) • District Logistics Officer • District Information Officer Supply Chain • Storekeeper, Store Clerk, Store Hands • M&E/ Data Use Officer	
Facility level	
PHU	**Hospital**
Data Clerk Pharmacy Technician (CHC, for RMU)	• Inventory Management Officer • LMIS Data Officer & Clerk • Pharmacist – RMU, quality assurance • Pharmacy Technician – rationale dispensing

8. PPP for NHSCS

Sierra Leone has targeted PPP as a key approach to attaining UHC goals and improving quality service delivery, particularly in increasing effective resource management for cost recovery/ non-FHC products. One primary example of this PPP approach is the model of service delivery at University of Sierra Leone Teaching Hospital Complex Connaugh (GoSL's central referral hospital) intended to regulate the cost of medicines to cost recovery rates while ensuring the quality and safety of medicines and supplies. The model selects a private service provider whose service agreement with the Cost Recovery Contract Management Team of the MoHS involves a Lease, Manage and Operate model in the medium to long term. The model is expected to inject quality and efficiency into the delivery of pharmacy services, with additional target improvements in the hospital pharmacy's inventory management and provision of high-quality clinical pharmacy services.

This annex summarized the NHSCS development process' review of the opportunities, challenge, and strategic considerations for PPP in pharmaceutical SC.

Challenges and opportunities

Figure 5: Challenges and opportunities for PPP in SL

Challenges	Opportunities
Limited understanding of the PPP model in Cost Recovery Operations – including at MoHS leadership level and at facility level	MoHS leadership needs in-depth knowledge of PPP as it is an opportunity to achieve UHC in other service delivery points
Limited finance to supply commodities or stock to the Private Partner	NMSA with adequate finance to supply the private partner will avoid the issues of types of drugs in stock and thus will enhance financial sustainability for the entity. Private partner was given flexibility to procure outside if necessary, reducing stockouts.
Existence of unauthorized/unlicensed medicines market within the facility	Mitigating this will enhance the partner's confidence and thus increase turnover and revenue for potential profit-sharing/revolving fund.
Limited technical knowledge in the Management of Contract	Legal and technical officers involved in the process could improve the effective delivery of the contract and lessons learnt will be used in other projects.
Weak ownership of the process	Effective MoHS leadership will enhance adequate control of the process as we roll out to the regions.

Source: National SC Consultative Workshop, June 2021 (presentation by Cyrus Sheriff, MoHS PPP

Strategic considerations for PPP in NHSCS

The following will be considered when defining the role of PPP in improving access to pharmaceuticals and SC:

1. Top strategic leadership by DPS and NMSA, supporting creation of a Partnership Desk under DPS and MoHS for PPP activities
2. Strengthened NMSA management and ownership of the procurement process, supply, or sale of commodities to the private partner – considering options identified in Strategic Result #3
3. Strengthened NMSA Contract Management and Enforcement Capacity/Committee with a clear and objective terms of reference, including legal retainer, especially rolling out to the regions
4. Evaluation of PPP models to ensure they enhance patient-centred care, and integrate with clinical and pharmaceutical care – this will also increase acceptance of the model in service delivery points
5. Addressing access to generic versus brand products, and related price monitoring to ensure compliance with EMLs and affordability
6. Ensuring transparency in government procurement – e.g., clarify role of Anti-Corruption Committee
7. Quality assurance if private provider procures own products
8. DPS and NMSA monitoring and mitigation of issues of parallel drug peddling and compliance within the facility
9. Creation of the enabling environment and incentive for private sector to operate and harness the strengths that private sector offers (e.g., addressing taxation on pharmaceutical products).

9. SC for blood and laboratory commodities

Assuring the availability of safe blood for transfusion in all hospitals is one of the expected results of the National Health Policy assigned to the medicines and SC pillar of the health system. Hence, the SC for blood and laboratory commodities was the target of strategic consultations during Phases 1 and 2 of the national SC strategy development process. Findings on the opportunities, challenges and strategic considerations related to the SC for blood and laboratory commodities are summarized in this annex.

Strengths and challenges

Figure 6 highlights the value chain for blood, blood supplies and laboratory supplies from the collection of blood to the processing, testing, storing, distribution and transfusing of blood at points of care. Important interventions have been completed to enable a cost-effective and reliable SC to date, including:

- Inclusion of the National Safe Blood Services (NSBS) Reagent and Screening kits into the FHC procurement system
- Inclusion of the NSBS, under the Directorate of Hospital and Laboratory Services (DHLS), in the national mechanism for quantification and specification
- Enabling of a central procurement system, though NMSA, to support Quality Standards
- Elaboration and first release of the 2020 standard technical catalogue for lab and blood supplies
- First release of protocols/standards for laboratory techniques, developed with support from the Italian NGO AISPO; protocols to be used for quality assurance and quality management control, estimating of supplies needs, elaborating procurement budgets, and monitoring and controlling of consumption

Figure 6: Value chain of blood supply

Source: National SC Consultative Workshop, June 2021 (presentation by National Safe Blood Services).

Meanwhile, important challenges face the blood SC – as summarized in Figure 7.

Figure 7: Challenges facing blood SC

Recruitment	Blood collection
• Inadequate donor registration procedure (traceability) • Lack of effective tools for data collection and analysis • Lack of functional Donor Recruitment & Retention Unit • Staffing • Inappropriate and inadequate transportation system for community mobilization & blood drives • Very few voluntary donors (10% of the total donation) • Lack of blood donor motivations (donor souvenir) • IEC Materials on blood donation • Societal interface still weak	• Irregular supplies of consumables (blood bags) and other vital supplies • Inadequate cold chain system • Inappropriate transportation system for community Blood Drives • Inadequate equipment and materials • Ineffective Community Blood Drives • Staffing (Nurse Phlebotomist) • Inadequate donor registration procedure (traceability) • Irregular voluntary blood donor 90% replacement donation • Societal interface still weak • No support for pre and post donation comforts
Processing & testing	**Inventory & distribution**
• Regular stockout of supplies (screening kits, reagents and consumables) • Still using a manual system • Lack of adequate equipment for blood processing • Shortage of technical staff • Operational Quality Manual • Inconsistent practices – no harmonization, no essential uniformity • Inadequate workspace to support proper and standard workflow	• Lack of standard data management tool • Lack of effective tool to monitor supplies to the districts • Lack of effective mobility and cold chain system for distribution of blood and blood products to hospitals • Lack of appropriate equipment to monitor effective inventory and distribution • Lack of effective M&E units • Irregular supportive supervision
Transfusion	
• Operational catalogue of technical and non-technical items (piloted) • Operational Daily Consumption Register (piloted) • Piloted registers (donor register, patient register, laboratory registers, sample reception register) • Guideline on the appropriate and rational use of blood and blood products • Draft quality manual and SOPs • National Blood Transfusion Policy	

Source: National SC Consultative Workshop, June 2021 (presentation by National Safe Blood Services)

Strategic considerations for blood and lab SCs

Given the characteristics of the blood value chain, both cross-cutting and specialized approaches will need to be defined and applied to ensure availability of blood supplies. Blood and lab commodities will be integrated in the strategic approaches in all Strategic Results of the NHSCS. These approaches will depend on coordinated planning and interventions with the NSBS, DHMTs and financial and technical donors.

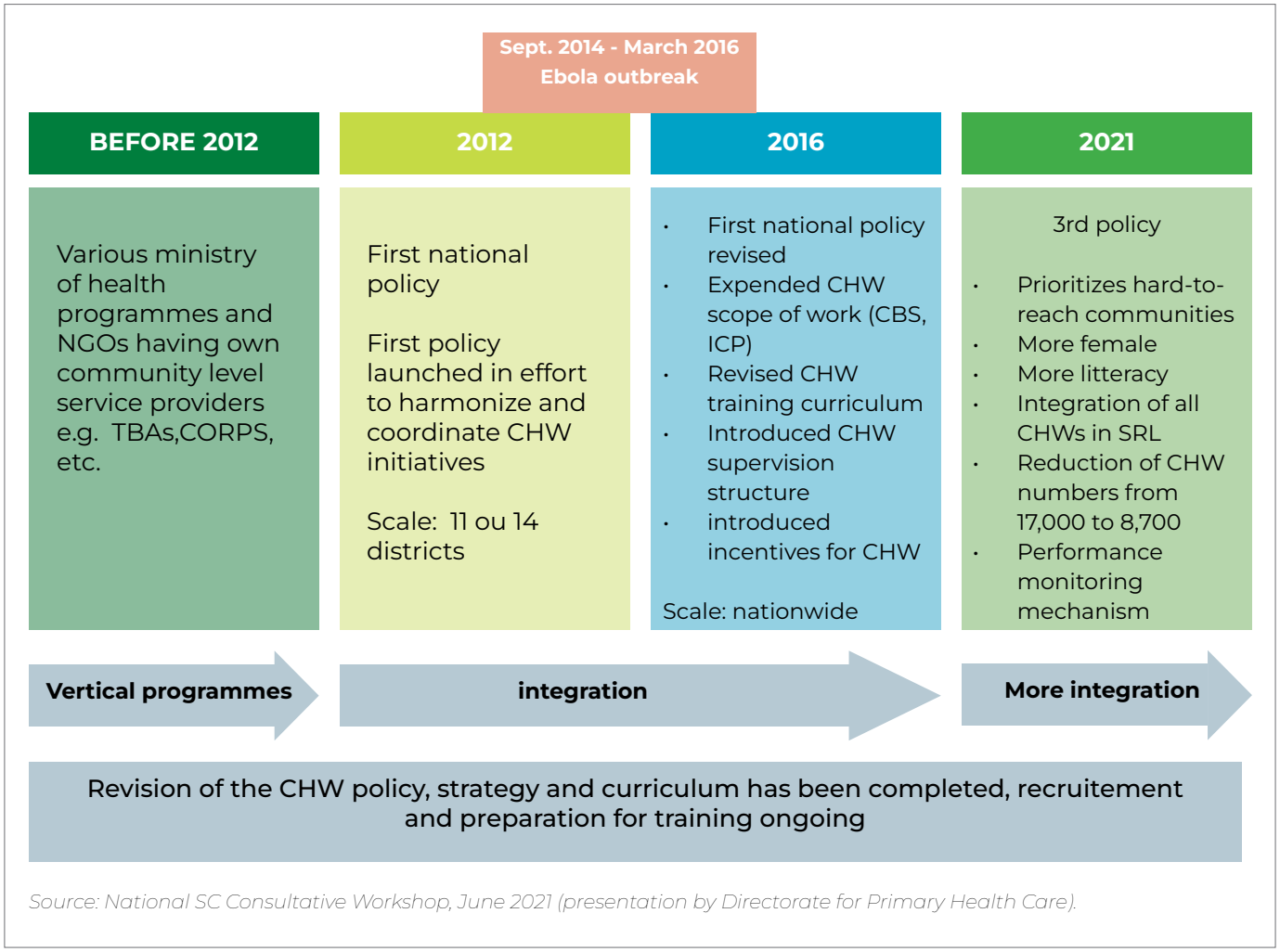
The following will be considered to improve blood SC and safe/ rational blood use:

1. Blood and lab SC design to support national value chain, with phased implementation strategy
2. SC SOPs, clarifying and empowering roles and responsibilities within SC community
3. Road map for blood and lab supplies LMIS (consumption and patient registration data)
4. Integrated cold chain strategy, leveraging existing capacity (e.g., for EPI)
5. SOPs: clarification of R&R within SC community
6. Advocacy and accompanying policy for integration of blood supplies into hospital plans/budget – leverage experience of TB programme in the early years
7. Integrated capacity development strategy, for relevant lab and SC staff
8. Private sector engagement strategy – considering findings from recent World Bank assessment of private sector (report not disseminated at time of this document), and in close coordination with NMSA
9. CHW engagement – in recruitment drives, safe blood.

10. Linking CHWs in the national SC

While CHWs are an integral part of the last mile (i.e., within PHU catchment area) reaching patients and clients where they are, systems to link this level to national SCs have not adequately been visible or systematically defined. Part of the reason for this has been the vertical approach to developing and strengthening the CHW programme, and the evolution of the programme itself. Figure 8 is a summary of key changes past and present in the programme.

Figure 8: Background of national CHW programme



Source: National SC Consultative Workshop, June 2021 (presentation by Directorate for Primary Health Care).

In addition, several challenges related to CHW resupply have prevailed, including the following routinely identified during CHW programme supervisions (presented during the NHSCS Consultative Workshop, June 2021):

- Lack of adequate stocks at PHU: This is attributed to problems in quantification to distribution as well as irrational use of medicines at PHU level.
    - o E.g., ORS given to any weak, febrile person; amoxicillin 250mg Dt. to children who do not need it (43 per cent according to the SRL national IMNCI survey in 2019); amoxicillin Dt. 250 mg (paediatric) to adults (pregnant, lactating women)
    - o Wide reporting of insufficient/irregular supply of ACT
- Reluctance of PHU in charge to provide CHW with supplies even when stock is available due to a fear of stockout; CHWs seen as rivals to PHU workers.
- Lack of safe or adequate storage at CHW level.

Meanwhile, valuable interventions have been introduced and work to improve SC management at this level, including the following identified during the strategy development process:

- Including SC topic during supportive supervision and refresher training of PHU In charges
- Prepacking of CHW commodities at district store level – started in some districts
- Revision of CHW policy to provide commodities to hard-to-reach areas
- New CHW policy to monitor individual CHW performance linked to DHIS2 (based on CHW reporting)
- CHW medicine register/reporting to monitor RMU by CHWs included in the curriculum
- Supportive supervision and mentoring of CHWs by DHMTs and PHU in-charge to ensure correct use and management of drugs
- CHW use of electronic platform to track products and supply consumption.

Building on these strengths, the following strategic considerations will be incorporated in interventions to integrate this level in the national SC and improve product availability:

- **Formalizing the design of CHW resupply in national SC systems, in conjunction with Strategic Result # 4 interventions:** The SC design will consider the revised CHW policy to rationalize and limit CHW resupply to hard-to-reach areas, while incorporating lessons learned/strengths from pre-packing of CHW commodities (at district level). The approach will leverage CHW commodity reporting into DHIS2. Formal SOPs will form the basis of supportive supervision and health system strengthening interventions.
- **Capitalize on CHW-focused programming to strengthen CHW role in rational use and management of commodities:**
    - o Strengthen supportive supervision to CHWs
    - o Empowering PHU staff on all CHWs programme activities per the revised policy (recruitment, training, supervision, and performance monitoring).
- **Integrating CHW resupply needs in national supply quantification, procurement to factor CHWs' needs:** Adequate consideration will be made and adjusted over time for the planned CHW SC design and of RMU at PHU/CHW level.

11. SC under emergency

Resilience – the ability of an SC to resist or even avoid the impact of a disruption and to quickly recover from it – is a core function that needs to be designed into all SCs, and one that has merited essential attention during the global COVID pandemic at the time of this strategy's development. Anecdotally, Sierra Leone's health and SC's robust response to the challenges imposed by COVID has been credited to its experience and systems tested and put in place following prior health and natural emergencies.

Systems for effective emergency response necessarily involve multiple organizations within and outside the health sector and as such merit a targeted strategic and tactical approach. Hence, this document does not aim to define this approach, rather, defers to initiatives already underway and evolving to strengthen emergency SC systems.

Meanwhile, the following situational analysis was summarized during the NHSCS development process:

Strengths/opportunities for emergency SC	Bottlenecks/threats for emergency SC
• The Emergency SC (ESC) Playbook, initially developed in 2019 with support from Global Health Supply Chain – Procurement and Supply Management (GHSC-PSM) project under the Global Health Security Agenda (GHSA), is a comprehensive guide to the organization of SC activities across multiple sectors, including Department of Health Security and Emergencies (DHSE) • Playbook comes with Facilitator and User guides and includes built-in templates and guides, ranging from financing, stakeholder maps, warehousing and transport options (including outsourcing), scenarios for centralized versus decentralized stockpiling of products and trainings, among others. • Playbook was recently used to prepare COVID response simulation and has, anecdotally, significantly improved coordination between DHSE and DPS/ NMSA and enabled arrangement of warehouse options.	• The ownership of the ESC Playbook and its activation during emergencies is still an area to be institutionalized. Currently DPS and DHSE are custodians; the expectation is NMSA will also institutionalize the necessary roles for activating SC response in health emergencies. Role also includes ensuring the Playbook is kept regularly up to date to make it useful at any time (e.g., the procurement information is currently not update for COVID as information needs to be compiled from IPs who are doing most of the procurement of PPE and response supplies). • The Playbook is intended to be available on MOH website and accessed by districts, but was not available at the time of this document.

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