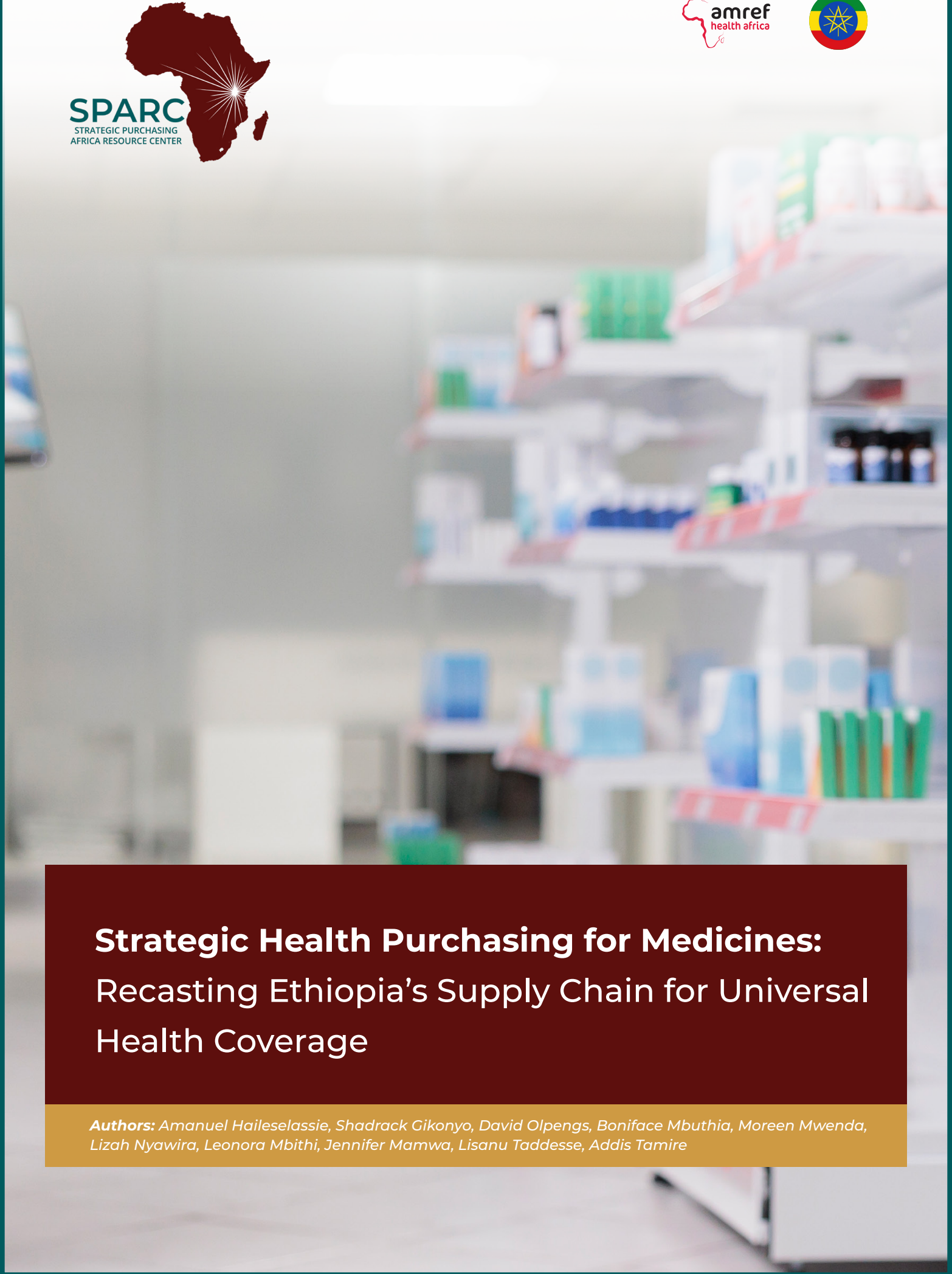

Strategic Health Purchasing for Medicines: Recasting Ethiopia's Supply Chain for Universal Health Coverage

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Executive summary

Ethiopia has pursued supply chain reforms for over eight decades to improve access to essential medicines. While Strategic Health Purchasing (SHP) interaction with health systems and provider performance is well-documented, its specific application to the availability of essential medicines and supplies, particularly within Central Medical Stores (CMS), remains under-explored. However, evidence reveals persistent systemic gaps: fragmented governance, unsustainable financing with high facility debts, inconsistent updates to the essential medicines list, limited provider autonomy and weak links between payments and health systems performance.

Implications: These systemic weaknesses undermine progress towards Universal Health Coverage (UHC) goals. To address them, the Ethiopian Pharmaceutical Supplies Services (EPSS) must deliberately apply Strategic Health Purchasing (SHP) principles, prioritizing the integrating of information systems, financial discipline, refined governance and performance linked provider payments.

Introduction

Low- and Middle-Income Countries (LMICs) are pursuing supply chain reforms to ensure essential medicines and supplies are universally available. There is a growing consensus that this process interacts with the main health financing functions (revenue raising, pooling and purchasing). Strategic Health Purchasing (SHP) introduces deliberate decisions on what to buy, from whom, and how, to strengthen effectiveness of resource use for health (1-4). These decisions are implemented on a foundation of governance arrangements, policy and legal frameworks, and purchasing functions (health benefit specification, provider contracting, provider payment mechanisms and performance monitoring arrangements) (5-7).

Many LMICs, particularly in Africa, have established Central Medical Stores (CMS) to coordinate their supply chains, with a range of models from national autonomous agencies to decentralized entities (8-12). The Ethiopian Pharmaceutical Supplies Services (EPSS), mandated to manage the national pharmaceutical supply chain, ensures the consistent availability of medicines and supplies at all public health facilities in Ethiopia (13-15). EPSS is mandated as the main 'purchaser' of essential supplies and medicines, and the evolution of this role in the past eight decades can be analyzed through the lens of SHP. Although the CMS including EPSS have been assessed through multiple criteria, assessments have not included the use of the SHP progress tracking framework. While SHP's interaction with health services and provider performance is well-documented, its specific application to the availability of essential medicines and supplies, particularly within CMS, remains under-explored.

Supply chain reforms cannot be treated as purely logistics exercise, rather they interplay greatly with financing and governance. EPSS through strategic purchasing has the potential to evolve from a transactional distributor of medicines and supplies to a strategic purchaser, aligning procurement decisions to the broader health systems goals under UHC.

Our paper seeks to fill this gap by applying the SHP progress framework to the EPSS, a centralized purchaser of essential medicines in Ethiopia. We will analyze how the EPSS has evolved and the challenges it faces in its role, providing a novel perspective on its strategic function within Ethiopia's health system. This paper draws on evidence generated to highlight key issues at the nexus between pharmaceutical supply chain, health financing and health systems as well as discuss challenges and potential remedies.

Ethiopia Country Context

Ethiopia is located at the Horn of Africa with Sudan and South Sudan on the west, Eritrea and Djibouti on the northeast, Somalia on the East and Southeast and Kenya on the South. The country lies on an area of 1.1 million km² characterized by rich geographical diversity. It is one of the most populous countries in Africa and is home to more than 80 different languages. It has a rapidly growing urban population, estimated at 2.6% with an average household size of 4.6. By 2030, the population is estimated to reach 122.3 million people. Ethiopia is a low-income country with a gross domestic product (GDP) per capita (current US$) of 772 in 2018 and is one of the fastest growing economies at 10% per annum between 2004 and 2014. Despite this, it remains one of the poorest countries in the world (16).

Humanitarian pressures are acute: millions displaced, widespread food insecurity, and over nine million children out of school. These shocks directly burden the health system, increasing demand for emergency nutrition, maternal care, and infectious disease control. The **Ten Year Development Plan (2021–2030)** envisions prosperity and industrialization, but health system strengthening remains a prerequisite

Implications: Rapid population growth and urbanization that intensifies demand for medicines and supplies. EPSS must develop systems that help to anticipate demographic pressures by scaling forecasting capacity, financing arrangements hence support the government's effort to reduce health systems inequalities.

The health systems context in Ethiopia

The Ethiopian health system is decentralized and structured into a three-tier system comprising National, Regional, and Woreda levels. The tiered governance system includes Federal Ministry of Health (FMoH), mandated with health policy, oversight of the government agencies in the health sector including EPSS, 12 Regional Health Bureaus (RHB) and 2 city administrations that are mandated with the implementation of health policy at secondary hospitals, and more than 1,067 Woreda's (Districts) that are mandated with implementation of health policy at the primary health care (PHC) level (16).

Table 1: The Tiered Health System in Ethiopia

Primary level health care		**Secondary**	**Tertiary**
Urban	**Rural**		
Health Centers (40,000 people)	Health Centres (15,000-25,000) District Level (Woreda)	General Hospitals (1-1.15 million people)	Specialized teaching and referral hospitals (3.5-5.0 million people)
District Level (Woreda)	Health Posts Local level (Kebele)	Regional level	
Primary Health Care Units (PHCUs) - a total of 17,550 health posts and 3,735 health centers		Total of 353 (primary, general and specialist) hospitals	

Source: Authors analysis and HSTP II (2019)

The health facilities have four major sources of income including government budget allocations, user fees, external resources, and Community Based Health Insurance (CBHI) reimbursements. In a financial year, facilities submit budgets to the national and sub-national treasuries with approval from the facility management and governance boards. Requests from facilities are consolidated at the Woreda (for primary health facilities) and RHB levels (for regional hospitals) for approval.

Interpretation: Fragmented accountability weakens supply chains - With responsibilities spread across national, regional, and woreda levels, coordination gaps can delay procurement and distribution, increasing the risk of medicine stockouts. Uneven resource allocation drives inequity – Regional and woreda financing capacity varies widely, leading to disparities in medicine availability between urban and rural facilities. Policy–practice disconnect undermines resilience – While the Federal Government defines national standards, limited autonomy and capacity at lower levels often hinder effective execution, weakening the reliability of essential medicine supply.

Ethiopian health financing context

Ethiopia has a mixed health financing arrangement comprised of both internal and external, pooled and non-pooled sources. Out of pocket (OOP) contributes 33, government transfers 26.5.%, external aid 25.32%, voluntary health insurance 2% , and others 3-4% of the total health expenditure (THE) respectively.

The government has further classified these sources as;

- **Channel 1:** Domestic funding (drawn from tax and other revenues, including budget (government and donors) support through treasury- (this includes grants allocated through the appropriation Act of the federal budget and those earmarked for specific budget lines. These transactions are recorded on the integrated Budget and Expenditures (IBEX) system) (17).
- **Channel 2:** Funds originate from development partners and are managed by the FMoH. Channel 2 (a) resources are planned for and executed in program-based budgets and are recorded as external resources under the federal capital budget. These funds are also passed on through the Sustainable Development Goals (SDG) Fund, a pooled funding mechanism under the joint financing agreement bringing together more than 11 partners. These funds are executed at FMoH with goods and services transferred in-kind and in-cash to regional and Woreda levels of government. Channel 2 (b) resources are partially planned and executed under the program-based budgets and are recorded as external resources under the federal capital budget and recorded in the Integrated Financial Management Systems (IFMIS).
- **Channel 3:** External funding programs and projects to non-governmental organizations; these funds are not recorded in the federal capital budget but can be tracked through an annual resource tracking exercise as part of the strategic health plan for the health sector (18-19).

The link between health financing and availability of medicine in Ethiopia remains weak characterized by multiple challenges. These include supply chain inefficiencies, high costs, and inadequate healthcare infrastructure, which continue to hinder access to essential medicines for the population (20-21).

Evidence indicates that EPSS faces multiple challenges that significantly hinder its capacity to deliver essential medicines and supplies to Ethiopians. These include inaccurate forecasting practices, long-lead times of more than 137 –294 days, poor quality of data affecting informed decision making, weak communication between EPSS and health facilities affecting coordination, lack of a robust information system to track and strengthen effective management of supplies, inadequate financial resources affecting its ability to meet all the requirements and high incidence of stock-outs limiting access at the health facilities (21).

Implications: High reliance on un-pooled financing arrangements exposes families to catastrophic costs and undermines equity. A clear strategy for sustainable pooled financing is essential to help reduce dependency on the volatile external funding.

Tracking the journey of the EPSS in Ethiopia

Since 1947, the government of Ethiopia has been running the EPSS which has benefited from multiple reforms to make available essential medicines and supplies to both public and private health facilities. Supplies are procured from EPSS by health facilities on a commercial basis through a variety of financing arrangements that include own-source revenue [user fees obtained from households, Ethiopia Health Insurance Agency (EHIA) that manages the Community-Based Health Insurance (CBHI)]; direct allocations from the Federal Ministry of Finance (FMoF) through FMoH and RHBs, and donor funding. It is estimated that total procurement under EPSS is close to $ 500m (ETB 14.2 billion) which comprises 55% coming from domestic resources, while 45% from external funding (22).

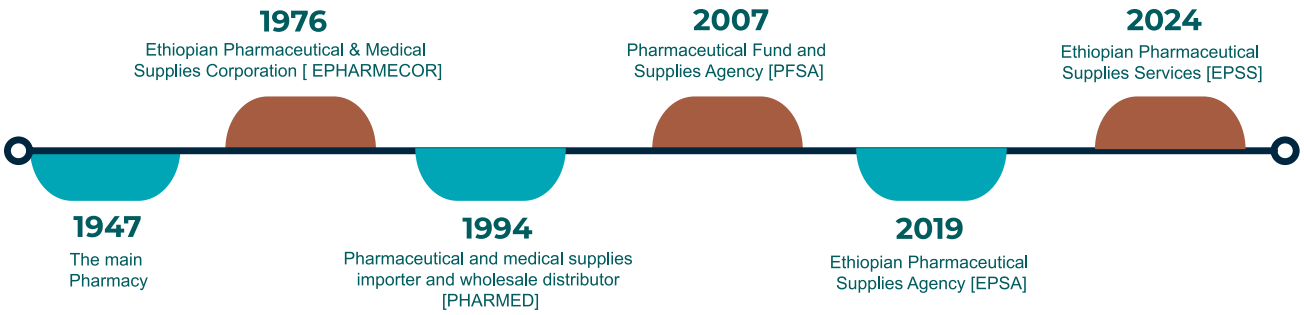

Figure 1: Tracing the Over 80 years of reforms and experience in EPSS

Source: analysis from various EPSS and FMoH documents by the authors

Implications: Eight decades of reforms demonstrate resilience but also reveal gaps in systemic integration, EPSS still faces inefficiencies in forecasting, debt from health facilities and long procurement lead times. While the 2024 proclamation granting autonomy is a turning point; its success depends on embedding financial discipline and governance expertise into EPSS operations.

Methodology

Analytical Framework

This study used the Strategic Health Purchasing Progress Tracking Framework created by the Strategic Purchasing Africa Resource Centre (SPARC) to guide data collection and analysis. The process included compilation of descriptive information that was adapted and aligned to the essential medicines and supplies on 1) purchasing functions (essential medical list in place of benefit specification, provider payment mechanisms, provider contracting arrangements and their execution in the scheme on essential medicines and supplies), 2) external factors and governance arrangements and how they are linked to strategic purchasing. Applying the SHP progress tracking framework to CMS is novel and sets a precedent that can be leveraged on to position Ethiopia as a continental learning hub through actionable reforms. For this study, the Strategic Health Purchasing Progress Tracking was reviewed and adapted to the context of a central medical store as per Figure 2 below.

Strategic Health Purchasing Progress Tracking Framework for Central Medical Stores

Governance arrangements: mandate and purchasing objectives, decision making, roles, rules and processes; oversight and accountability; stakeholder participation; autonomy (purchaser and providers); budget constraints and financial management	External factors: Legal & policy framework; public financial management rules; share of population covered; share of total health expenditure to CMS; capacity of providers and other agencies
Core purchasing functions	Purchasers have leverage to directly influence

Purchasing functions	Details		
Essential Medical List	Specifying essential medicines list; how they are accessed; any cost sharing policies and service delivery standards	• Resource allocation • Incentives • Accountability	This can lead to progress on immediate objectives for Universal Health Coverage (UHC) • Equity in resource allocation • Efficiency • Transparency And achievement of long-term UHC goals • Utilization relative to need • Financial protection and equity in financing • Quality
Contracting of providers	Types of provider contracting arrangements (formal/informal; automatic/selective); terms and conditions and mechanisms of enforcing contracts		
Provider payment methods (PPMs)	Selecting, designing and implementation of provider payment systems and setting of payment rates and tariffs		
Performance management	How the purchaser accesses provider performance, frequency, systems, reporting on utilisation, quality, OOP, and how this information influences purchasing decisions		

Figure 2:Modified SHP progress tracking framework to address supply chain arrangements context by the authors

Data Collection

We populated the framework's Microsoft Excel-based data collection tool with data initially collected from June to December 2024 (this data was continuously updated as necessary). Data was collected primarily through reviews of policy documents, decrees and directives, National Health Accounts (NHA), MoH Reports, MoH and EPSS websites that had information activity reports and/or websites of units in charge of managing and/or implementing the policies under study, newspapers, and scientific literature. Gaps in the document review were supplemented by interviews with key informants from MoH, EPSS, and Amref Health Africa Ethiopia.

Data Analysis

We applied 11 normative benchmarks to assess the governance arrangements and purchasing functions and capabilities in the EPSS for the study. The benchmarks are listed in table 1 below.

Table 2: Purchasing functions and corresponding benchmarks.

Key thematic areas on SHP	Benchmarks
Governance arrangements & policy frameworks	• Purchasing functions have an institutional home that has a clear mandate and allocation of functions • Providers have autonomy in managerial and financial decision making and are held accountable
Financial Management	• Purchasing arrangements incorporates mechanisms to ensure budgetary control
Benefit specifications	• An essential medical list and pharmaceutical supplies list is specified and aligned to purchasing arrangements • The purchasing agency further defines EML and PSL standards when contracting providers
Contracting arrangements	• Contracts are in place and used to achieve objectives • Selective contracting specifies quality standards
Provider payment mechanisms	• Provider payment systems linked to the broader health systems goals • Payment rates are based on a combination of cost information, available resources, policy priorities and negotiations
Performance monitoring arrangements	• Monitoring information is generated and used at the provider level • Information and analysis are used for system-level monitoring and purchasing decisions

Source: SPARC

Findings

Governance Arrangements

Institutional Responsibilities and Capacity

For over 80 years, the Federal Government of Ethiopia has been implementing progressive but critical reforms to strengthen the governance and institutional arrangements on the EPSS to strengthen its mandate to deliver essential medicines and supplies across the country. However, fragmentation, overlapping mandates, and limitations in capacity remain for example

EPSS as public agency has a board of seven that comprise senior corporate executives drawn from key public institutions to include National Bank Governor (Chairman). This, however, may limit the efficiency of EPSS due to conflicts on meeting times and lack of deep sectoral expertise as the executives have a demanding schedule from managing other institutions. They may lack opportunities to dedicate sufficient time to address supply chain-related challenges. They may also lack deep specialized knowledge on pharmaceutical procurement, logistics and public health needs, and hence this limits the ability to make decisions specific to drug supplies. In addition, while the policy intention of appointing corporate executives is aimed at bringing broader oversight it may also expose EPSS to political economic factors that may not always be consistent to public health outcomes and availability of medicines and supplies. This, however, also brings additional opportunities to include the board that could effectively advocate for EPSS needs leading to increased funding, policy support and technical assistance. Their experience and expertise in logistics, customs, national finance and broad corporate governance can be infused into EPSS operations, optimize operations and lead to robust and integrated solutions

EPSS is structured into more than 19 branches and seven branch clusters that are supported by a team of technical experts. Despite the existence of a well-defined policy and legal framework, there are still fragmentations in responsibilities with other agencies of government to include FMoH that has a department, the Pharmaceutical and Medical Equipment Directorate (PMED), EPSS, and Sub-national levels of government. EPSS mandated is to manage procurement, warehousing, distribution (to the last mile), financial management, management information systems supporting supply chains. This resulted in parallel accountabilities for stakeholders and could impede responsibility for underperformance as well as potentially could be exploited to advance undesirable practices such as corruption as well as other systemic inefficiencies (22,23). To address these challenges, the government enacted Proclamation No. 1354/2024, marking a significant policy shift. The proclamation grants increased autonomy in the management of financial and human resources and empowers the EPSS to develop procurement guidelines that promote value for money. This is expected to enhance overall operational efficiency and effectiveness. This essential legislative reform aims to respond to longstanding barriers, enabling the EPSS to more effectively guarantee the availability of essential medicines and fortify the resilience of Ethiopia's pharmaceutical supply chain, all while operating under the strategic oversight of the FMoH.

Implication: A board dominated by corporate executives risks weak sectoral expertise. Governance reforms must balance broad oversight with technical depth in pharmaceutical logistics and public health financing to avoid political-economic distortions.

Financial Expenditure Management

As a government agency, EPSS has a complex financing structure combining both domestic and external receives funds from the following sources:

(a) Revolving Drug Fund (RDF) - EPSS relies on a significant portion of financing that is generated from selling pharmaceutical products and supplies to public health facilities. RDF was established in 2003, and proceeds are re-invested back to finance the availability of medicines and supplies across the country. Supplies to health facilities are done on credit and are expected to pay EPSS from their budgets (budgets and user fees). However, the study reveals accumulated debts from public health facilities running in billions of Ethiopian Birr. The current proclamation 1354/2024 empowers the EPSS to collect debts from the health facilities bank accounts. Over the years RDF has grown from $ 86m (2020) to more than $ 160 m (2023)

(b) Government Treasury /domestic allocation – direct budget allocation from the national treasury to EPSS and the pharmaceutical fund

(c) external funding from donors and development partners targeting program specific commodities e.g. HIV, TB, Malaria and vaccines. The changing health financing landscape calls for sustainable domestic financing to guarantee the availability of medicines. Traditionally, these systems have been parallel to EPSS. The study reveals efforts towards integration through the implementation of the integrated pharmaceuticals logistics systems (IPLS), joint quantification and supplies planning for MoH and donors, channeling funds through EPSS and market shaping initiatives to improve accountability and availability of products (24-27).

Implication: Growing facility debts in the billions of Birr threaten EPSS sustainability. Enforcement of debt recovery under proclamation 1354/2024 is critical but must be paired with incentives for timely repayment and transparent financial reporting.

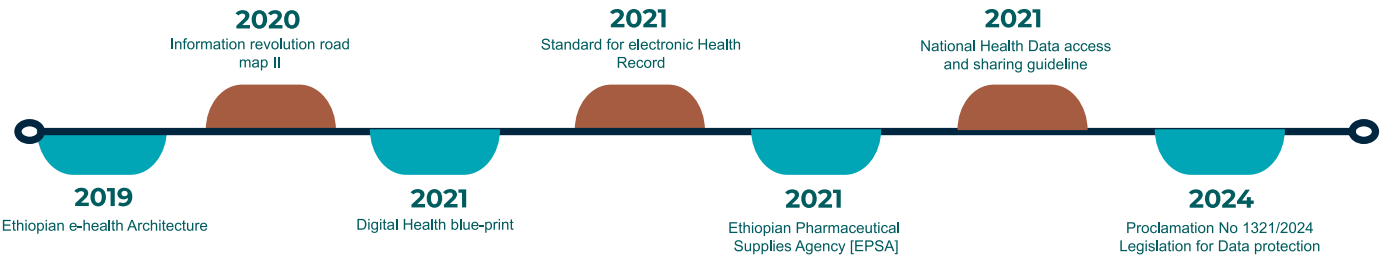

Figure 3: Evolution of Ethiopia's Digital Health and governance Landscape analysis by the authors *Sources: Multiple MoH documents*

Provider Autonomy

EPSS engages both public and private health providers. The application of health facility autonomy is a critical aspect of the pharmaceutical supply chain arrangements determining and limiting the decision-making process that affects how health facilities operate, manage resources and distribution of essential medicines and supplies. Public facilities have limited autonomy due to the following factors regulatory frameworks (with some autonomy and a requirement for approval from higher authorities); budget constraints (public health facilities have more autonomy on user fees/RDF while the FMoH and RHBs control the larger budgets drawn from the treasury); procurement process largely determined by regulations and policy from FMoH) and performance accountability (requiring direct accountability to government). On the other hand, private health providers enjoy greater flexibility, financial independence, and quality assurance.

Implications: Current facility autonomy is limited to cash payments by patients, this constraints responsiveness and innovation. Aligning autonomy and accountability with clear performance linked incentives could unlock efficiency gains and reduce stock-outs.

Information Systems

Ethiopia's digital health journey shows a structured evolution, from architecture and strategic planning to technical standards and finally to legal enforcement, underscoring a growing national commitment to secure, interoperable, and people-centered health information systems. The health digital system in Ethiopia has evolved over time guided by multiple and legal frameworks as summarized figure 3 below.

The EPSS is supported by multiple information systems designed to manage commodities, transactions, logistics and financial management leading to fragmentation. These include Health commodity management information systems (HCMIS) to track health commodities from the warehouse to health facilities and assess supply chain performance; Auditable Pharmaceutical Transactions and Services (APTS) aimed at improving transparency and efficiency of pharmaceutical transactions (helping to manage dispensing, sales and accountability including pilferage or misuse); Electronic regulatory information systems (ERIS) that provides regulatory visibility across the supply chain (allowing the Ethiopian Food and Drugs Administration (EFDA) for managing drug registration, licensing, quality control and compliance regulations); DAGU is an inventory management system at facility level (pharmaceuticals, laboratory reagents, medical equipment, and supplies) to help health facilities to track their stock. Despite its potential DAGU implementation faces some challenges such as infrastructure constraints, connecting issues and the need for stronger management support at facility level (28); District Health Information Systems 2 (DHIS-2) incorporates commodity consumption data and stock levels.; Integrated Financial Management Systems (IFMIS/IBEX) - a government wide financial management systems used to track health expenditure, budgets and financial transactions related to procurement and supply chain operations; Community Based Health Insurance (CBHI) that supports claims management, medicine utilization and reimbursements indirectly affecting procurement planning. The study noted that while there is increased utility of individual systems, the overarching challenge is their fragmentation and limited interoperability. This limits the capacity for timely evidence-based decision making in the management of essential medicines and supplies. Lack of an integrated view of available data sets limits identification of bottlenecks, forecasting and quantification, matching available resources to established needs across the entire supply chain. Ethiopia has multiple health and financial information systems that support supply chain (More than 9).

Table 3: Health and financial information systems supporting supply chain in Ethiopia

Years established	Name of the Management Information systems (MIS)	Who established the MIS?	What the MIS seeks to solve
2007/08	HCMIS (Health Commodity Management Information System)	PFSA [Pharmaceutical Fund and Supply Agency] precursor to EPSS	Stock management at facility level (dispensing, receiving, issuing)
2009 Dagu 1.0 and Dagu 2.0 2023/24	Dagu software Dagu was established through a public-private partnership	Ethiopian Pharmaceutical Supply Service (EPSS) in collaboration with a USAID-funded project (USAID/Deliver)	digitize its health supply chain and improve primary healthcare. This included frequent stock outs, poor data quality, inefficient reporting and lack of visibility
2009	Integrated Pharmaceutical Logistics System (IPLS)	Its creation was a key part of a broader health sector reform initiated by the Federal Ministry of Health and the then-Pharmaceutical Fund and Supply Agency (PFSA), which is now the Ethiopian Pharmaceuticals Supply Service (EPSS).	To provide a standardized, integrated approach to managing all health commodities. It encompasses policies for inventory control, storage, reporting, and distribution.
2014/15	District Health Information Software (DHIS2)	University of Oslo and rolled out on demand to countries. In Ethiopia rolled out with support FMoH	Countries relied heavily on paper-based registers, manual data reporting characterized by inefficiencies, quality and delays
2015 and rolled out nationally in 2018	mBrana- Electronics logistics management system available both in mobile and web	PFSA - Deployed in districts that manage vaccines and are supplied from PFSA	Poor vaccine supply chain management performance and efficiency
2018 pilot, scaled in 2021	eCHIS (Electronic Community Health Information System)	Manual data sets from the community health workers	Mobile digital tool for Health Extension Workers (HEWs)
2015	VIMS (Vaccine Information Management System)	provide end-to-end visibility of the vaccine supply chain, from the central warehouses of the Ethiopian Pharmaceuticals Supply Service (EPSS) all the way to the health facilities	Lack of integration led to poor data visibility, frequent stock-outs, and a high administrative burden for health workers
2017/18	Woreda health information system (HIS) - centered around the national implementation of DHIS2	to empower district-level health managers to make data-driven decisions that improve the performance of their local health services	Data quality and timeliness, performance management, resource planning and allocations, strengthening supervision and data integration
2014 began and piloted in May 2015	IBEX	An earlier system called IBEX was introduced and implemented at the sub-national level in over 1,800 locations across the country.	IBEX (Integrated Budget and Expenditure System) is a key component of Ethiopia's broader public finance management reform
2010 but rolled out in 2014 and 2015	IFMIS	EPSS and health facilities, is primarily focused on financial accountability and transparency, not day-to-day logistics	EPSS is a central component of the government's financial ecosystem. It is therefore mandated to use the national financial management systems for its public financial transactions
2011	Community-Based Health Insurance (CBHI)- claims and management information systems	The CBHI information system supports the health supply chain indirectly by strengthening the financial health of public health facilities	It is a critical source of revenue that allows facilities to maintain and improve their services, which has a direct impact on the supply chain
2010	Enterprise Resource Planning (ERP)	The Enterprise Resource Planning (ERP) system to manage its complex, large-scale operations. This system, which is based on a platform like SAP S/4HANA, is the central nervous system of the organization.	It was initiated to replace disparate legacy systems with a single, integrated platform. The rollout was a phased process, starting with core financial and procurement modules and then expanding to include logistics, warehousing, and other operational functions.

Sources: multiple and analysis from the authors

Implications: Digitization of both supply chain and health systems will strengthen governance and financing. The current fragmentation across multiple systems (HCMIS, DAGU, APTS, DHIS2, IFMIS, CBHI) undermines accountability, delays debt recovery, and weakens performance monitoring. Interoperability is essential for strengthening strategic purchasing decision making enabling real-time financial discipline, transparent procurement, and evidence-based allocation of medicines that directly advance equity and efficiency.

Purchasing Functions

Benefit Specification / Essential Medicine List

Ethiopia remains committed to apply evidence-based priority setting mechanisms of determining the Essential Medical List (EML). The current EML is the seventh which has identified 548 generic medications. The process of determining the EML involves key stakeholders through a technical working group (TWG) comprising of Ethiopia Foods and Drug Administration (FEDA), EPSS providing useful consensus across public health, professionals and academia. There is progressive effort to incorporate Health Technology Assessment (HTA) with the following considerations applied to include public health relevance, safety comparative efficiency and quality, comparative cost effectiveness, legal registration and fixed dose combination products (29).

In addition, EPSS is engaged in defining the Pharmacy Procumbent List (PPL) with the inaugural edition done in 2018. A more comprehensive second edition in 2021 (that has identified 1373 items) has provided more evidence-based reference for its procurement activities, strengthening more focused operations and a quantifiable benchmark for assessing its efficiency and effectiveness in supplying essential commodities. This includes the systematic exclusion of 26 medications that have been deemed unsafe, obsolete, or superseded by more cost-effective alternatives, based on the most recent clinical data. This strategic rationalization directly aligns with the best global practices, as evidenced by the explicit incorporation of the World Health Organization (WHO) Model List of inclusion criteria (30).

The study revealed that although the process of setting priorities is transparent and participatory a several challenges include inconsistent revision timelines, reliance on external funding and lack of local experts trained in data analysis. Collectively, these compromise the rigor and frequency in updating the lists. In addition, medical equipment is excluded leading to ad-hoc decision making on their procurement both at national, sub-national and individual facilities. Full integration of HTA for all medical requirements and institutionalizing a more disciplined revision cycle that truly optimizes and responds to the national pharmaceutical supply chain systems (31-32). In addition, it was reported that the user fees charges are made to health facilities to allow access of medicines and supplies a factor that increases the OOP.

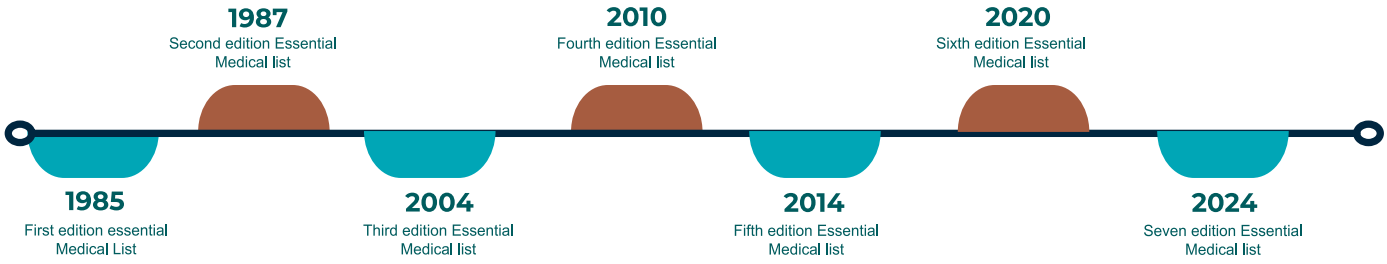

Figure 4: The seven iterations of the Essential Medical List (EML) in Ethiopia analysis by the authors
Sources: multiple MoH sources and analysis by the authors

Implications: the use of essential medical lists as prioritization tool and its linkage to agreed health benefit package strengthens the country's ability to guarantee equity, efficiency, and financial discipline. Regular updates, the use of analytics from the HTA strengthens resource optimization.

Contracting Arrangements: from whom to purchase

EPSS engages both public and private health facilities through a structured framework aimed at ensuring effective procurement and distribution of essential medicines and supplies. Public health facilities are automatically selected while there is criteria set for engagement of private health facilities. Public facilities are obligated to procure essential medicines and medical supplies from EPSS through a policy directive from FMoH that provides for mandates supply (where public health facilities are obligated to procure from EPSS to ensure standardized, quality assurance and affordable products); revolving drug fund (EPSS supplies medicines to public health facilities on credit while facilities commit to pay using internally generated funds – user fees, insurance reimbursements and government budgets). This cost recovery mechanism aims at refinancing EPSS to guarantee continued supplies integrated pharmaceutical logistics systems (IPLS). Facilities use DAGU to manage inventory and submit reports and requisition forms (eRRFs) to the EPSS regional hubs. There are no –formal contracts between EPSS and

health facilities. (33) Private health facilities are engaged through specific usually exceptional circumstances operating on a more private transactional or program specific basis. Currently, EPSS is planning to work on contract enforcement to immediately draw resources from health facility accounts to reduce the length of time it takes to settle debts. (34)

Implications: Formal contracts embed financial discipline by trying to supply repayment obligations, strengthen governance by introducing enforceable performance clauses, and create accountability across public and private providers. Without contracts, EPSS relies on directives and goodwill; with enforceable agreements, it gains the leverage to ensure reliability in service delivery, debt recovery, and transparent accountability—all essential for sustainable UHC.

Provider Payment Mechanisms: how and how much to pay and how providers access Essential Medicines and Supplies

Current provider payments under the EPSS are not explicitly linked to provider performance. EPSS utilizes multiple provider payment mechanisms to achieve this to include push (focused based allocation); pull system (demand driven allocation); hybrid system (a combination of push and pull allocation) donor earmarked distribution; facility budgets/revolving Drug Funds (RDF).

Pull (Demand-Driven based allocation) – Largely EPSS uses the 'pull' system where health facility needs determine medicines and supplies made. Its key elements include demand forecasting (where health facilities are expected to forecast their own requirements-based forecasting and quantification, historical consumption data, disease patterns and expected patient load); revolving drug fund (RDF) through cost recoveries-Health facilities are allocated an initial fund, which they use to purchase medicines from EPSS. As they sell these medicines to patients (either through user fees or from other health financing sources like Community-Based Health Insurance), the funds are replenished (35-37). This revolving fund is the basis for their next order; allocation to health facilities is also based on the EML and priority program support for Health facilities benefit from using the Logistics Management Information Systems (LMIS) and through Health Commodity Management Information Systems (HCMIS). Regional and health facilities are required to submit Report and Requisition Forms (RRFs) supported by the Integrated Pharmaceutical Logistics Systems (IPLS). A pull system was reported to promote facility level requests, strengthen inventory management and allow flexibility in supplies. Despite the positive on this mechanism, some health facilities struggle to pay EPSS on time due funds flow challenges such as delays from the CBHI or weak revenue collection; inaccurate forecasting due to limited capacity at lower levels leading to over or under ordering; stock outs and delays – disruptions on the central procurement system affect availability of medicines at the health facilities; limited autonomy – facilities have restricted control over procurement options beyond EPSS even when the stock is unavailable (38-40).

Push (focused based allocation) - EPSS determines the quantities of medicine that are to be sent per health facility based on an already established criteria that considers catchment population, disease incident and other factors. Programs like HIV, TB, Malaria and immunizations whose allocations are mainly determined by donor commitments and targets. The stock at EPSS is based on the agreed EML developed through a consultative mechanism involving stakeholders. This mechanism is particularly important to health facilities with limited ordering capacity (to include very remote areas, areas affected by emergencies such as outbreaks or areas affected by conflicts or newly established areas). In addition, medicine kits are pre-parked per level of health facility and forecasting and quantification process done at national or health facility level. A push system was reported to promote centralized procurement, scheduled distribution and utilized regional and woreda stores (41-42).

Hybrid system (a combination of push and pull allocation): integrates a proactive push system with the responsive characteristics of the pull system. This system was reported to have more flexibility and efficiency in the management of the supply chain and making more medicines and supplies available to health facilities. This approach ultimately contributes to improved health outcomes and better service delivery in the Ethiopian Health system.

The above mechanisms are financed through RDF/ facility budgets, global budgets (allocations from treasury and donors) or through direct support via the implementing partners (35).

The EPSS recorded a revenue of 9.5 billion Ethiopian Birr (ETB) using RDF and illustrated its importance in maintaining the national health commodity supply chain, according to the 2022/23 Annual Performance Report of the EPSS. The cost-to-income ratio of 7.33% demonstrates operational efficiency, while the credit cash collection rate of 76.3% demonstrates moderate liquidity management in the supply chain. The rate of total funds utilization was 94.6%, although a disparity was observed in the total regional utilization from a low of 82% (Addis Ababa) and a high of 110.7% (Gambella), which strongly indicates varying absorption capacity and fiscal discipline from one administrative unit to another.

Reviewing the aging receivables performance, the EPSS reported a total of 1.48 billion birr in aging receivables with 81.8% of it being current or at least paid within a year. Further 13.6% aged between one and three years and 4.6% above 3 years, which highlights a need to strengthen credit control strategies and to implement more vigorous recovery policies. The budget execution analysis indicated deficits and overruns of execution against budget with expenditure as a percentage of budget ranging from 82% to 134%. Again, the disparity is related to a host of systemic and operational factors, including procurement lead-time delays; delayed or slow credit recoveries; unexpected demand increases; and demand surges due to inaccurate forecasting or public health emergencies; further, the incidence of market driven inflationary behaviors must be considered.

Implications: how providers access medicines and supplies is an important decision in strategic purchasing. Without performance-linked payments, inefficiencies persist; with disciplined, accountable mechanisms, EPSS can transform use the concept of PPM to drive equity, reliability as its supports government effort to make progress towards UHC.

Performance Monitoring

EPSS operates multi-layered performance monitoring framework that includes various agencies (both public and non-public actors), who rely on different management information systems at varied levels across macro [the focus is on national oversight, policy adherence, and overall accountability to the government and the public), Meso (This level involves direct oversight by sector-specific and regulatory bodies responsible for the health sector and public enterprises) and Micro (This level focuses on the operational performance at the point of service delivery (health facilities) and sub-national administration, directly impacting patient access and experience). This integrated approach provides useful evidence and data that potentially can contribute towards comprehensive oversight and continuous improvement of the availability of essential medicines and supplies

Macro-Level Performance Monitoring

At the macro level, the focus is on national oversight, policy adherence, and overall accountability to the government and the public.

Table 4: Macro Level Performance Monitoring

Agency involved	Management information system	Frequency of review
Parliament - Provides the ultimate legislative and oversight function.	National Budgeting System: EPSS's budget submissions and execution reports are part of the broader national financial data	Annually: Budget approval, submission of annual financial statements, and external audit reports. Periodically (as needed): Parliamentary committee hearings, question-and-answer sessions, legislative reviews based on performance concerns
Office of the Federal Auditor General: Conducts independent external audits.	National Budgeting System: EPSS's budget submissions and execution reports are part of the broader national financial data.	
Ministry of Finance (MoF): Oversees overall public financial management and budget execution for all public enterprises	Consolidated Financial Statements: EPSS's audited financial statements contribute to national financial reports.	

Source: multiple from FMoH, EPSS

Macro-performance monitoring arrangements – other agencies that provide oversight on EPSS

This includes the over-arching policy, regulations and financial management that would support effective purchasing of essential medicine and supplies. This involves agencies within the health sector, broader government systems and with stakeholders (development partners). The legal and policy framework creates a robust system of checks and balances; mandates data driven decision making and provides for accountability for EPSS as a public entity. This is crucial for effective monitoring of EPSS and its contribution to the development of the Ethiopian broader health systems objectives and goals.

A report from World-Bank highlighted the following gaps in the PFM practices at the EPSS to include delayed clearance financial audit with the last published report being for FY 2017/18 these limits timely accountability and transparency, inadequate internal audit capacity this limits the ability of the EPSS to conduct continuous internal oversight, identify control weaknesses and prevent mismanagement; weak financial transparency and public disclosure as EPSS suggesting a short fall in making crucial financial information accessible to stakeholders; delays in financial reports affecting timely financial decision-making, monitoring by oversight bodies, and effective resource management; finally low budget utilization together planning and procurement delays this affects EPSS ability to procure essential medicines efficiently and utilize allocated funds effectively.

Table 5: Macro Level Performance Monitoring

Specific law	Who oversights EPSS?	Provision from the law	Effect on performance monitoring
Proclamation 1354/2017 that was approved on November 26, 2024	Federal Ministry of Health & Finance	EPSS has greater autonomy, sole importer and distributor of health products. This is aimed at strengthening financial sustainability	Grants EPSS the mandate to be accountable for performance management of the supply chain systems. This is included in the annual reporting process.
Proclamation No. 1112/2019	Ethiopian Food and Drug Authority (EFDA)	EFDA as the pharmaceutical regulatory body in Ethiopia	Grants EFDA performance monitoring responsibilities on product quality, good storage and distribution practices; compliance with procurement of only registered and licensed products, post market surveillance and traceability of medicines
Proclamation No. 1239/2021	Federal Ministry of Finance; Office of the auditor General	The Public Financial Management (PFM) Proclamation in Ethiopia	Comprehensive framework that governs fiscal rules, budget (formulation, approval, execution and reporting); medium term and annual planning; introduces program-based budgets (PBB) and transparency that includes public participation and allows both internal and external audits.
Proclamation No. 1333/2024	FMoF; and Public Procurement and Property Administration Agency (PPPAA)	Federal Public Procurement and Property Administration	Mandates EPSS as public entity, value for money, annual procurement plans, establish an electronic system information (to allow real-time performance monitoring and data collection); maintain accurate records; contract administration, supplier tracking system, complaint and appeal and reports defaults.
Health Sector Transformation Plan HSTP II (2020-2025) / National Health Policy Sept. 1993	Federal Ministry of Health	National health policy Prioritizes UHC HSTP prioritizes availability of medicines EML/STG to promote rational medicine use	Creates an eco-system of accountability of the EPSS to the Federal MoH; Federal MoF and its agencies. set the strategic performance goals, and various government entities (MoH, EFDA, MoF, Auditor General) are empowered by specific laws and regulations to provide the necessary oversight and performance monitoring of EPSS The MoH publishes the HSTP annual performance report that includes a review of the supply chain
Proclamation No. 25/1992	FMoF	This proclamation establishes the legal framework for wholly state-owned public enterprises in Ethiopia	Provides for the establishment of clear organizational structure with a management board and Director General; external audits and financial reports; plans and budgets; accountability and liability. external oversight, supported by the **Board** internally, and verified by **External Auditors** and the **Auditor General**
Constitution of the Federal Democratic Republic of Ethiopia (Article 55(11))	The House of Peoples' Representatives (Parliament)	The Ethiopian Parliament has the ultimate authority, granted by the country's main law (the Constitution), to act as a watchdog over the government and state-owned businesses like EPSS, ensuring they perform well and are accountable.	Potentially this provides opportunity for external accountability, promoting transparency, driving efficiency, compliance and policy and legislative adjustments. This provides performance contracts through measurable targets, the use of e-PFM and procurement, internal and external audit

Source: multiple from FMoH, EPSS

Meso-Level Performance Monitoring

This level involves direct oversight by sector-specific and regulatory bodies responsible for the health sector and public enterprises.

Table 6: Meso-Level Performance Monitoring

Agency involved	Management information system	Frequency of review
Supervising Authority (e.g., Ministry of Finance / Public Enterprises Holding / Ministry of Health): The direct oversight body mandated by the Public Enterprises Proclamation.	EPSS's Internal Financial & Operational Reports: Submitted to the Supervising Authority (e.g., monthly, quarterly, annual reports on budget execution, procurement performance, stock status).	Monthly/Quarterly: Submission of financial and operational performance reports to the Supervising Authority. Annually: Approval of EPSS's annual corporate targets, work programs, and budgets by the Supervising Authority. Regularly/As needed: EFDA inspections, PPPAA compliance checks, review meetings, and responses to specific issues (e.g., product recalls, procurement non-compliance).
Ethiopian Food and Drug Authority (EFDA): Regulates product quality, safety, and pharmacovigilance.	Quality Management System (QMS) Databases: EPSS's internal QMS data and reports shared with EFDA. Pharmacovigilance System (National Database): Data on ADRs and product quality issues, managed primarily by EFDA, but EPSS interacts with and receives alerts from it.	
Public Procurement and Property Administration Agency (PPPAA): Oversees compliance with federal public procurement laws.	Public Procurement and Property Authority (PPPAA) Electronic System: EPSS is mandated to utilize this system for planning, tender processing, contract management, and supplier performance tracking.	

Source: multiple from FMoH, EPSS

Micro -performance monitoring arrangements – that allows EPSS to apply performance monitoring on sub-national government and health facilities

EPSS utilizes multiple and sometimes fragmented information management systems to strengthen performance monitoring. We noted that it includes manual, digital and with integrated and or non-integrated health information systems. The e-LMIS is the main system to guide commodity data flow.

Table 7: Micro-performance monitoring arrangements

Agency involved	Management information system	Frequency of review
EPSS Regional Hubs/Warehouses: Directly interact with and distribute to sub-national levels and facilities.	Electronic Logistics Management Information System (eLMIS): The core system for facilities to report stock balances, consumption, and requisitions. EPSS uses this to monitor stock-out rates, reporting rates, and order fulfillment.	**Monthly/Bi-monthly:** Regular reporting by health facilities into eLMIS. **Quarterly/Ad-hoc:** Supervisory visits by EPSS or joint teams to health facilities. **Daily/Real-time:** Electronic alerts from eLMIS (e.g., for low stock). **Continuous/Informal:** Community feedback.
Regional Health Bureaus (RHBs) & Zonal Health Departments: Oversee facilities in their respective areas.	Health Management Information System (HMIS): (Owned by MoH) Provides broader health service delivery data (patient visits, diagnoses), which EPSS uses to *infer* impact on patient outcomes and to inform demand forecasting.	
Health Facilities (Hospitals, Health Centers, Health Posts): The endpoints of the supply chain.	ADR & Product Quality Reporting Systems (at facility level): Forms or modules used by facilities to report suspected adverse drug reactions or product quality defects. This data feeds into national systems but originates at the micro-level.	
Community Health Workers/ Community Members: Provide informal feedback.	Manual Stock Cards/Ledgers: Still used at facilities as primary records, which EPSS verifies during supervision.	

Source: multiple from FMoH, EPSS

MIS systems	Purpose	Implications for performance monitoring
Electronic Logistics Management Information System (eLMIS)- central digital nervous system for EPSS's micro-performance monitoring, connecting it directly to health facilities and sub-national government levels	The eLMIS is a web-based or desktop application (often accessible via web browser for health facilities) designed to manage commodity data throughout the supply chain. E-LMIS allows real-time stock status, consumption, forecast demand, inventory management and distribution	Health facilities: This shows up in the health facilities to include stock status report, consumption report, requisition and loss adjustment reporting Sub-national government: aggregation, performance monitoring (stock-out rates, reporting rates) order approval and support supervision
Annual and routine reports from MoH	To assess the performance of the health system with particular attention to Health facilities including Provider assessment Reports	Includes reports on medicine availability that provides information to EPSS on areas that need improvement. Last published report on the 2021/22
Manual data collection tools	Through stock outs and physical counts	Primary record at the facility level and a crucial cross-reference during supervisory visits.
Health management Information System (HMIS)/DHIS2	The national HMIS (often based on DHIS2) collects broader health service delivery data (patient visits, diagnoses, treatments, health outcomes).	HMIS data on disease prevalence or program targets informs EPSS's quantification and procurement planning, ensuring medicines are available where and when needed.
Quality Management System	There are often simple reporting forms or modules (paper-based or integrated into eLMIS/HMIS) at the facility level for reporting suspected quality issues (e.g., adverse drug reactions, product defects).	EPSS relies on these reports from the micro-level to trigger investigations, product recalls, or engage with suppliers, ensuring the quality of products supplied throughout the chain.

Source: multiple from FMoH, EPSS

Micro-Level Performance Monitoring

This level focuses on the operational performance at the point of service delivery (health facilities) and sub-national administration, directly impacting patient access and experience.

Despite its importance we noted that this has not been optimized with the EPSS lacking the ability to directly monitor patient data. Thus, EPSS has limited ability to monitor patient level performance of supply chain or patient experience leading to largely indirect data. This data set is largely unavailable since it depends on informal health information systems that are manual and only available with the person collecting it.

Table 8: Micro-Level Performance Monitoring

Management information systems	Purpose	Implications for performance monitoring
Adverse Drug Reaction (ADR)	ADRs or suspected substandard/falsified products, this is a direct reflection of a negative patient experience related to product quality.	EPSS depends on EFDA data to determine product safety, supplier performance, logistics, procurement strategy
Product Quality Reporting Systems	EPSS receives these reports (often through EFDA channels or integrated QMS modules) and uses them to identify potential issues with procured batches or suppliers, which directly impacts future patient safety.	EPSS depends on EFDA to understand details on quality of products, lab-testing can lead to recall, warnings and enforcement actions
In-formal Community Feedback Mechanisms	Patient complaints to health facilities or local health authorities about medicine unavailability or quality can filter up to EPSS.	Unstructured channels through which community members, patients, or local leaders communicate their experiences and observations regarding health services, including medicine availability and quality
Pharmacovigilance Systems	These systems, primarily managed by EFDA and clinical facilities, collect patient-specific data on adverse events. EPSS might receive aggregated reports or alerts from these systems if a supply chain issue (e.g., cold chain breach leading to product degradation) is suspected of causing patient harm	Pharmacovigilance (PV) is the science and activities relating to the detection, assessment, understanding, and prevention of adverse effects or any other drug-related problems. As an MIS, it's a comprehensive system that encompasses ADR reporting but also broader drug safety monitoring

Source: multiple from FMoH, EPSS

The use of IBEX as a financial system is hindered by infrastructural damage, procurement delays, the need to configure new accounts, challenges in capturing and consolidating historical and recent transactions especially in the regions affected by conflict.

Policy Recommendations

Key policy recommendations for the EPSS and the broader Ethiopian health system, aimed at leveraging Strategic Health Purchasing (SHP) principles for improved pharmaceutical supply chain performance and essential medicine availability:

Recommendations	EPSS:	Health System
Strengthening Governance for Strategic Decision-Making:	Re-evaluate and potentially restructure the EPSS Board to include members with deeper and more dedicated expertise in pharmaceutical supply chain management, logistics, and public health. This will enable more informed and agile decision-making on complex supply chain issues. While maintaining broad oversight, ensuring specialized knowledge is crucial.	Clearly define and streamline mandates and responsibilities between EPSS, the Federal Ministry of Health (FMoH) (e.g., PMED), and sub-national governments to eliminate fragmentation and overlapping accountabilities, thus improving coordination and reducing inefficiencies.
Ensure Financial Sustainability and Prudent Management	Aggressively implement strategies to recover the billions of Ethiopian Birr in accumulated debts from public health facilities. Leverage the powers granted by Proclamation 1354/2024 to enforce timely payments and strengthen credit control mechanisms.	Develop sustainable domestic financing mechanisms for essential medicines to reduce over-reliance on external funding. This includes exploring how Community-Based Health Insurance (CBHI) funds can more consistently and predictably flow to facilities and, subsequently, to EPSS for medicine procurement.
Prioritize Integrated and Interoperable Information Systems:	Develop and implement a national digital health strategy that mandates the **integration and interoperability** of all existing disparate information systems (HCMIS, APTS, ERIS, DAGU, DHIS2, mBrana, VIMS, IFMIS/IBEX, CBHI systems, etc.). This is the single most critical policy intervention to enable real-time data flow, accurate forecasting, bottleneck identification, and evidence-based strategic decision-making across the entire pharmaceutical supply chain.	
Refine Essential Medicine and Procurement Lists, Including Medical Equipment:	Apply a more disciplined and consistent revision cycle for the Essential Medicine List (EML) and Pharmacy Procurement List (PPL), ideally every 2-3 years, ensuring it is agile and responsive to evolving public health needs and market dynamics.	building local capacity for Health Technology Assessment (HTA) to inform EML/PPL updates more rigorously. Critically, expand the scope of these strategic procurement lists to explicitly include **medical equipment**, currently an area of ad-hoc decisions, to ensure a comprehensive and planned approach to medical supply availability.
Strengthening Provider Autonomy and Link Payments to Performance:	Review existing regulatory frameworks to grant public health facilities more calculated autonomy in managing their budgets and procurement decisions, especially regarding the Revolving Drug Fund (RDF). Develop and pilot provider payment mechanisms that explicitly link payments to performance indicators such as accurate forecasting, timely payments to EPSS, efficient inventory management, and low stock-out rates at the facility level. This would shift from a purely transaction-based system to one that incentivizes desired behaviors across the supply chain.	

EPSS is not just a logistics agency it is a financial and governance institution at the heart of Ethiopia's health system. Adoption of strategic purchasing policy levers can evolve into a true strategic purchaser that guarantees equity, efficiency, and reliable access to medicines for every Ethiopian household.

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