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Supply Chain Management for COVID-19 in Uzbekistan: Assessment and Recommendations

LOCAL HEALTH SYSTEM SUSTAINABILITY PROJECT

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Local Health System Sustainability Project

The Local Health System Sustainability Project (LHSS) under the USAID Integrated Health Systems IDIQ helps low- and middle-income countries transition to sustainable, self-financed health systems to support access to universal health coverage. The project works with partner countries and local stakeholders to reduce financial barriers to care and treatment, ensure equitable access to essential health services for all people, and improve the quality of health services. Led by Abt Associates, the five-year project builds local capacity to sustain strong health system performance, supporting a path to self-reliance and resilience.

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Acknowledgments

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Acronyms and Abbreviations

CCE	Cold chain equipment
CPAP	Continuous positive airway pressure
Dxarid	National Training Center for Government Procurements
F&Q&B	Forecasting, quantification, and budgeting
GoU	Government of Uzbekistan
HR	Human resources
IPC	Infection prevention and control
JSC	Joint-stock company
KOICA	Korean International Cooperation Agency
LHSS	Local Health System Sustainability
MCST	Multi-slice computed tomography
MIFT	Ministry of Investment and Foreign Trade
MoF	Ministry of Finance
MoH	Ministry of Health
PCR	Polymerase chain reaction
PPE	Personal protective equipment
RT	Rapid testing
SCM	Supply chain management
SES	Sanitary and Epidemiological Welfare and Public Health Service of the Republic of Uzbekistan (Sanitary and Epidemiological Service)
SOP	Standard operating procedure
SUE	State Unitary Enterprise
USAID	United States Agency for International Development
UzASBO	Automated System for Budgetary Organizations of Uzbekistan

Executive Summary

The Government of Uzbekistan has implemented some important reforms related to procurement and supply chain management (SCM) in the last 20 years. Changes to the organization of public procurement activity included the creation of procurement units within each line ministry in an effort to improve the quality of public procurement processes and outcomes. As part of these reforms, the Ministry of Health created a new procurement and supply chain organization known as Uzmedimpeks. This reform and a set of more recent decrees during the early part of the COVID-19 pandemic (listed in Section 2) have been important enablers of the Government of Uzbekistan's COVID-19 response.

The assessment included in this report finds significant variation in the maturity of the various component functions of the broader SCM system. There are relatively mature and weak functional areas in both enabling aspects and operational aspects of the system. The body of the report provides more information on each of these, and outlines the gaps to address as priorities within each functional area. While the assessment was largely qualitative in nature and based on document review and key informant interviews rather than on direct observation and performance data, we believe the results provide an accurate picture of the maturity of Uzbekistan's SCM system at this point in time. Taken together, the gaps identified in this report can form the basis for a targeted strategic plan or roadmap aimed at supply chain performance improvement.

Supply chain improvement programs are usually based on a foundation of process excellence and regular performance reviews. The Ministry of Health and its partners should follow the same blueprint in this case. This report contains some guidelines to follow in the creation and management of Standard Operating Procedures (SOPs) and a sample technical SOP to demonstrate a format, style, and level of detail that is commonly used. We recommend that each SOP be developed with inputs and validation from all parties involved in that particular process. This is important not only for ensuring SOP accuracy but to create a sense of ownership of the new SOPs among the people who will use them.

We further recommend that the Ministry of Health and its partners implement a supply chain performance review process as the principal means by which to drive continual improvement. This performance review process can begin by focusing on a small number of critical performance indicators, such as stockouts at health facilities, and expand in accordance with the Ministry of Health's priorities and the availability of measurement data. Combining these regular reviews with analysis of the performance and action plans to address problem areas is the soundest method available of charting a course toward sustainably better SCM outcomes.

Summary of recommendations:

We propose that the Ministry of Health and its partners embark on three workstreams that will build on the findings presented in this report.

1. **Create and implement a prioritized action plan based on the gaps identified in the functional assessment.** This workstream can be broken down into the following steps:
    a. Convene a meeting or workshop with all key partners to validate the findings and prioritize the gaps identified in the assessment. This step will provide the government and its partners with the opportunity to discuss and agree on priority areas. This consensus will be important as the action plan progresses through implementation.

   b. Create an action plan based on the prioritization of gaps completed in step 1.

   c. Source funding for the activities contained in the action plan.

   d. Implement the activities in the action plan.

2. **Create and implement a comprehensive set of SOPs for SCM.** This workstream can be broken down into the following steps:

   a. Define the total set of SOPs required for SCM, and create each SOP as an accurate, step by step description of how each process works. This step must include the full involvement of the institutions and individual officers involved in each SOP.

   b. Implement the set of SOPs, including proper processes for control, audit, review, revision, and staff training.

   In support of workstream 2, this report contains one full sample technical SOP and three supporting SOPs. The sample technical SOP demonstrates a format, style, and level of detail that may be useful as the full set of SOPs is developed. The three supporting SOPs cover the topics of SOP creation, management, and training.

3. **Create and implement an SCM performance review process**. This is a fundamentally important component of driving sustainable improvement in SCM in any environment. This workstream can be broken down into the following steps:

   a. Create a supply chain performance review committee. This should include representation from all institutions who have an active role in the execution of supply chain functions, including the Ministry of Finance.

   b. Agree on a small number of performance measures, including the target performance level for each one. The number of performance measures can grow over time as the maturity of the performance review process grows – we recommend that the committee begin with no more than three performance measures, selected according to the Ministry of Health's wishes and the availability of (and ease of access to) the required supporting data.

   c. Implement a performance review process at agreed intervals. The objectives of each review should be to (i) review performance in the most recent period for each agreed performance measure, (ii) identify the reasons for any performance shortfalls, and (iii) agree on remedial actions, where required

1. Introduction

LHSS Overview in Uzbekistan

Beginning in April 2020, the Local Health System Sustainability (LHSS) Activity in Uzbekistan led COVID-19 response activities in conjunction with development partners and key government stakeholders. Tasks carried out under this activity included:

- Procuring laboratory commodities and supplies
- Providing logistics and SCM support
- Strengthening surveillance and rapid response systems
- Conducting facility-level assessments
- Providing technical assistance and additional support on the appropriate use of ventilators and severe COVID-19 case management

On March 19, 2020, WHO presented the Strategic Preparedness and Response Plan to coordinate COVID-19 prevention activities. WHO, the United Nations Development Programme, and USAID are all key partners in implementing the plan. The plan identified 10 priority areas for Uzbekistan: country-level coordination, risk communications and community engagement, surveillance, points of entry, case investigation and rapid response, the national laboratory system, infection prevention and control (IPC), case management, multi-sectoral action to mitigate social and economic consequences, and logistics and SCM. LHSS Uzbekistan's interventions aligned with the Strategic Preparedness and Response Plan.

LHSS COVID-Related Activities in Uzbekistan

The COVID-19 Emergency Response Activity under the Local Health System Sustainability Project (LHSS), funded by the United States Agency for International Development (USAID), addressed immediate epidemic prevention, detection, and response needs while building on the existing national health systems and health system resilience strategies in five Central Asian countries: Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan. LHSS interventions were aligned with emerging global best practices and priorities of USAID's mission in Central Asia. LHSS mobilized the capacities of national stakeholders and leveraged existing platforms to rapidly implement jointly agreed and nationally approved plans for detecting and responding to the COVID-19 outbreak.

The LHSS activity in Uzbekistan contributed the following to Uzbekistan's national COVID-19 response:

1. Procurement of priority testing commodities, equipment, and emergency supplies
2. Provision of logistics and SCM support
3. Collaboration with donor and governmental partners to strengthen the Government of Uzbekistan's (GoU's) surveillance and rapid response system for the country's COVID-19 response

The activity's main objectives were to prevent the spread of COVID-19 by reducing its impact on target populations and to strengthen the health system and national capacity for universal access to COVID-19 prevention, diagnosis, treatment, and care in Uzbekistan.

Rationale for and Scope of this Report

USAID, through LHSS, worked closely with an SCM Working Group to strengthen the SCM system for laboratories and IPC-related measures. This working group, established in December 2020, is made up of key Ministry of Health (MoH) staff and championed by Babur Yuldashev, the SCM specialist in the MoH's Sanitary and Epidemiological Service (SES). As requested by the GoU and as agreed with USAID, LHSS SCM consultants and the SCM Working Group worked together on the following activities:

1. An assessment of the current SCM ecosystem for human resource-related IPC, analytics for polymerase chain reaction (PCR) testing, and other commodities such as Zoll ventilators
2. Development of recommendations for SCM modifications and improvement to the gaps identified in the rapid assessment
3. Development of a draft strategic roadmap together with operational guidelines

Items #1 and #2 are covered in full in this report. This assessment, including the issues identified within the SCM system and the guidelines for Standard Operating Procedure (SOP) creation (see Sections 3 and 5), will help the Uzbek government and its partners to create a strong set of operating processes that are both based on sound general technical principles and grounded in the needs of the Uzbek health system. The content of this report provides the foundation for the MoH to develop a future strategic plan or roadmap (Item #3) on SCM. This report will be translated into Uzbek and shared with the MoH to assist in this endeavor.

Methodology

This assessment was completed using a combination of qualitative methods. The assessment's first phase was a desk-based document review that provided a baseline understanding of SCM processes and policies related to the COVID-19 response in Uzbekistan. This desk review was followed by a series of interviews with experts from within the government system, which added important context and answered several questions that had arisen from the desk review.

The assessment team then produced their initial assessment and analysis of the COVID-19 SCM processes in Uzbekistan, including the figures presented in Section 3 of this report. The team then shared this initial set of findings with key government experts for their feedback.

The assessment team incorporated the feedback from government counterparts and produced their final draft findings. These findings were then shared with senior staff within the MoH, including the Deputy Head of Investment, for validation before the assessment moved into the production phase for the final report.

Document Structure

This document presents the research and analysis that LHSS conducted in pursuit of the objectives described above. We have organized the information as follows:

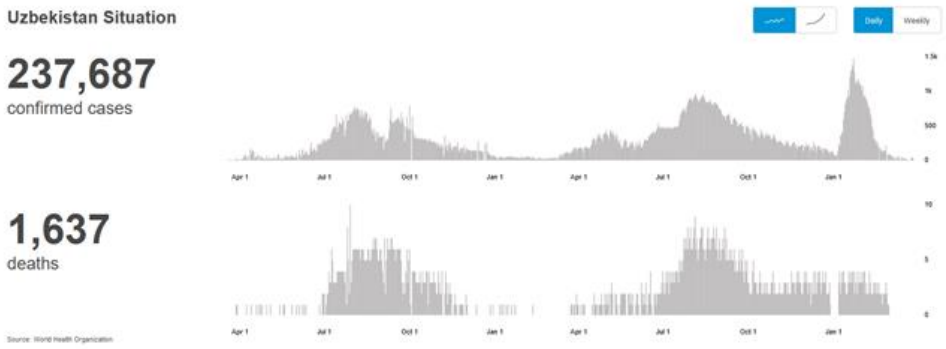
- Section 2 discusses the evolution of the COVID-19 response in Uzbekistan for context.
- Section 3 presents the LHSS Situational Assessment of the public health supply chain in Uzbekistan, with a focus on single-use items and the COVID-19 response. This section is broken down into several sub-sections:
    - Enabling aspects, including functional maturity tables
    - Operational aspects, including functional maturity tables
    - Context of the supply chain in Uzbekistan
- Section 4 presents procurement-related measures to support the COVID-19 response in Uzbekistan.
- Section 5 presents the process and proposed format for creating Standard Operating Guidelines (samples of overarching SOPs and one detailed technical sample SOP for SCM are provided in Annex A).

2. Evolution of the COVID-19 Response in Uzbekistan

In parallel to the WHO's declaration of SARS-nCoV-2 as a public health emergency of international concern, an Order of the President of the Republic of Uzbekistan (No. R-5537, January 29, 2020) established a Special Republican Commission on COVID-19 headed by the Prime Minister. The commission's mandate was to prepare a program of measures to prevent the import and spread of coronavirus in the Republic of Uzbekistan.

The GoU reported the nation's first official case of COVID-19 on March 15, 2020. In partnership with the WHO and other international partners, a National Strategic Preparedness and Response Plan was rapidly issued on March 19 with ad-hoc update thereafter. The plan outlined the intended combined actions of the government and its partners across nine pillars.[1] This included emphasis on improving country-level coordination, planning, and monitoring for COVID-19 (including for the health supply chain); providing essential commodity supply for IPC, diagnostics, and case management; and reinforcing services and supply chains to maintain other essential health services. As the pandemic evolved, the need to equip and reinforce the health supply chain with surge support was paramount, while also underscoring the need to help transform national SCM systems for emergencies to build broad health system resilience.

Figure 1. Evolution of Uzbekistan's COVID-19 Epidemic (2020-Present)



Source: WHO, Health Emergency Dashboard, website, accessed March 28, 2022, https://covid19.who.int/region/euro/country/uz.

As demonstrated in Figure 1, Uzbekistan's COVID-19 incidence has occurred in several distinct waves. Peaks in confirmed daily confirmed cases occurred in August and October 2020 and August 2021. As of writing, January 2022 saw the highest peak in daily incidence since epidemic outset. Confirmed community transmission of the Omicron variant was responsible for this latest spike in case rate, which has again emphasized the need to both understand Uzbekistan's current health supply chain needs for emergency response and reinforce standing SOPs for routine health supply chain functions.

[1] World Health Organization (WHO), "Summary National Strategic Preparedness & Response Plan for Health in Support of COVID-19 in Uzbekistan," December 5, 2020, https://uzbekistan.un.org/en/48910-summary-national-strategic-preparedness-response-plan-health-support-covid-19-uzbekistan.

To maintain momentum for service delivery improvements and health financing reform during the pandemic, the GoU introduced new legislative measures to support SCM:

- Presidential Decree No. 4662 dated March 27, 2020, "On additional measures to meet the needs of the population for medicines, medical products, medical equipment, and essential goods," https://lex.uz/en/docs/4775998
- Presidential Decree No. 5978 dated April 3, 2020, "On additional measures to support the population, economic sectors, and business entities during the period of coronavirus infection," https://lex.uz/en/docs/4780477
- Order (Prikaz) of the Ministry of Health of the Republic of Uzbekistan No. 206 dated August 7, 2020, "On the changes made to the procedure for the appropriate use and reasonable distribution of personal protective equipment (PPE)"

Acknowledging that the response would require broad investments in surge demands for staff, supplies, systems, and structures, the GoU and its partners have invested heavily in health system infrastructure, human resources, and technologies to assist in the response. The GoU engaged existing and new polyclinics (i.e., community-based health posts), and mobilized mobile response teams of infectious disease specialists, general practitioners, and epidemiologists to promote timely detection and containment of COVID-19.

To support rapid detection and triage of patients, the MoH organized 58 distribution screening centers with 500-1,000 beds each (15,000 beds total). The MoH addressed the expected surge demands for inpatient management by investing in the construction of a modern 4,000-bed hospital in Zangiata district and construction of similar facilities to treat COVID-19 patients in the Nukus, Samarkand, Termez, and Pap regions. A specialized 20,000 bed isolation center was put into operation in the Tashkent region, and smaller quarantine centers with 7,085 beds were commissioned in the Namangan, Samarkand, and Surkhandarya regions as well as the Republic of Karakalpakstan. The SES also commissioned and operationalized a new modern laboratory complex for micro-biological threat detection, including COVID-19.

To prepare human resources for health, in 2020 alone over 36,000 healthcare workers were trained in COVID-19 case management. LHSS held joint training sessions to educate healthcare providers on how to operate ventilators procured and how to use the ventilators for intensive care of COVID-19 patients. After finalizing a mobile application for training, LHSS held training sessions over Zoom due to COVID-19 restrictions. The training was conducted using the mobile app and communication via the Telegram messaging system. LHSS trained nearly 200 anesthesiologists across six regions on the appropriate use of Zoll® ventilators and oxygen therapy. Through a remote training program for ICU case management, LHSS trained nearly 300 healthcare providers on WHO guidelines on intensive care case management related to COVID-19.

To equip facilities, the GoU and donors financed and distributed critical equipment to medical institutions, including multi-slice computed tomography (MSCT), digital X-ray, continuous positive airway pressure (CPAP) machines, oxygen concentrators, mechanical ventilators, PCR testing platforms, cardiac monitors, intensive care materials, and oxygen stations. The GoU also provided home treatment kits free of charge, with more than 800,000 first-aid kits financed and organized by the Anti-Crisis Fund delivered to the regions. The kits contained paracetamol, ascorbic acid, zinc, azithromycin 500, hydroxyquinoline, and instructions for use.

All the investments above underscore how crucial Uzbekistan's health supply chain has been in promoting a successful response to COVID-19 while maintaining other essential health

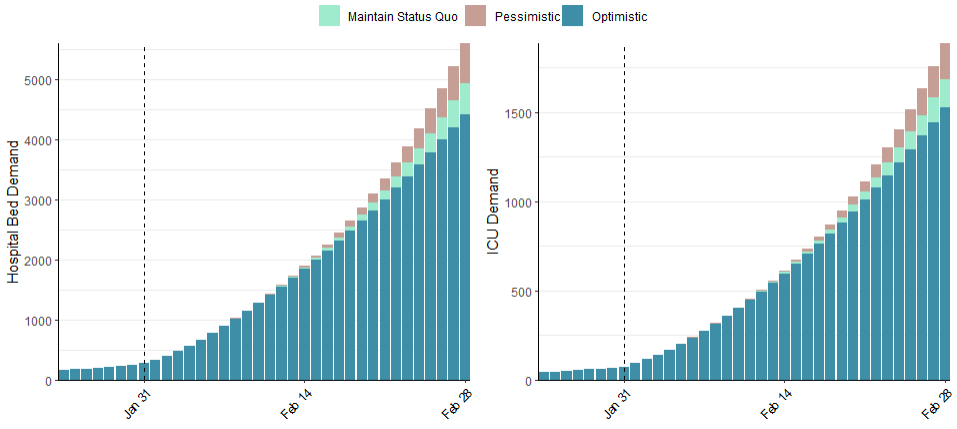
services. To help assess strengths and weaknesses in the response, USAID requested that LHSS conduct a supply chain situational analysis for COVID-19 and emergency response commodities. This analysis was conducted with an emphasis on understanding processes and procedures in forecasting, procurement, and distribution of COVID-19 materials. In particular, LHSS was requested to look at policies and procedures for procurement of PPE, COVID-19 related diagnostics, vaccines, and critical care materials (such as mechanical ventilator supports).

3. Situational Assessment of the Emergency Supply Chain Management System

The arrival of COVID-19 in Uzbekistan immediately placed significant strain on both existing supply and accurately forecasted procurement of key disease management commodities. PPE, diagnostic testing platforms, SUIs, intensive care case management materials (including mechanical ventilators), vaccines, and vaccine storage have been key emergency response commodities requiring an efficient and resilient health system supply chain.

A recent situation report and epidemic modeling carried out by Imperial College London with data from Johns Hopkins University (January 2022) suggested that demands for healthcare will continue to increase in all scenarios, emphasizing a need to continue building on lessons from the first two years of the pandemic, while targeting improvements in the SCM system for the long term.[2]

Figure 2. Health Care Demands in the Next 28 Days



Individuals needing a bed in an intensive care unit are assumed to need mechanical ventilation. Projected demand for Scenario 1 (the epidemic continues to grow at the current rate) is shown in green (Maintain status quo). Projections for Scenario 2 (optimistic) are shown in blue. Projections for Scenario 3 (pessimistic) are shown in red. Current date shown with dashed line.

Source: "Situation Report for COVID-19: Uzbekistan, 2022-01-31," MRC Centre for Global Infectious Disease Analysis, Imperial College London, January 31, 2022, https://mrc-ide.github.io/global-lmic-reports/UZB/.

To identify gaps and direct future interventions, the USAID requested that LHSS assess the SCM system for COVID-19 and emergency commodities. The situational assessment of the current SCM system that LHSS performed, according to the methodology described in Section 1, focused on single-use items related to testing for and treatment of COVID-19. The sections on Enabling Aspects and Situational Aspects present findings from this assessment.

[2] "Situation Report for COVID-19: Uzbekistan, 2022-01-31," MRC Centre for Global Infectious Disease Analysis, Imperial College London, dated January 31, 2022, https://mrc-ide.github.io/global-lmic-reports/UZB/.

Overview of Uzbekistan's Health Supply Chain

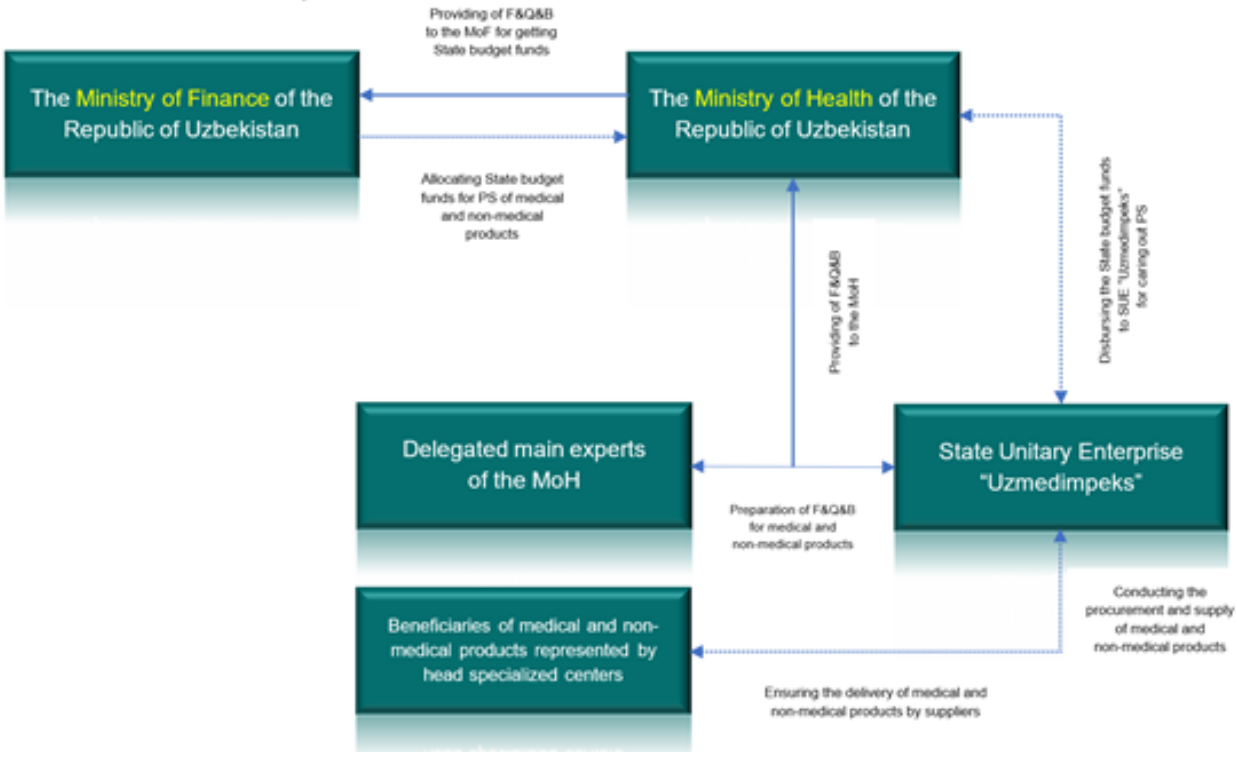
SCM in Uzbekistan has undergone major reforms in the last two decades. The Cabinet of Ministers' decree on measures to improve the organization of tenders established clearly structured mechanisms and procedures for the procurement of goods and services. During the first phase of reforms, this document became the main guidance for SCM in Uzbekistan.[3]

All state institutions were guided by these reforms. The functions of the authorized body and the coordinator of the procurement of goods and services are delegated to the Ministry of Finance of the Republic of Uzbekistan (MoF).

Meanwhile, reforms in the SCM field have led to the creation of procurement organizations in the structures of all ministries and government agencies. In the MoH, a separate organization was established: the State Unitary Enterprise (SUE) "Uzmedimpeks," which is responsible for the full cycle of SCM, starting from the forecasting of needs and culminating with delivery to the end user. However, the MoH is designated as the responsible government agency in the SCM cycle within the Republic of Uzbekistan's health sector.

Figure 3 illustrates the SCM system in the context of the Republic of Uzbekistan's broader health care systems.

Figure 3. Context of the SCM System within the Health Care Systems of Uzbekistan



MoH procures all types of essential medicines, medical products, and medical and non-medical equipment in a centralized and unified manner. However, as indicated in Table 1, the MoH has

[3] "On Measures To Improve the Organization of Tenders," Decree of the Cabinet of Ministers of the Republican of Uzbekistan No. 456 dated November 21, 2000, https://www.lex.uz/acts/386482?ONDATE=21.11.2000#755798.

transferred responsibility for procurement of some specific commodities to the Republican (central) heads of services:

Table 1. Procurement of Specific Health Care Commodities

Commodity Type	Body Responsible for Government Program	Procurement Agent
Vaccines	SES	SES UNICEF
PPE and laboratory equipment	SES	SES Through international and national procurement mechanisms
Essential medicines and medicines for COVID-19 treatment	MoH	SUE "Uzmedimpeks" *Since 2005*

Government organizations at the state level have been identified as the responsible parties for SCM related to all government programs. State SCM actors carry out various procurements through international procurement partners or vendors. At the same time, state health care institutions have small discretionary allocations to purchase goods and services.

Despite wide-ranging reforms of the SCM system in Uzbekistan, some system elements are underdeveloped due to a lack of funds. In particular, health care institutions do not have their own storage facilities for ensuring storage of a large volume of goods, and there is no robust cold chain system. Goods are often stored in unsuitable locations, and cold chain items are kept in simple refrigerators or freezers. This problem of the supply chain is currently mitigated by ensuring the storage of a large volume of goods at the central level and their distribution as the need arises at the regional levels, which leads to high costs for storage and warehousing purposes. Also, the system of transportation of goods from the central level to regional levels and subsequent delivery to local levels has not been established, and most health care institutions do not have specialized freight vehicles. This problem is solved by obtaining services from transport companies for a fee.

Assessment of the Current COVID-19 and Emergency Supply Chain Management System

In the case of SCM for COVID-19 measures, procurement is divided within the MoH into two broad categories:

- Supply for prevention (testing and immunization) measures: procurement of prevention, testing, and immunization supplies is handled by **SES**
- Supply for treatment measures carried out by the **MoH**: procurement for COVID-19 treatment supplies is the responsibility of the SUE "Uzmedimpeks."

Based on the analysis of the existing situation and considering future plans, the government acknowledges that future interventions to strengthen the SCM system in Uzbekistan need to emphasize not only basic and early stages of COVID-19 and emergency related procurements, but also an approach focused on all levels to the last mile, strengthening facility structural resources for procurement related tasks, and building a strong SCM system at the central and regional levels.

The situational assessment that LHSS performed found significant variation in the maturity of the various component functions of the broader SCM system. There are relatively mature and weak functional areas in both enabling aspects and operational aspects of the system. Below we provide more information on each of these and outline the gaps to address as priorities within each functional area. Taken together, the gaps identified in this report can form the basis for a targeted plan of action aimed at supply chain performance improvement.

Enabling Aspects

Please note: *The figures in the following subsections are intended to present a "big-picture" overview of assessment scores in aspects of Uzbekistan's supply chain systems such as data, regulatory frameworks, budgeting, and inspection. As such, the text in these figures is small and not intended to be read. Instead, the text of the relevant component score is repeated in the narrative below, as are small graphics denoting the assessment score achieved in that component. The levels achieved are marked with a checkmark and green shading, and the levels not achieved (marked in red in the figures) represent gaps to address. The scores are from Level 0 to Level 5, where Level 0 indicates nonexistent capability and Level 5 denotes strong capability in that component.*

People and Practices

We find that People and Practices scores relatively highly according to the assessment framework. Important components of HR management, such as job descriptions, clear organizational structure, and financing for supply chain positions are in place.

Recommendations: The most important gap identified in the assessment is in the component of the staff appraisal and reward system. These processes need to be much more closely linked to SOP adherence and supply chain performance. The improvement of the staff appraisal and reward system should therefore be developed in concert with the development of the SOPs and SCM performance measurement system described in the Executive Summary. Individual objectives and targets should reflect the individual responsibilities described in the SOPs and the performance targets agreed within the SCM performance measurement system.

More detailed findings on each component of People and Practices are contained in the figure below and the supporting text that follows.

Figure 4. Enabling Aspects: People and Practices

People and Practice

Level 1		Level 2		Level 3		Level 4		Level 5	
The importance of supply chain leadership is acknowledged throughout the government system and positioned accordingly		**Comprehensive HR for SCM assessment is completed and integrated into national supply chain strategies and plans.**		**Established HR plan, including strategies to establish and/or strengthen the national supply chain workforce.**		**Supply Chain managers have the necessary leadership, technical and managerial skills, authority, and accountability within their sphere of operations**		**Supply chain management cadre is established with clear career paths, teams are fully empowered and resourced to overcome existing and emerging supply challenges**	
1. Systematic assessments of HR for SCM within the government/relevant agencies in progress or completed and requirements are specified at all levels (national and sub-national) with HR plan as a funded priority	✓	1. HR FOR SCM plans in place with 1-5yr implementation plan being implemented; governance mechanisms/systems/SOPs in place and being followed.	✓	1. Adequately funded HR for SCM plans are being implemented; Competency framework fully integrated within government-led recruitment, training and development plans.	✓	1. Governance mechanism and HR systems for SC are fully established, approved and incorporated into the wider public service system. HR for SCM plans implemented with ~75% of planned activities completed.	✓	1. Advanced governance mechanism consistently enables pro-active HR planning; fit for purpose competent workforce is in place at all times; ~90% of planned activities completed	
2. Documented organisational structure that specifies all key SC positions is available; job roles and responsibilities are clearly defined; Comprehensive Job Descriptions for all positions are available.	✓	2. Organisational structure and JDs are documented, recorded and readily available from an authorised repository. Staffing policies, procedures and tools are available.	✓	2. All critical SC staff positions are filled in line with approved competency framework; Organisational structure adequately supports supply chain functions and requirements.	✓	2. ALL SC positions are fully integrated in the government civil service structure and have clear career paths and growth opportunities for all staff. Competitive reward system in place.	✓	2. Supply chain cadre is fully established with all positions filled and part of the national civil service structure that is fully funded by government; Job roles are consistently updated to reflect new and emerging technologies and government needs.	✓
3. A needs based approach to skills development is used to prioritise and implement in-service training and other mentoring efforts based on the SC competency framework	✓	3. All SC staff have up to date Job Descriptions (JD) linked to the relevant competency framework. Each staff member has a skills development plan that is being implemented.	✓	3. Organisation is benefiting from trained competent supply chain staff; holistic training and development solutions are being deployed and positively impacting programmes. Training plans are funded and more than 50% is implemented.	✓	3. Supply Chain skills development is central to the ministry/dept and integrated into annual plans. Staff development plans are consistently rolled out in line with established competency framework; ~75% of training plan is being implemented	✓	3. Staff development policies and plans consistently ensure staff have skills, knowledge and aptitudes necessary to perform supply chain roles effectively and independently. Staff consistently gain increased job satisfaction. ~90% of training plan is being implemented.	
4. Staff performance appraisal system and tools are in place but are basic and informal, staff have an understanding of the impact of supply chain management on programmes	✓	4. Staff performance appraisal system and tools are developed and approved; staff are trained on appraisal system and tools and are aware of the supply chain competencies required		4. Performance and appraisal system is imbedded in HR processes and regularly conducted; performance appraisals are linked to career progression and reward systems		4. Integrated performance and reward systems that are aligned with national systems are driving high staff productivity and performance. Regular investment in people to drive performance.		4. Advanced and highly adaptive performance and reward systems integrated within the national system are driving high performing supply chains and productivity. Continuously invests in people to drive performance.	
5. Occupational health and safety and other policies to safeguard staff are developed and in place; policies are disseminated and accessible to all staff	✓	5. Occupational health and safety and other policies to safeguard staff are implemented; resources and mechanisms to support staff interpret and understand polices are available; required tools and equipment is accessible by all staff.	✓	5. Mechanisms to ensure compliance with Occupational health, safety and other safeguarding policies are in place and being implemented; Regular budget available to implement documented policies. Required tools/equipment available and accessible.	✓	5. Regular trainings on health, safety and staff wellbeing are conducted and policies are regularly updated; Budget to implement Health and Safety Policy is consistently available; required tools and equipment is consistently available and accessible to staff.	✓	5. Occupational health and safety policies are fully integrated and aligned with operating procedures and consistently funded. Robust system in place for recording all workplace safety incidents and issues, with evidence of review and actions.	✓
6. A formal Coordinating Body/TWG for supply chain management is being established	✓	6. Formal Coordinating Body/TWG is established but not yet fully functional; Has formal written TOR and administrative framework)	✓	6. Coordinating Body/TWG is formally established, operational and sometimes influences national priorities in supply chain; drives improvements and contributes to key supply strategies and policy decisions	✓	6. The Coordinating Body/TWG is fully functional and independent; consistently drives national priorities, strategies and improvement initiatives; influences policy formulation/decisions	✓	6. Coordinating Body/TWG consistently provides thought leadership and drives transformational change across programmes and supply chains; leverages local and international partnerships to build capacity and foster innovation.	

1. ***Governance mechanisms and human resource (HR) systems for SCM are fully established, approved and incorporated into the wider public service system. HR for SCM plans is implemented with approximately 75 percent of planned activities completed.***

Level 4 ✓

Human resource planning in the SES sector is proactive in that all SCM positions are fully staffed. These positions can be adjusted according to the annual approved MoF staffing table. This staffing table is also the basis for systematic assessments of human resources for SCM.

The government introduced SCM positions into the structures of the responsible governmental organizations; in particular, positions for procurement *(stock controller,* referred to in Uzbekistan as a *mostly material accountant)*, supply *(management or logistics department),* and storage *(storage specialist or warehouse manager)*. These positions in the Sanitary-Epidemiological Welfare and Public Health Service of the Republic of Uzbekistan and regional SES organizations are fully funded by the government.

The government allocates funds for SCM staff according to approved staffing tables that the MoF prepares annually. The staffing tables are developed by the relevant agencies and agreed with the MoH. This mechanism was adopted by MoF Order No. 74 dated November 14, 2014, "On Approval of the Regulations on the Procedure for Compiling, Approving, and Registering Cost Estimates and Staff Tables of Budgetary Organizations and Recipients of Budgetary Funds"[4] and the fixed Budget Code[5] of the Republic of Uzbekistan *(Section 104)*. This regulatory document applies to all levels of government and relevant agencies.

Funding mechanisms and plans were integrated in 2020. Training and capacity-building plans are approved annually.

2. ***Supply chain staffing is fully established with all positions filled and part of the national civil service structure that is fully funded by government; Job roles are consistently updated to reflect new and emerging technologies and government needs.*** All SCM leadership positions in the central SES and its regional branches are fully staffed, and their job roles are approved by national or regional directors. Job roles and job functional duties can be changed or updated according to new or emerging government needs.

Level 5 ✓

To coordinate SCM, appropriate manager positions that have been established at the national level include the deputy head of the SES (for COVID-19 prevention).

SCM positions have been included in the national and regional civil service structure. These include relevant SCM staff positions for procurement *(mostly material accountant)*, supply *(management or logistics department),* and storage *(storage specialist or warehouse manager)*. Opportunities for growth could be reflected in promotion from the regional level to the national level.

All SCM staff positions are filled according to the organizational structure and staffing tables. The organizational structure designates two management team positions that are responsible for SCM *(deputy head of the SES* and *head of the SES Investment Department)*.

[4] "On Approval of the Regulations on the Procedure for Compiling, Approving and Registering Cost Estimates and Staffing Tables of Budgetary Organizations and Recipients of Budgetary Fund," Order of the Minister of Finance of the Republic of Uzbekistan, Order No. 74, dated November 14, 2014, https://lex.uz/docs/2520438.

[5] "Budget Code of the Republic of Uzbekistan," amended December 28, 2021, https://lex.uz/docs/2304140.

The organizational structure that specifies all key SCM positions is documented in the decree of the Republic of Uzbekistan No. 4790 dated July 27, 2020.[6] This decree established roles and responsibilities at the national and regional levels. These job positions are fully staffed with specialists, and comprehensive functional responsibilities of staff are fully documented and approved by national or regional directors.

Furthermore, the SES has two separate departments:

- *Department for strengthening the material and technical base and attracting investments.* This department is responsible for significant and international procurements.
- *Marketing and logistics department.* This department is tasked with the receipt and transfer of goods and for customs clearance of goods received through humanitarian channels, as well as those purchased at the state's expense. This department, in parallel with the above-mentioned department, is engaged in the collection and analysis of market data.

3. ***Supply chain skill development is central to the ministry or department and integrated into annual plans. Staff development plans are consistently rolled out in line with an established competency framework; approximately 75 percent of the training plan is being implemented.*** Regulatory documents and workforce development plans consistently ensure that employees have the skills, knowledge, and capabilities necessary to effectively and independently perform their SCM responsibilities.

Level 4 ✓

All national-level SCM staff undergo annual advanced training from national and international training institutions such as the National Agency for Project Management under the President of the Republic of Uzbekistan, the National Training Center for Government Procurements (Dxarid), the International Training Centre of the International Labor Organization, and the Chartered Institute of Procurement and Supply. However, national Dxarid trainings for procurement specialists are funded within government funds. Professional development and training of SCM specialists are mostly funded by international organizations; however, national Dxarid trainings for procurement specialists are funded by government funds.

Relevant authorities have developed and integrated functional responsibilities for SCM specialists at the national and regional levels. For example, in 2021 the central SES developed and approved functional responsibilities for national SCM specialists, and regional branches did the same for regional SCM specialists. Development and approval of functional responsibilities for each employee, regardless of the position, is a mandatory requirement under the Labor Code of the Republic of Uzbekistan.

4. ***A staff performance appraisal system and tools are in place but are basic and informal; staff have an understanding of the impact of SCM on programs.*** Advanced and highly adaptive performance and reward systems are integrated into the national system as reflected in national funding mechanisms and MoF regulatory documents. Moreover, some SCM positions (warehouse specialists/managers) receive additional funding for exceptional tasks or overtime.

Level 1 ✓

Regular investments are carried out by providing the SCM staff with rewards and state awards in material and monetary terms, which stimulates productivity and performance. Reward

[6] "On Measures to Organize the Activities of the Service for Sanitary and Epidemiological Welfare and Public Health of the Republic of Uzbekistan," Order of the President of the Republic of Uzbekistan, No. PP-4790, dated July 27, 2020, https://lex.uz/docs/4914450.

systems are fully implemented in the government funding system and included in the annually approved cost estimate of SES, including regional branches. Rewards are reflected on a quarterly basis. The decision to continue employees' activities for the next year is based on the annual assessment of national- and regional-level SCM staff.

Relevant agencies develop tools for assessment of staff performance and introduce them at the national and regional levels. SCM specialists are certified and undergo advanced training annually. National- and regional-level SCM programs for 2018-2022 were developed in 2018.

- **For Prevention:** Remuneration in the SES is set quarterly and depends on the receipt of funds from the services provided and the allocation of funds from MoF. It means that the reward system is not stable.
- **For Treatment:** Since MoH and SUE "Uzmedimpeks" carry out the procurement of medicines, the remuneration system depends on the desire of the head of the facility. That is, the head of the facility determines different amounts of remuneration depending on the quality and effectiveness of procurements, regardless of receipts and allocation of funds from the state budget, since these organizations have accumulated funds on their accounts on an ongoing basis.

All national- and regional-level procurement specialists are trained and certified by Dxarid, which is a single authorized public procurement platform, and logistics specialists are aware of national regulatory guidelines and officially authorized to handle logistical issues.

5. ***Occupational health and safety policies are fully integrated and aligned with operating procedures and consistently funded. A robust system is in place for recording all workplace safety incidents and issues, with evidence of review and actions.*** Health and safety regulations are fully integrated, comply with operational procedures, and are continuously funded from the state budget.

Level 5 ✓

To ensure the protection of all employees, the Cabinet of Ministers has introduced occupational safety and health legislation at all levels, including national policies,[7] which are disseminated and accessible to all staff. According to the national policies, all national and regional government agencies have adopted individual regulations and guidelines. Government agencies are not legally allowed to carry out activities without adopting such policies.

Each building has the necessary equipment to comply with technical safety measures. Furthermore, for each building and office rooms responsible persons have been appointed to ensure compliance with technical safety measures. Other measures for labor protection of employees are carried out by the appointed specialist of the government/relevant agency (specialist of the Trade Union in Uzbekistan, *специалист профсоюза)*.

Mechanisms to ensure compliance with occupational health, safety, and other safeguarding policies are in place. The Ministry of Employment and Labor Relations of the Republic of Uzbekistan implements policies and oversees labor-related issues, and the Ministry of Emergency Situations of the Republic of Uzbekistan implements policies for safety and other safeguarding responsibilities and oversees related issues. Assessments and monitoring results

[7] "Law of the Republic of Uzbekistan About Labor Safety, Order of the President of the Republic of Uzbekistan, No. 839-XII, dated May 6, 1993, https://lex.uz/acts/97258; "Labor Code of the Republic of Uzbekistan," accessed March 23, 2022, https://lex.uz/docs/145261.

are well documented. SES carries out annual trainings on health, safety, and staff well-being and handles related issues.

All central locations and regional branches assessed are equipped with the necessary equipment and medical products to ensure the safety and well-being of staff.

6. ***The Coordinating Body/Technical Working Group is fully functional and independent; consistently drives national priorities, strategies, and improvement initiatives; and influences policy formulation/decisions.*** Established coordinating bodies provide consistent intellectual leadership, consider scientific and project ideas, organize professional discussions of proposed investment projects/SCM issues and decisions, and assist the field leadership in the development of technical and economic calculations.

Level 4 ✓

- **For Prevention (SES):** According to the Order of the MoH No. 506 dated October 12, 2005, all relevant government agencies (national and regional) established a formal coordination body called a standing commission *(Постоянно действующая комиссия)* for managing procurement and supply processes. Coordination bodies participate in every procurement process, starting from the preparation and determination of needs, through the bidding and selection process, and delivery and monitoring of the use of medical and non-medical products. Executives and members of the commission sign off on and document all coordination stages.
- **For Treatment (MoH):** Coordination bodies called scientific and technical councils *(Научно технический совет)* manage procurement and supply processes, and expert councils *(Экспертный совет)* manage the financing/funding of procurement and supply. Scientific and technical councils are approved according to Government Decree No. 285 dated May 15, 2017, and MoH Order No. 311 dated June 13, 2017 and Cabinet of Ministers of the Republic of Uzbekistan Decree No. 14/1-524 dated June 20, 2017.

According to the coordination body's charter, this body must consider and approve all stages of the SCM process. The coordination body is involved in all processes: forecasting, quantification, procurement, receiving goods and delivering them to the appropriate institutions, and distributing them to the final beneficiaries. All stages of the process are documented by acts/protocols or by signing of the requisitions/purchase order or relevant official documents by the members of a coordination body. Without a decision from these coordination bodies, SCM processes cannot begin.

Data for Management and Analytics

We find that Data Management and Analytics scores poorly according to the assessment framework. The important gaps identified in the assessment describe an environment in which data are incomplete, spread across several sources, and usually available only after a significant time lag.

Supply chains require a continuous stream of quality data to support good decisions and enable good performance. Data needs often have three important dimensions: (i) quantity (the right amount of data elements); (ii) quality (the accuracy of the data), and (iii) speed (how quickly the data are available in a usable format).

Recommendations: To begin addressing the gaps identified in this section, the MoH and its partners should define the critical data needs for the supply chain. These could be split into

“data for routine decision making” (including data required for customer order processing and basic supply planning); “data required for medium to long-term planning” (including data required for annual forecasting and budgeting exercises) and “data required for audit and reporting purposes.” Building out the profile of data needs in this way can be an important first step in determining how to build on the existing data management practices in a targeted and efficient way.

More detailed findings on each component of Data Management and Analytics are contained in the figure below and the supporting text that follows.

Figure 5. Enabling Aspects: Data for Management and Analytics

Data Analytics

Level 1		Level 2		Level 3		Level 4		Level 5	
Country has limited data visibility and government is aware of the need to correct this situation.		**Country has identified gaps and weaknesses and is in the process of implementing the required interventions to enhance data visibility and management.**		**Country has visibility into supply and health indicators across all levels of the public system and initial capability to use this data to inform decisions.**		**Country has the required processes in place to transform supply chain and health data into actionable evidence, managing the programme in a holistic manner.**		**Country is capable of harnessing and mining data to support policy, strategic and tactical level decisions in a financially and technically independent manner.**	
1.Understands the need for assessing the landscape and capabilities of all information systems in place.	✓	1.An up to date assessment of the landscape and capabilities of existing information systems is completed, available or being developed.	✓	1.Government is able to track produce reports from the Logistics Management Information System	✓	1.Essential and quality SC data is collected and reported at relevant levels of SC, and feedback is regularly provided.	✓	1. A legal framework which regulates government data/systems/processes/ownership/transmission is in place and updated when required.	✓
2.Has prioritised improvement of Logistics Management Information System and use of data to manage the SC.		2. An improvement plan (based on an assessment) of the Logistics Management Information System and data use is developed and approved.		2.Data quality, availability and use are improving at all levels of the supply chain system.		2.Key Performance Indicators are monitored and management decisions are made timely to improve performance or take corrective action.		2.Government consistently uses data analytics to predict events and improve service quality, efficiency, productivity and performance.	
3.Managers are aware of how information can be harnessed to improve supply chain performance and decision making.	✓	3.A monitoring framework for implementation of Logistics Management Information System improvement plan is developed and approved.		3.The government is developing the capability to systematically analyse data across the whole system to draw conclusions that support management decision-making processes.		3.The government is developing capabilities to predict future events using data that is routinely and systematically collecting data from all levels.		3.Data exchange platforms are fully integrated; information is available seamlessly across organisations and expertly managed.	
4. Has basic general information available; limited view of what information is being captured or what is available.	✓	4. Accurate and up to date Information is regarded as critical; managers are developing strategies to develop data analytics capabilities to help manage supply chains.		4. Data and information guidelines are developed and approved but not fully enforced		4.Information is centralised and highly adaptable to changes in organization requirements; The organisation collaborates with others to share information for mutual benefit.		4.Information governance and quality programs are continuously applied & supported by senior management.	
5. Responsibilities relating to information management are in place but generally unstructured and assigned on a case by case basis.	✓	5. Information is available but not sufficiently shared across departments/agencies.		5.Government is able to determine the performance of the supply chain system (national /sub-national).		5.Information governance is embedded in the health system with consistent enforcement of standards and policies across the government.		5. Fully capable of implementing a variety of data analysis to support policy, strategic and tactical decisions.	
6. Data and information guidelines are available but are informal/localised or unstructured.	✓	6. Semi-formal information management guidelines in place, generally localised and enforced only in isolated cases. Formal guidelines being developed.	✓	6. Has developed a long-term Data Analytics/Data strategy which has clear roles and responsibilities.	✓	6.Govt has the capacity, resources and mechanisms to systematically harness and mine supply and health data to support evidence-driven supply chains.		6.Country has the capacity to measure the integrity and quality of reported data and efficiency of in-place information systems.	
7.Has access to some data but to a limited extent (supply and programme) reported across levels of the supply chain system.	✓	7.Capable of implementing basic data analysis to support decisions.	✓	7.Government is taking action on reported data through an established formal process and mechanism.		7.Roles, responsibilities, processes, and standards to support Data Analytics work are in place and utilized by all relevant staff across all levels of the public system.		7. Has allocated the required resources to be able to implement all Data analytics required interventions in a timely manner.	

1. ***A legal framework that regulates government data, systems, processes, ownership, and transmission is in place and updated when required.*** All managers (at national and regional levels) understand the need for and capabilities of all information systems.

Level 5 ✓

- **For Prevention (SES):** The SES has started developing an information monitoring system to monitor epidemiological, laboratory, and medical aspects (initial stages for COVID-19 measures), as well as the movement and availability of diagnostics in real time. This is part of the corporate network of the MoH. Development of this software was funded under a Korean International Cooperation Agency (KOICA) project called "Establishment of a national infectious disease response system."

- **For Treatment (MoH):** No information system to track procurement and the supply chain has been established. However, MoF has developed and integrated an automated system for budgetary organizations in Uzbekistan called "UzASBO" (described in more detail below) in all MoH facilities.

2. ***Has prioritized improvement of the Logistics Management Information System and use of data to manage the supply chain.*** An automated system has been introduced in all budget organizations in Uzbekistan. Use of this innovative, cloud-based system is mandatory. It has been fully operational during the last several years. All budget organizations in Uzbekistan are legally obligated to maintain the accounting of all material assets on this system. Since all procured goods are handed over to SUE "Uzmedimpeks," they are registered in the UzASBO system immediately upon receipt. This system will also record the distribution of goods to regional medical facilities under the MoH. The accounting of all material assets in UzASBO is a subject of rigorous monitoring by the state's inspecting bodies. The same mechanism is used in the SES.

Level 0

However, using this software (UzASBO) involves lag time based on entering historical data, for example: products that arrived and were cleared in January are credited to the balance based on a paper invoice in February. Data entry in UzASBO could occur several months later.

Moreover, the UzASBO software does not allow personnel to clearly trace the movement of medicines and non-medical products starting from their arrival at the central warehouse and their distribution to the regions.

3. ***Managers are aware of how information can be harnessed to improve supply chain performance and decision making***. The UzASBO system is used to determine stock levels in the central and regional warehouses, and this is the main source of data for making decisions on SCM. All managers (at national and regional levels) apply supply chain information in practice and in decision-making, as well as in procurement of medical and non-medical goods. In particular, managers carry out procurement of medical and non-medical products based on information about the stock levels of goods in the central or regional warehouses and based on forecasts of demand. This process is subject to rigorous monitoring by state inspection bodies.

Level 1 ✓

At the same time, most inventory information (90 percent) is collected by manual counting, and decisions are made without reliable sources of information or evidence.

4. ***Has basic general information available; limited view of what information is being captured or what is available***. Information

Level 1 ✓

that is generated or forecasts that are prepared in most cases are fragmented at all levels (national and regional) due to the variety of specialties in the health care system (e.g., maternity and pediatrics, oncology, endocrinology, trauma medicine, cardiology, cardiac surgery, emergency medicine, hemodialysis service, primary care) due to lack of qualifications and lack of experience of employees at the regional level. Most procurements take place at the national level, which creates a heavy workload for the SUE “Uzmedimpeks” (in the case of the MoH) and SES. Although the MoH has established a department for control and monitoring of the provision of drugs and medical products, there is also no place for summary information at the central or regional level. SES faces the same situation: although the SES has qualified staff and two departments responsible for SCM, there is also no place for summarized data at the central level.

National-level supply chain data are not available in one central, easy-to-access repository. Managers wanting to develop this national level picture need to curate data from several sources, both paper-based and electronic. In both the MoH and SES, managers are aware that accurate, up-to-date information is critical, because according to information received from the regional level, national-level agencies make decisions and estimate budget forecasts that the MoF or Cabinet Ministries of the Republic of Uzbekistan will approve. Accurate information is subject to rigorous monitoring by the state inspecting bodies, including the Chamber of Accounts or Prosecutor's Office.

5. ***Responsibilities relating to information management are in place but generally unstructured and assigned on a case-by-case basis.*** SCM-related information can be obtained and generated at the national and regional levels. However, this process is manual and is carried out on a case-by-case basis, which takes time and requires manual checking of routine data entry. Information can be generated by and received from some departments or agencies, but information is not routinely disseminated to other departments or agencies for general review or familiarization.

Level 1 ✓

6. ***Has developed a long-term data analytics/data strategy that has clear roles and responsibilities.*** Standardized information forms, reporting forms, guidelines, and manuals are available in each relevant agency, but these are not integrated by MoH and SES at the national level.

Level 3 ✓

7. ***Capable of implementing basic data analysis to support decisions.*** Each level of vertical management has specific access to information; in particular, information received from different sources is not disseminated to other levels of vertical management. Agencies are capable of generating, providing, and analyzing data.

Level 2 ✓

- **For Prevention (SES)**: Information is available at the central level. However, information available at the national level is not accessible for regions.
- **For Treatment (MoH):** Information is used for official purposes, which eliminates the possibility of creating a single picture of the procurement or supply of medicines. There is no information on which medicines have been procured or national or regional stock levels of medicines.

Systems Design

We find that Systems Design scores poorly according to the assessment framework. According to interviewees' feedback, some recent analysis conducted on supply chain system bottlenecks has not yet led to comprehensive redesign.

Supply chain system design starts from understanding the needs of the "users" or "customers." These needs are usually expressed in terms of the product range required for different types of customers, the service frequency required, and other important elements such as environmental controls during distribution and information sharing with customers. The process of system design will then determine how to provide the service required to all customers at an acceptable cost.

Recommendations: The MoH and its partners now have an opportunity to review the bottlenecks analysis and use those insights to plan and implement an improved system design. We also recommend that the supply chain performance review process described in the executive summary be used as another method of identifying and resolving constraints in system design.

More detailed findings on each component of Systems Design are contained in the figure below and the supporting text that follows.

Figure 6. Enabling Aspects: Systems Design

Systems Design

Level 1		Level 2		Level 3		Level 4		Level 5	
In-country preparation (baseline), advocacy to stakeholders and initial analysis of SC bottlenecks completed		**Govt uses SC analysis to identify and prioritize system design opportunities for improvements in equity, efficiency, and performance**		**Govt, with evidence from system design analysis and best practices, implements changes to SC systems (in parts of the country)**		**Govt evaluates, expands or modifies SC design, country-wide including integrating supply chains across programmes/products and functions**		**Govt routinely reflects on SC design as part of multi-year continuous planning process and operates a fully integrated supply chain that leverages all govt resources and strengths**	
1. Government or its respective agencies is introducing and advocating for the adoption of system design approach to optimise supply chains; developing or identifying system design tools and guidance	✓	1. Tools, methods and processes finalized and adapted for system design analysis. Staff is fully trained in the use of system design tools/methods		1. Government has secured buy-in from all relevant stakeholders and got approvals and funding at the relevant level to implement new costed system/network design options.		1. Government is scaling up implementation of systems design recommendations and regularly identifying opportunities for service and performance improvement		1. Systems design concept is fully integrated into the government system and at the centre of government-wide supply chain continuous improvement programmes/optimisation	
2. Government has identified and documented specific objectives and desired benefits from systems/network redesign and how it could support overall program goals	✓	2. System Design analysis including baseline and alternative scenarios are conducted with respect to structure, network, distribution and service delivery using appropriate supply chain, programmatic or other appropriate indicators'	✓	2. Government has started initial implementation of prioritized system design options/scenarios, consistently captured and monitored		2. Government systematically reviews outputs/performance of selected design options and makes the requisite changes and adjustments to improve performance		2. National and sub-national stakeholders consistently use systems design tools to improve and transform their supply chains; tools are continuously updated and technology enabled; Robust knowledge transfer in place	
3. Government is conducting initial bottleneck and root cause analysis of their SC structure, network, distribution, and service delivery functions and identifying potential system design engagements/options	✓	3. Outputs/results of systems design analysis are documented, approved and shared (includes baseline, alternative options, indicative costs and recommendations)	✓	3. Government is reviewing and implementing outputs of selected design option(s) and capturing and recording performance data to monitor progress, benefits realisation and making necessary adjustments		3. The systems design concept and practice is embedded in government system and consistently applied to improve supply chain and programmatic performance/outcomes		3. Government at national/sub-national proactively predicts and plans for future system/network change needs and requirements, including external factors such as disruptions	
4. Outputs/results of the bottleneck analysis are available/approved and highlight the current state of the supply chain including alternative systems design options.	✓	4. Government has reviewed systems design analysis results and recommendations; Redesign options are identified and prioritized for implementation.		4. Government uses and incorporates implementation findings into management reviews and decision making processes		4. New system/distribution networks are contributing to effective service delivery, realizing efficiency gains and fulfilling needs of programmes/govt objectives		4. Supply chain systems/distribution networks are highly adaptable to internal and external factors and effectively contribute to service delivery across all levels and areas	
5. Government has secured buy-in from key senior stakeholders in government to conduct systems design analysis.	✓	5. Government has finalized costed implementation roadmap for prioritized redesign options including implementation protocol, resources, funding, timelines, monitoring and evaluation		5. Using outputs from implementation, government and other stakeholders identify opportunities for optimisation across different national supply chains.		5. Government uses and incorporates implementation findings into routine management reviews and decisions, including final outputs of cross-supply chain system design scenarios such as integration across products or other functions		5. Supply chain system directly and consistently contributes to integrated multi-year national supply chain across forecasting, planning, resourcing	

1. ***Government or its respective agencies are introducing and advocating for the adoption of a system design approach to optimize supply chains; and developing or identifying system design tools and guidance.*** Level 1 ✓ SCM is handled in a centralized manner at the national level. Procurement and supply of medicines or medical and non-medical products by any funding sources including the state budget and international organizations (at the national level) reflect a systematic approach to optimize supply chains. However, regional-level facilities are allowed to carry out low-value procurements of medicines or medical and non-medical products when there is a need for a particular product during the fiscal period in accordance with the national law on public procurement and instructions[8] for budget/government customers. The government develops and approves SCM guidance manuals.[9]

2. ***System design analysis including baseline and alternative scenarios is conducted with respect to structure, network, distribution and service delivery using appropriate supply chain, programmatic or other appropriate indicators.*** Level 2 ✓ The Cabinet of Ministers of the Republic of Uzbekistan documents the analysis of SCM systems and their impact on relevant national programs and plans. Analytical materials are considered at meetings at the MoH and SES. All meetings are documented, and the proceedings are signed by the Minister of the MoH or relevant agency head.

3. ***Outputs/results of systems design analysis are documented, approved and shared (includes baseline, alternative options, indicative costs and recommendations).*** Level 2 ✓ Government organizations routinely carry out initial bottleneck and root cause analysis and make future plans based on discussions and recommendations.

4. ***Outputs/results of the bottleneck analysis are available/approved and highlight the current state of the supply chain including alternative systems design options.*** Level 1 ✓ Interviewees indicated that international experts have developed an appropriate report detailing the state of the SCM, and it is available at any level in each organization. However, bottleneck analysis has been carried out manually and case by case. Also, in most cases (80 to 90 percent) this process is based on oral discussions.

5. ***Government has secured buy-in from key senior stakeholders in government to conduct systems design analysis.*** Level 1 ✓ The Cabinet of Ministers of the Republic of Uzbekistan supports the analysis of systems design. The Cabinet of Ministers periodically sends its analysis and analytical materials to the vertical management for implementing measures and resolving existing bottlenecks.

[8] "User Instructions: Special Information Portal for Public Procurement," Ministry of Finance of the Republic of Uzbekistan, accessed March 23, 2022, http://xarid.uz/instruction.

[9] "Law of the Republic of Uzbekistan," No. 3PY-684, dated April 22, 2021, https://lex.uz/pdfs/5382983.

Financing and Domestic Resource Mobilization

We find that Financing and Domestic Resource Mobilization scores well according to the assessment framework.

Recommendations: The important gaps to address are related to timing of budget releases for supply chain related costs, completeness of budget releases in a financial year, and the flexibility with which the funds may be used. The MoH and its partners should consider timing budget releases for more efficient procurement, forecasting shortages of essential commodities, and allowing more flexible use of funds.

More detailed findings on each component of Financing and Domestic Resource Mobilization are contained in the figure below and the supporting text that follows.

Figure 7. Enabling Aspects: Financing and Domestic Resource Mobilization

Financing and Domestic Resource Mobilisation

Level 1		Level 2		Level 3		Level 4		Level 5	
Donor funded, financial needs are articulated and paid for primarily by donors or through international loans and credits.		**Country episodically avails resources but these are not based upon forecasted or planned needs.**		**Needs are planned / forecasted, with nominal budget attached. The budget is executed in an inconsistent manner, often requiring donors to step-in and gap fill.**		**Transition from donor support, with occasional mismatch in budgeted need and cash execution. Challenges in PFM might still occur, limited / reduced dependence on Partners.**		**Sufficient financial resources to meet forecasted needs, with good practices in PFM and limited to no dependence on Partners. Budgets are executed on generally on time with only exceptional cases of cash flow timing issues.**	
1. Government is financing some of the supply chain needs from domestic revenues, but at a relatively small scale	✓	1.National government is financing >40% of supply chain needs from domestic revenues	✓	1.>60% of budgetary requirements for supply chain are financed through domestic revenues.	✓	1. >70% of supply chain budgetary requirements are financed by the government from domestic revenues.		1. National government meets >90% of its budget requirements for supply chain from domestic revenues.	
2.Government has systems & processes to determine resource requirements for supply chain in some programme areas.	✓	2.Government/Ministry is defining resource requirements for the supply chain management.	✓	2.Resource requirements for supply chain are defined and documented by the government with minimal support from external partners - tools and processes in place.	✓	2. Government is independently defining supply chain resource needs and to an extent meeting its financing obligations with partners and stakeholders.	✓	2. Planning and budgeting processes are integrated and written into national policies and processes, government proactively defining needs independently.	✓
3.Government makes ad hoc adjustments for supply chain financing to cater for wide margins between revenue and forecasts.	✓	3.Government/Ministry is taking steps to bridge the gap between revenue and forecast to improve supply chain financing.	✓	3.Funding envelope from government for supply chain management is known. Gaps in funding are known and sometimes filled by external support.	✓	3. Resource needs are defined and financial envelope for the sector is known and there are planned adjustments.	✓	3. Actual budgetary requirements are known and proactively communicated to the other relevant departments/ministries.	✓
4. Domestic revenue sources are available but unstable and fragmented (e.g. Partner/donor funds not integrated with domestic resources)	✓	4.Ministry is taking steps to pool domestic and external funds and developing systems and procedures to enable movement of funds across budget lines.	✓	4.Partner funds are partly integrated with domestic resources - Structures and processes in place for establishing SWAp for health supply financing	✓	4. Sector-Wide Approach to supply chain financing is developed, implemented and monitored across the public health sector - partner funds are largely integrated with domestic resources	✓	4. Routinely generates sufficient domestic resources to achieve health sector supply chain objectives within its macroeconomic and fiscal context. All revenue streams fully integrated into government system	
5.Public Finance Management system is in place although rigid and unable to redirect resources from other budget lines to areas of need.	✓	5. Government/Ministry is taking steps to consolidate revenue streams and developing processes and procedures to enable reallocation of funds	✓	5.Public Finance Management systems allow redirection of resources in selected programmes (rules for reallocation in place).		5. PFM systems allow redirection of resources/cross subsidization for all programmes (rules for re allocation in place).		5.PFM system is highly adaptable and able to redirect resources where interventions and services are needed.	
6.Budget for supply chain management is available but not as a distinct line item - SCM budget integrated within other budget lines.	✓	6.Developing strategies to improve spending efficiency to attain cost savings across all revenue streams.	✓	6. Co-financing/financing obligations are met, but not always on time. Funding gaps for supply chain are sometimes filled by partners.	✓	6.All funds are pooled to maximise efficiency and cost savings, implementing cost saving initiatives.		6.Consistently meets its financing obligations on time and continuously attains cost-savings which are used to fund additional programmes/target groups.	
7. Government acknowledges national policies when formulating budgets, but does not make formal enforceable linkages.	✓	7.Establishing mechanisms to formerly link national policies with budget formulation.	✓	7.Budget formulation is linked to existing national policy, partial alignment between PFM and Health Financing.	✓	7.Budget formulation is linked to existing national policy and there is strong alignment between PFM and Health Financing.		7.Public Finance Management and Health Financing are consistently closely aligned and integrated.	

1. ***More than 70 percent of the supply chain's budgetary requirements are financed by the government from domestic revenues.*** Government is financing not only procurement of medicines and medical and non-medical products but also supply expenses (e.g., freight, transportation, insurance, storage, fees of procurement agents, and other associated costs). Funding of all SCM expenses is reflected in invoices *(*called *счет-фактура)* with a detailed breakdown showing the commodity part of the costs and associated costs. National funding covers approximately 60-70 percent of procurement of medicines and medical and non-medical products including supply chain expenses.

Level 3 ✓

2. ***Planning and budgeting processes are integrated and written into national policies and processes; government is proactively defining needs independently.*** Both SES and MoH have introduced planning and budgeting processes. However, systems and processes are carried out manually and on a case-by-case basis. This process depends on the approach of the Cabinet of Ministers/MoF and MoH. There is no systematic approach based on analysis. Integrated processes are reflected in relevant government decrees, which were adopted as a national program.

Level 5 ✓

Working groups and a coordination body identify resource requirements for SCM as follows:

- **For SES –** "Постоянно действующая комиссия (standing commission)".
- **For MoH –** "Научно технический совет (scientific and technical council)" and "Экспертный совет (expert council)".

3. ***Actual budgetary requirements are known and proactively communicated to the other relevant departments/ministries.*** Government executive bodies represented by the MoF do not make special adjustments to supply chain financing, as financing plans are approved at the beginning of the year and remain unchanged. At the same time, government agencies are obliged to meet their SCM expenses under the approved budget parameters. Any discrepancies between approved procurement budgets and actual costs are prohibited.

Level 5 ✓

MoF allows ad-hoc adjustments for SCM through providing a justification to MoF and through forecasting, quantification, and budgeting (F&Q&B). This process is allowed only for procurement of COVID-19 related products.

In SES and MoH, the MoF, based on analysis of the procurement expenses for medical and non-medical products, is optimizing SCM using saved funds to achieve high value for money. MoH and SES differ in their handling of financing plans. SES carries out systematic analysis of SCM, researching the best prices for and quality of products. MoH, however, implements procurement based on a tender and does not perform additional market analysis, which indicates the lack of analysis for optimization.

4. ***A sector-wide approach to supply chain financing is developed, implemented and monitored across the public health sector—partner funds are largely integrated with domestic resources.*** Domestic funds are available but summary information is only available to the MoF. There is no clear, structured system of income consolidation by relevant government agencies. Domestic funds are available but are fragmented among several national programs. For all areas of the health care system, state programs have been developed and approved, reflecting a

Level 4 ✓

clear breakdown of budget funds by activities. However, these programs are separate. This approach is the most suitable and justified method, since the health care system is complex.

Because the government fully finances procurement of all types of essential medicines *(MoH is the responsible body)*, several national programs reflect only domestic funds.

Also, in 2020 the GoU approved the national budget for 2021:

Table 2. Excerpt from Uzbekistan's National Budget for 2021

No.	Ministry of Health	Amount	
		In UZS	In USD (USD 1.0 ≈ UZS 10,500.0)
GRAND TOTAL, *including*		3,317,491,600,000.0	315,951,580.95
	Development program costs	1,010,190,000,000.00	96,208,571.43
	Costs associated with vaccination of children	198,600,000,000.00	18,914,285.71
	Expenses for further improvement of methods of diagnosis, prevention and treatment of infectious diseases, including viral hepatitis	14,180,000,000.00	1,350,476.19
	Expenses for early detection of congenital and hereditary diseases in children	39,254,000,000.00	3,738,476.19
	Expenditures on improving cancer care for the population and further development of oncological services	61,682,000,000.00	5,874,476.19
	The cost of financing measures to counter the spread of disease caused by the human immunodeficiency virus	90,883,000,000.00	8,655,523.81
	Costs of providing kidney care and hemodialysis	137,780,000,000.00	13,121,904.76
	Cochlear implantation surgery in children with sensorineural deafness or hearing loss	27,824,300,000.00	2,649,933.33
	Costs of providing state medical organizations and the population of the Republic with medicines and medical products	17,282,000,000.00	1,645,904.76
	Costs of providing endocrinological care to the population	25,830,000,000.00	2,460,000.00
	Expenses for the provision of medical and social assistance to children with rare and other hereditary and genetic diseases	37,206,800,000.00	3,543,504.76
	Expenses for improving the quality of medical care provided to women of reproductive age, pregnant women and children	4,410,000,000.00	420,000.00
	The cost of funding large-scale advocacy on nutrition and healthy lifestyles, including the preparation of handouts for the public and health workers, as well as advertising in the media and social networks	28,870,000,000.00	2,749,523.81
	Costs of testing new models of health services delivery and health financing through the introduction of the state health insurance system on an experimental basis	7,700,000,000.00	733,333.33
	Spending on ensuring public health by further improving the efficiency of medical prevention	2,000,000,000.00	190,476.19

No.	Ministry of Health	Amount	
		In UZS	In USD (USD 1.0 ≈ UZS 10,500.0)
	Costs associated with the introduction of innovations in the operation of primary health care institutions	20,000,000,000.00	1,904,761.90
	Spending on health care and preserving the gene pool of the population within the framework of the Aral Sea regional development program	14,000,000,000.00	1,333,333.33
	Costs of combating the spread of tuberculosis and nonspecific lung diseases	24,690,000,000.00	2,351,428.57
	Expenses for the development of hematology and transfusion services in the Republic of Uzbekistan and further support for people suffering from hematological and intractable diseases	91,398,000,000.00	8,704,571.43
	Expenses for the widespread introduction of the e-health system, the creation of a complex of information systems and databases integrated on the basis of uniform national standards	28,000,000,000.00	2,666,666.67
	Costs for the development of donation of blood and its components	3,600,000,000.00	342,857.14
	Costs of attracting qualified foreign medical specialists	6,600,000,000.00	628,571.43
	Costs of combating influenza and severe complications	2,400,000,000.00	228,571.43
	Expenses of the fund to promote the recovery of persons suffering from hematological and intractable diseases	126,000,000,000.00	12,000,000.00
	Capital investments in design, construction (reconstruction) and equipment of facilities	1,297,111,500,000.00	123,534,428.57

Source: "National Law on the State Budget of the Republic of Uzbekistan for 2021," No. ZRU-657, dated December 25, 2020, https://lex.uz/docs/5186047.

5. ***Government is taking steps to consolidate revenue streams and developing processes and procedures to enable reallocation of funds.*** The MoF is taking steps to redirect funds as much as possible to more effective activities or programs. However, the MoF implements this procedure manually and case-by-case. Redirecting government funds from other budget lines to another line is not possible. Expenditure plans approved at the beginning of the year must be strictly followed. Mechanisms or processes for redirecting state budget funds are not being practiced and not codified in legislation. Meanwhile, saved or unused government funds are not eligible for use in the following year due to the closure of the fiscal year.

Level 2 ✓

6. ***Co-financing/financing obligations are met, but not always on time. Funding gaps for the supply chain are sometimes filled by partners.*** Most activities are based on co-financing and technical assistance. MoF tries to fulfill its obligations to donors, as donors are monitoring the implementation process and funding their activities based on both sides' fulfillment of obligations. Pooling of funds

Level 3 ✓

leads to significant cost savings and efficiency in procurement of medicines and medical and non-medical products due to the increased volume of procurement and unification of product items.

7. ***Budget formulation is linked to existing national policy; there is partial alignment between PFM (SCM) and Health Financing.*** Annual budget formulation and approval of annual cost estimates are linked to approved and introduced national programs and plans. Within the framework of developing the annual budget, the MoF conducts an inventory of all approved state programs and plans. Filtered data are included in the annual budget document, which the GoU subsequently approves. Government has approved and adopted national policies that indicate the budget for several activities. However, approved policies are fragmented within several areas of the SCM system, which indicates a lack of unified policies and programs in the health sector.

Level 3 ✓

Policies and Regulatory Frameworks

We find that Policies and Regulatory Frameworks has a mixed score according to the assessment framework. Some important policies and guidelines are not in place, while others are in place but not fully implemented. Other policies and regulations may be contravened by other, connected policies and regulations.

Recommendation: Developing a full set of supply chain SOPs, as described earlier in this report, will help the MoH and its partners to resolve important missing policy areas and highlight inconsistencies and contradictions between different regulations. Please refer to Section 5 for additional details.

More detailed findings on each component of Policies and Regulatory Frameworks are contained in the figure below and the supporting text that follows.

Figure 8. Enabling Aspects: Policies and Regulatory Frameworks

Policy and Regulatory Frameworks

Level 1		Level 2		Level 3		Level 4		Level 5	
Need for strategic plans, policies and regulatory frameworks are acknowledged and currently being developed. General guidelines defined.		**A review of existing policies and regulatory frameworks is conducted and gaps identified. Some elements of regulatory system exists.**		**Strategic plans, policies and regulatory frameworks are defined, developed and approved. Legal framework in place and being implemented. Evolving regulatory system.**		**Strategic plans and policies are being implemented, activities derived from strategy included in workplan are funded.Cross programme and cross sector policy alignment in place. Stable well functioning integrated regulatory system.**		**Understanding of needs and strategic direction across govt. Strategies aligned with wider govt policies. Regulatory system at advanced level performane with continous improvement.**	
1. Basic policies & regulations regarding public supply chains are in place but insufficient, fragmented or outdated to meet current needs.	✓	1. Evaluations and reviews of existing policies and regulatory framework impacting public supply chains are conducted. Reports with recommendations and roadmap to address gaps developed & available.	✓	1. Relevant policies and regulations that support supply chain management are developed, in place and communicated across all supply chain tiers. A long term strategic plan exist that incorporates public supply chain policy and regulatory interventions	✓	1. Relevant national supply chain strategic plan is consistently applied across all relevant areas of the supply chain. Annual work plans across different supply chain levels are being monitored against strategic outcome targets		1. Policy and regulatory frameworks are effectively supporting and enabling the advancement of supply chain management through the implementation and monitoring of national supply chain strategic plans. At least 80% of the strategic outcome targets are being met annually	
2. Government acknowledges the need to continuously review existing guidelines, policies, strategies, or laws.	✓	2. The government has initiated the process of developing/updating policies and regulatory frameworks that will guide national supply chains.		2. ~50% of strategies, policies and regulations are documented and being applied, enforced and monitored across all areas the supply chain		2. ~70% of strategies, policies and regulations are documented being applied, enforced and monitored across all areas the supply chain		2. All supply chain strategies are consistently aligned with up to date national policies across different areas and functions of government	
3. Basic legislative and regulatory framework in place but not achieving the desired standards/outcomes	✓	3. Stakeholders are provided with sufficient information to understand the reasoning behind the policy and regulatory review; Gov advocates for stakeholder engagement in the review of policy and regulation		3. Mechanisms for conducting regular policy review to ensure achievement of desired outcomes are in place and implemented. Policy lifecycle management developed and approved		3. All policies, laws and regulations are validated, published and easily accessible to the public at no cost. Policy and regulatory frameworks consistently achieving desired outcomes		3. Policies are fully aligned across all government functions and mutually re-enforcing. Technology is used to support the policy framework and consistently achieving desired objectives.	
4. Policies and regulations in place but stand alone and not aligned with other government wide policies/regulations	✓	4. Stakeholders are taking steps to identify dependencies and interrelationships between government policies and regulations	✓	4. Policies and regulatory frameworks to guide the national supply chains are aligned and include dependencies and interrelationships with other government-wide policies		4. Policies and regulatory frameworks for national public health supply chain are being implemented and have mechanisms for monitoring internal and external factors that may require policy changes.		4. Policy and regulatory frameworks aggregates and reconciles multiple policies across government and has robust monitoring and control system.	
5. Mechanisms for ensuring policy and regulatory compliance are in place but informal and fragmented	✓	5. Legislative and non legislative compliance tools, guidance and mechanisms are being developed; compliance and enforcement strategy being developed	✓	5. Compliance mechanisms are developed, published and being used through a validated legal framework; Compliance and enforcement strategy is being applied.		5. Compliance and enforcement strategy is fully applied; regulatory compliance is monitored, policy and regulatory frameworks are attaining ~70% of the desired outcomes		5. Policy and regulatory compliance mechanisms are highly effective and adaptive; policy and regulatory frameworks are attaining ~90% of the desired outcomes	

1. ***Relevant policies and regulations that support SCM are developed, in place, and communicated across all supply chain tiers. A long-term strategic plan exists that incorporates public supply chain policy and regulatory interventions.*** Level 3 ✓ Guidelines for supply chains are in place but do not cover all aspects of supply processes, such as conditions and procedures for goods requiring special conditions such as cold storage. Also, procedures for custom clearance or storage of similar goods are not reflected in the abovementioned guidelines. Covered areas are very similar, and there is no single regulatory document. In most cases the supply chain is regulated by the Customs[10] and Tax[11] Codes of the Republic of Uzbekistan. In addition to these documents, the National Law on Public Procurement[12] applies to all levels of government management.

2. ***Government acknowledges the need to continuously review existing guidelines, policies, strategies, or laws.*** Level 1 ✓ Government revises and updates existing policies ; for example, the recent public procurement law was updated and introduced in 2021.

3. ***The basic legislative and regulatory framework is in place but not achieving the desired standards/outcomes.*** Level 1 ✓ Some adopted standards documents are not functional and are not implemented in practice. In most cases SCM takes place in custom and tax committees.

4. ***Stakeholders are taking steps to identify dependencies and interrelationships between government policies and regulations***. Level 2 ✓ Several ministries and agencies (MoF/ Ministry of Investment and Foreign Trade (MIFT)/Customs Committee/Tax Committee) have developed relevant policies. In some cases, adopted policies contradict each other due to the absence of proactive communication with other relevant departments, ministries, and agencies during policy drafting.

5. ***Legislative and non-legislative compliance tools, guidance, and mechanisms are being developed; a compliance and enforcement strategy is being developed.*** Level 2 ✓ There is no single independent coordinating body to control and monitor the implementation of the adopted regulatory documents. All supply regulations and policies are fragmented. All supply issues are separated, and it is necessary to contact different authorities to resolve issues. However, the MoH is the authorized body to coordinate and monitor the implementation of government health programs, particularly procurement and supply of medical products and medicines. Due to the workload of the MoH and the lack of specialized, skilled experts, constant monitoring is not carried out. Moreover, there is no SCM department in the structure of the MoH; accordingly, the functions and tasks of coordination and monitoring of the progress of procurement are assigned to the investment and financial departments. Information is obtained manually, often without supporting documents. This process applies only to the implementation of government programs (there is a different approach for financial indicators, where the UzASBO expenditure tracking program is fully functioning in the country).

[10] "Customs Code of the Republic of Uzbekistan," dated April 22, 2016, https://www.lex.uz/docs/5535133.
[11] "Tax Code of the Republic of Uzbekistan, A Common Part," dated January 1, 2020, https://lex.uz/ru/docs/4674893.
[12] "Law of the Republic of Uzbekistan," No. 3PY-684, dated April 22, 2021, https://lex.uz/pdfs/5382983.

Operational Aspects

Assessment of Needs

We find that Assessment of Needs has a mixed score according to the assessment framework. Forecasting processes are in place, and some useful tools have been developed.

Recommendation: The MoH and its partners may want to consider how to move all needs assessment activity to a faster cadence. Mature supply chains are characterized by very frequent assessment of needs and the timely translation of those assessments into product deliveries through a high frequency of deliveries of goods from suppliers to customers, either directly or via a central storage and distribution hub.

More detailed findings on each component of Assessment of Needs are contained in the figure below and the supporting text that follows.

Figure 9. Operational Aspects: Assessment of Needs

Definition of Need

Level 1		Level 2		Level 3		Level 4		Level 5	
Govt/agency unaware of quantities and supplies required, reactive to adhoc requisitions. Needs not formally defined.		**Process for defining quantity and types of products is developed and approved by govt. Tools and training deployed.**		**Process/methodology for defining quantity and types of products is developed and in-situ. Cross programme/partner consultation taking place to define needs.**		**Needs are consistently defined through use of data and evidence. Defined needs consistently meeting the needs of users.**		**Govt/agency continuously uses integrated approach in defining needs: end-use, inventory, market and programmatic data. Continuously improving to meet user needs**	
1. Forecasting is conducted, but processes are not standardized and performed on an ad hoc basis.	✓	1. An improvement plan is developed for the forecast processes of key products and agreed to with key stakeholders.		1. Differentiated forecasting methodologies are being applied according to product types and profiles.		1.Data sources for forecasting are reviewed at least once a year and improvements to routine data collection and forecasting methods are implemented as needed.		1.Forecast processes are advanced and automated, adapted to each product and triangulated with multiple types of high-quality data.	
2.An overview of the forecasting process is available for different types of commodities.	✓	2. A forecasting group, including participation from key stakeholders and relevant departments, is established to coordinate, standardize and validate the forecasts, and to lead and coordinate implementation of the improvement plan.	✓	2.Forecast calendar is available for all product groups, and aligned with budget cycle and grant application deadlines where applicable.	✓	2.Forecasts are prepared with the appropriate methodology for each product group, including the most appropriate data and triangulation with different data sources.	✓	2.Forecast performance is monitored and forecasts are updated regularly.	
3. Has basic awareness of the quantities and types of products required; no formal forecasting/quantification conducted.	✓	3. Forecasting and quantification processes and procedures are developed approved and in place.		3.Relevant guidelines and tools are available to support forecasting of different products, including data sources and data triangulation.		3.Forecasts and supply plans are prepared before budget cycles and grants application for key products - forecasts are consistently used for funding advocacy and procurement planning.		3.Automated forecasting tools are used for key products resulting in a more efficient forecast process.	
4. AdHoc forecasting is conducted independently without coordination with other stakeholders.	✓	4. Formal processes for forecasting are being developed; processes are siloed, minimal cross-collaboration with other functions and technical teams	✓	4.Process for monitoring forecast accuracy is established and the indicator is regularly monitored for selected products.	✓	4.Forecasting process is centralized with participation of relevant stakeholders and signed off by the appropriate authority in Ministries.	✓	4. Forecasting processes are fully integrated across other technical teams and functions. Collaborative Planning Forecasting and Replenishment is fully established and continuously improved.	✓
5. Data for conducting forecasts are available but unreliable for conducting accurate forecasts.	✓	5. Tools and standardized methodologies to conduct forecasts are being developed.		5. Forecasting and quantification processes and procedures are developed, approved and in use.		5.Forecasts are regularly updated based on performance and budget availability.		5. Forecast accuracy is consistently high and within agreed parameters.	

1. ***Forecasting is conducted, but processes are not standardized and are performed on an ad hoc basis.*** The expert working group forecasts needs for medicines and medical and non-medical products before the procurement is initiated. In most cases the working group uses Excel worksheets in calculating the needs for products. However, quantification is carried out manually. The working group obtains primary data from regions on a monthly basis. An expert working group established by MoH performs F&Q&B at the national level. All members of this working group sign off on the F&Q&B results, and the deputy minister or minister approves them.

Level 1 ✓

For SES – Since 2020, MoH and MoF have begun to gradually use and implement in practice an Excel-based tool for F&Q&B that was developed by UNICEF. The results from this tool are presented as a signed form to the MoF for the allocation of state budget funds.

We have seen several examples that illustrate an integrated approach applied for calculating the SCM budget. The Excel tool used takes into account aspects such as actual demand, buffer stocks, unit costs, related costs such as transportation, and customs and banking fees.

2. ***Forecasts are prepared with the appropriate methodology for each product group, including the most appropriate data and triangulation with different data sources.*** In both assessed areas, procurement is based on forecasting of needs.

Level 4 ✓

- **For SES –** SES appoints special responsible groups for F&Q&B according to orders from the SES. Moreover, F&Q&B groups have been established for each key product, and all purchase orders including technical product specifications go through these groups. All decisions are documented, and F&Q&B documents are signed by all members of the relevant groups.
- **For MoH –** The main experts of the MoH are responsible for developing F&Q&B. F&Q&B results are signed by all members of the working group.

In both assessed areas, F&Q&B was carried out on quarterly or semi-annually for medicines and annually for prevention products. The expert working group provides F&Q&B plans to the MoH and MoF for review and consolidation. MoF disburses funds to MoH, and MoH subsequently disburses funds to the procurement agent.

3. ***Has basic awareness of the quantities and types of products required; no formal forecasting/quantification is conducted.*** MoH and MoF receive F&Q&B and supply plans before the budget cycle. The MoF does not approve the budget without receiving approval from the MoH or the responsible agency.

Level 1 ✓

In all cases, F&Q&B is based on realistic data received from regional levels according to the standardized and approved forms. All authorized staff sign off on F&Q&B.

4. ***The forecasting process is centralized with participation of relevant stakeholders and signed by the appropriate authority in the ministries. F&Q&B is fully centralized at the national level. F&Q&B and cost estimates are approved by the responsible MoH Deputy Minister.*** However, in the case of vaccines, F&Q&B is developed in collaboration with relevant international organizations. The implementation of F&Q&B is monitored monthly for curative medicines

Level 4 ✓

and semi-annually for preventive medicines and other products. Heads of regions fill out and sign monthly monitoring documents or forms and provide them to the national level.

5. ***Data for conducting forecasts are available but unreliable for conducting accurate forecasts.*** Standard tools are based on Excel. Electronic tools based on software have been developed only for SES and only for vaccination (13 types of routine vaccines and COVID-19 vaccines). For essential medicines and COVID-19 medicines (MoH), all forecasting methodologies are Excel based but are carried out manually. However, these tools are well developed and take into account all aspects of forecasting. MoH is responsible for F&Q&B but has not developed an electronic, software-based tool due to fragmentation of the health care system by specialty (reproductive health, endocrinology, cardiology, hemodialysis, dermatology, and many others). Each specialty uses different approaches and procedures for forecasting. In most cases annual F&Q&Bs are prepared according to actual availability of funds, and an additional F&Q&B is prepared for the unfunded part of the budget.

Level 1	✓

Budgeting and Planning

We find that Budgeting and Planning has a mixed score according to the assessment framework.

Recommendations: The important gaps to address are related to timing of budget releases for supply chain related costs, completeness of budget releases in a financial year, and the flexibility with which the funds may be used. There also appears to be an opportunity for tighter integration of the MoH's planning process and the MoF's budget development process. The assessment also identifies a number of population groups who may be fully or partially excluded from the budgeting and planning process.

More detailed findings on each component of Budgeting and Planning are contained in the figure below and the supporting text that follows.

Figure 10. Operational Aspects: Budgeting and Planning

Budgeting and Planning

Level 1		Level 2		Level 3		Level 4		Level 5	
Government has some budgeting and planning processes and practices in place but are inadequate to meet the needs. Many gaps exist which affect the day-to-day running of government business. Little awareness of the need to improve financial Management practices		**Government has in place basic budgeting and planning processes and procedures that allow basic functioning of govt business; systems do not support the efficient execution of govt functions. Gaps identified and improvement initiatives started**		**Government has in place adequate budgeting and planning processes and procedures that sufficiently support govt business. Improvement initiatives approved and being implemented.**		**Government has in place professional budgeting and planning practices which enable efficient execution of government business. Continually reviews financial management processes to improve current methods**		**Government has advanced budgeting and planning practices that enable optimal execution of operational functions. Anticipates budget challenges and continually strives for excellence.**	
1. Basic tracking of funds flow in place and not linked to expenditure; Budget overspend or underspend is unknown.	✓	1. Systems for tracking funds flow and expenditures is developed and approved.		1. Funds are disbursed in a systematic manner and tracked, over-spending, under-spending and savings are identified.		1. Has fiscal picture and realistic spending levels. Has full near real-time visibility of over-spend, underspend and savings		1.Forecast processes are advanced and automated, adapted to each product and triangulated with multiple types of high-quality data.	
2. Funds are disbursed in an adhoc manner to execute activities and not in full; Limited /No legal provisions for budget execution	✓	2. Legal provisions for budget execution developed but not ratified.	✓	2. Legal provisions for budget execution developed, ratified and being applied.	✓	2. Legal provisions for budget execution are consistently leveraged to ensure optimal execution of budgets.		2.Forecast performance is monitored and forecasts are updated regularly.	
3. Planning and budgeting processes are conducted but separately; disconnect between needs planning and budgeting process.	✓	3. Basic linkages between budgeting and planning processes established.	✓	3. Linkages between budgeting and planning are established and reflected in policy/programme documents.		3.Planning and budgeting processes are closely linked and backed by an existing policy that is being implemented		3.Automated forecasting tools are used for key products resulting in a more efficient forecast process.	
4. Budget expenditure approved but inefficient, allocated funds consistently unavailable when needed by recipients.	✓	4. Funds are allocated but are not available when needed, do not reach the intended recipients, or procurement is inefficient or slow.	✓	4. Allocated funds are always available to recipients when needed ~60% of the time.	✓	4.Allocated funds are always available to recipients when needed ~80% of the time.	✓	4. Forecasting processes are fully integrated across other technical teams and functions. Collaborative Planning Forecasting and Replenishment is fully established and continuously improved.	
5. Budget allocations processes in place but are rigid and do not consider the needs of disadvantaged areas or populations.	✓	5. Developing Systems and procedures to enable seamless budget reallocation to areas of greater programmatic need.		5. Systems and procedures in place to enable seamless budget reallocation; budget allocations consider the needs of disadvantaged areas or populations for some programmes.		5.Budget allocations can be reallocated seamlessly to meet needs of disadvantaged areas or populations for all programs.		5. Forecast accuracy is consistently high and within agreed parameters.	
6. Budget expenditure process is in place but ineffective, funds are channeled to high cost low impact interventions.	✓	6. Systems to ensure effective budget expenditure are developed, approved and in place; some funds are getting allocated to high impact interventions	✓	6. Budget expenditure is efficient; Funds allocated mostly allocated to high impact intervention	✓	6. Budget expenditure is effective, funds channeled to low cost high impact interventions.		6. Budget expenditure is highly effective and fully optimized to fund high impact low cost interventions.	
7. Budget expenditure, oversight and allocation are conducted but with little to no citizen participation.	✓	7. Plans to include citizens in budget allocation, expenditure and oversight developed.		7. Citizens are contributing to budget allocation and expenditure processes for specific programmes.		7. Citizens' representative bodies have permanent representation during budget formulation and allocation.		7. Citizens' representative bodies have a strong influence and regularly shape budget formulation and allocation.	

1. ***Basic tracking of funds flow is in place and not linked to expenditures; budget overspending or underspending is unknown.*** Government agencies carry out basic cost calculations and monitoring of the flow of expenses. Agencies perform cash flow monitoring manually by direction from the central level (from MoF) and on a one-off basis. There are no standard approaches, deadlines, or tools for reporting and monitoring overspending or unused funds. Since 2018, the MoF has introduced software for accounting and reporting of expenditures and for monitoring of cash flows. This system is based in the treasury department of the MoF. This new software allows MoF to identify unused, overbudgeted, or saved funds broken down by interventions, activities, or funding areas.

Level 1 ✓

2. ***Legal provisions for budget execution have been developed and ratified and are being applied.*** Legal provisions have been developed, approved, and introduced at the national and regional levels. In most cases MoF disbursements for activity implementation is at least 90 percent but not 100 percent of the full amount; agencies have to request the rest of the allocated funds with additional F&Q&B or justification, which requires additional time and delay in execution. Moreover, the MoF disbursement does not take into account factors such as exchange rate differences or associated costs of SCM.

Level 3 ✓

For example, the state program envisaged the allocation of US$12.0 million in state budget funds for the procurement of routine vaccines in 2020, but MoF disbursed only US$8.0 million. This case resulted in inadequate procurement of certain types of vaccines. To avoid a violation of national immunization program standards, SES had to request technical assistance from international organizations and obtain funds under loans under the mandatory guarantee of the Government of Uzbekistan represented by the MoF. After receiving a letter of guarantee from the MoF of reimbursement of loan funds, SES made the purchase. Such currency fluctuations remain very risky for the SCM system.

3. ***Basic linkages between budgeting and planning processes have been established.*** Budgeting and planning processes are established. However, the planning and budgeting processes are carried out separately, which can create a gap between MoH's needs planning process and MoF's budgeting process.

Level 2 ✓

4. ***Allocated funds are available to recipients when needed approximately 80 percent of the time.*** The state budget approves the final versions of the cost estimates in April of the fiscal year, and the state budget funds will be available for funding of procurement starting in June of that year. This mechanism results in significant delays in the procurement and delivery cycle. This gap is covered by external funding sources. However, MoF allows MoH to start the procurement process without approved budget. Experience shows that 70-80 percent of national funding is available to recipients during the fiscal year.

Level 4 ✓

5. ***Budget allocation processes are in place but are rigid and do not consider the needs of disadvantaged areas or populations.*** MoF has developed and integrated these processes centrally. There is no formal assessment of the regions. The budgeting process typically does not take into account the needs of disadvantaged areas, disadvantaged population groups, or low-income people. However, funding of these needs is caried out rarely and on a case-by-case basis.

Level 1 ✓

6. ***Budget expenditure is efficient; allocated funds are mostly allocated to high-impact interventions.*** Implementation of a unified, automated system for accounting and reporting of expenditures and for monitoring of cash flows in 2018 has allowed clear and simple tracking of uncovered/unfunded areas. Automated cash flow tracking makes it possible to assess the performance and impact of funding. To a great extent, budgetary funds are allocated for activities that do not generate income, such as the purchase of high-tech equipment for which there is no infrastructure or adequate human resources. As a result, such purchases are reflected in the lack of profitability.

Level 3 ✓

7. ***Budget expenditure, oversight, and allocation are conducted but with little to no citizen participation.*** Since 2018, the oversight practice has been to post a draft version of the annual budget and cost estimates on the websites mf.uz,[13] project.gov.uz,[14] and meningfikrim.uz[15] for the citizens to discuss and for the government to collect questions and comments from citizens and NGOs. However, in-person discussions of the state budget with citizens or NGOs are not carried out, and they are not involved in the consideration of settlements or budget revision or reprogramming processes. Participation of citizens and NGOs in budgeting or forecasting is thus not taking place.

Level 1 ✓

Procurement

We find that Procurement generally scores high according to the assessment framework. Important elements are in place, including key procurement regulations and processes.

Recommendations: Further refinement of the procurement function for medical products may involve developing more strategic relationships with key suppliers and moving away from transactional supplier relationships toward more strategic ones. The MoH and its partners may wish to establish how, within the existing regulations, this change could be implemented. Interviewees' responses also indicate a need for basic training for procurement officers on selection and use of procurement methods (refer also to the Professional Development subsection later in this report).

More detailed findings on each component of Procurement are contained in the figure below and the supporting text that follows.

[13] Official website of the Ministry of Finance of the Republic of Uzbekistan, accessed March 23, 2022, https://www.mf.uz/uz/.

[14] Official website of the Unified Electronic System for the Development and Approval of Draft Normative Legal Acts, accessed March 23, 2022, https://project.gov.uz/ru/site/login.

[15] Official website of the United Platform for Public Initiatives, accessed March 23, 2022, https://meningfikrim.uz/uz/.

Figure 11. Operational Aspects: Procurement

Procurement

Level 1		Level 2		Level 3		Level 4		Level 5	
Procurement execution is adhoc, no processes, standard procurement documents and guidelines developed and in place but not sufficient. Basic procurement systems exist.		**Procurement systems and processes are being reviewed and strengthened. Standard procurement documents developed and in use. Evolving public procurement system.**		**Procurement processes, procedures and strategies are well defined and documented - being implemented across government. Stable and functioning public procurement system.**		**Procurement system is stable, well functioning and integrated. Strategic procurement approaches are being deployed.**		**Procurement systems are fully optimised from requisition to order placement to goods receipt and invoice payment. Procurement system at an advanced level of operation with continuous improvement.**	
1. Procurement is conducted but the responsibility is not defined. No distinct procurement function and no clear leadership for procurement in the organisation	✓	1. Procurement is formalised and seen as a distinct function. Responsibility for procurement clearly attributed to individuals and is defined within the job description(s). ad hoc reporting of procurement activity to senior management	✓	1. Designated Procurement Head is responsible for managing procurement activity and processes within the organisation and adopting established principles	✓	1. Designated Procurement Head is responsible and accountable for all procurement activity, provides regular management reports to the Board and considered a senior 'peer group' with other business functions,	✓	1. There is a senior management champion who represents the procurement function at board or equivalent level	✓
2. There is a basic but unclear process for delegation of authority for procurement.	✓	2. Process and scheme for delegating authority for procurement are established, sets out authority levels and separation of duties for contracts and purchasing transactions; process reviewed and updated at least annually.	✓	2. Head of Procurement or equivalent is responsible and accountable for ensuring all staff comply with the scheme of delegation. Compliance with the scheme is subject to regular internal audit	✓	2. The separation of duties and authority levels are embedded into systems to ensure compliance and appropriate authority for transactions	✓	2. Procurement policy included as part of induction training; Stakeholders understand the policies and Procurement rarely have to correct noncompliance	
3. Procurement is conducted, but no documented procurement strategy for the organisation or strategic direction documented; no link between the organisations procurement strategy, and Procurement Policy	✓	3. Procurement strategy is being developed and is aligned with existing procurement policies	✓	3. Procurement strategy in place which adopts the principles of the Procurement Policy and links with the organisations strategic plan. procurement strategy communicated and supported Procurement teams	✓	3. Procurement strategy covers continuous improvement of procurement activities; seeing improvements in collaboration and supplier management. Procurement strategy supports core business, and service delivery.	✓	3. Procurement strategy is fully aligned with organisational vision, strategy and goals; Key executive staff are actively involved in supplier relations Procurement plays a key role in all capital / large complex organisation-wide projects	✓
4. Specifications are developed but without Sustainability Risk Assessments, stakeholder engagement and market intelligence; Supplier specifications are usually used	✓	4. Specifications are being developed with Sustainability Risk Assessment; key contracts are based on robust output-based specifications	✓	4. High risk/value contracts are based on output specifications and expert knowledge of requirements and market research; Proactive supplier and stakeholder engagement is undertaken to help understand the market	✓	4. Specifications for high value/risk contracts take into account future commercial/legislative changes; value for money reviews & whole-life costing/total acquisition costing applied	✓	4. Comprehensive research and market engagement are undertaken to establish the best sourcing approach and product/service specification For high risk/value procurements.	✓
5. Procurement function has minimal to no involvement with internal planning activities and processes across teams	✓	5. Procurement function works with some internal teams at an early stage on the procurement of existing and future goods, works and services. Is involved with planning, service design and decision making.	✓	5. Procurement function is engaged from an early stage at all levels with all internal teams and inputs into planning, service design and decision making.	✓	5. Procurement function engages with internal stakeholders in advance, forecasting requirements; Planning for future requirements occurs across functions/departments/organisations in order to leverage volumes/economies of scale.	✓	5. Procurement function is engaged with the internal teams on a continuous basis, actively participates in sourcing discussions at the concept stage and lead the 'make vs buy' decision as well as sourcing approach	✓
6. Basic information exists on current suppliers. Limited / no analysis is completed to support strategy development. Little investment in supply market research.	✓	6. Market research and stakeholder feedback undertaken inconsistently Some understanding of supply markets; Sources of spend data used infrequently for research purposes prior to some procurements	✓	6. Most commodity strategies are based on comprehensive research of the supply market, including supply chain & stakeholder requirements;	✓	6. Sources of spend data are consistently used for research to identify suppliers as a key input to the commodity strategy	✓	6. Annual targets are set for key category metrics. Supply market is well understood including variations. Future trends and scenarios analysed and tested.	
7. There is limited effort to obtain robust information to inform strategies or rationalisation, particularly at line item level.	✓	7. Analysis of line item detail is built into some commodity strategies. Some work is done to identify opportunities to rationalise goods services and works	✓	7. Management information and forecast data are available & used to inform commodity strategy. Procurement is a key source of business intelligence.	✓	7. Detailed management information, including line item detail and forecast data, informs all relevant procurement decisions.	✓	7. Data analytics on line items are consistently available and enabling adaptable agile supply chains and commodity strategies	
8. Procurement strategy, policy and procedures in place but take no account of sustainability, economic, social and environmental impacts	✓	8. Sustainable procurement strategy, policies and procedures developed and in place and incorporated into major procurements and programmes; some social, environmental and economic sustainability outcomes being delivered	✓	8. Major procurements are successfully delivering sustainability outcomes and are meeting sustainability targets. Clear action plans and objectives are in place to achieve the requirements.	✓	8. Sustainability is considered by all procurement practitioners at every stage of the procurement process across all areas of spend, covering supplies, services and works.	✓	8. Sustainable procurement is fully integrated into procurement polices with measurable documented outcomes and results.	✓
9. Suppliers are selected but through an informal process. Process is inconsistent with the responsibility and final decision lying outside procurement teams/function.	✓	9. A clear supplier selection process is in place and consistently applied throughout the organisation; Procurement teams/function is responsible for the process	✓	9. The supplier selection process is well communicated throughout the organisation. Procurement teams/function is accountable for the application of the supplier selection process across the organisation	✓	9. The organisation is consistently measuring impact of the selection process on spend, budget and contract performance; evaluates proportion of local procurement.		9. The organisation takes action, liaising with business and other public sector stakeholders, to reduce the complexity of the selection process and proactively engages the market.	
10. Basic risk management during sourcing is conducted but very limited; No financial checks, terms & conditions, supplier auditing or risk reporting in place	✓	10. Risk reporting is conducted but on a reactive basis. Financial stability is checked at the selection stage; Terms & conditions are standard and in use. Obvious conflicts of interest are managed as they arise.		10. Risk reporting, including sustainability and reputational risk is conducted regularly and proactively; mitigation plans in place. Terms & conditions include business continuity clauses as standard.		10. Measures are in place to protect the organisation from fraud and from the involvement of organised crime in organisational contracts.		10. All risk elements are considered and mitigated; Full Risk Management in place	

1. ***There is a senior management champion who represents the procurement function at the board or equivalent level.*** **Level 5** ✓

- **For SES –** SCM responsibilities for financial issues are assigned to the deputy head of the SES.
- **For MoH –** There is a separate position in MoH: Deputy minister and an established director and relevant deputies in SUE "Uzmedimpeks." Moreover, in 2020 an investment department was established in MoH, which is responsible for all procurement and supply issues within the health care system. SUE "Uzmedimpeks" is responsible for managing all procurement and supply activities within the organization.

2. ***The separation of duties and authority levels is embedded into systems to ensure compliance and appropriate authority for transactions.*** **Level 4** ✓ All staff members are familiar with and trained in the main documents of the public procurement law and strictly adhere to it.

3. ***Procurement strategy is fully aligned with organizational vision, strategy, and goals; Key executive staff are actively involved in supplier relations. Procurement plays a key role in all capital/large, complex, organization-wide projects.*** **Level 5** ✓ There is a procurement strategy that is based on the principles of the procurement policy, and it is linked to the strategic plan of the assessed organization. The procurement strategy is communicated to and supported by the procurement department, and it is strictly adhered to during each bidding process.

4. ***Comprehensive research and market engagement are undertaken to establish the best sourcing approach and product/service specification for high-risk/high-value procurements.*** **Level 5** ✓ In preparation for bidding for the procurement, the procurement specialists carry out market research. The specialists send requests to potential suppliers and manufacturers to clarify technical aspects and provide price parameters. The results of this analysis are used to determine the budget parameters of procurement and technical specifications before the bidding process starts.

5. ***The procurement function is continuously engaged with the internal teams, actively participates in sourcing discussions at the concept stage, and leads the "make vs. buy" decision as well as the sourcing approach.*** **Level 5** ✓ Procurement is carried out on the basis of a tender, and the tender committee considers technical and financial proposals received from various companies and manufacturers.

In addition, a group of specialists from the local authorities and the main experts evaluate quotations and technical offers from various companies (MoF and MIFT are among the members of the tender committee). All participants document the evaluation results and sign them.

The procurement department interacts from the beginning and during all stages with all internal teams and is involved in the planning, design, drafting of technical specifications, and decision making.

Moreover, the 2018 national public procurement law introduced several novel public procurement methods, such as online purchasing and reverse electronic auctions, and enabled the use of new technologies using the Special Information Portal.[16]

The public procurement methods that are currently used are shown in Table 3.

Table 3. Procurement Methods and Responsibility

Methods of Procurement	Type of Procurement	Threshold Value	Respon-sibility	Who Procures
Online purchase (1st type of e-tender)	Goods/Works/ Services	**up to 25 times minimum wage** *(25 * UZS 223,000.0[a] = UZS 5,575,000.0 ≈ USD 530.0)*	Local/regional level	Any health care institution if there is funding from the MoF's regional financial department
Reverse electronic auction (2nd type of e-tender)	Goods	**up to 2,500 times minimum wage** *(UZS 557,500,000.0 ≈ USD 53,095.0)*	Local/regional level	
Competitive bidding	Goods	**2,500–6,000 times minimum wage** *(from UZS 557,500,000.0 ≈ USD 53,095.0 to UZS 1,338,000,000.0 ≈ USD 127,428.0)*	Local/regional level	SES MoH SUE "Uzmedimpeks"
	Works/ Services	**25–6,000 times minimum wage** *(from UZS 5,575,000.0 ≈ USD 530.0 to UZS 1,338,000,000.0 ≈ USD 127,428.0)*	Local/regional level	
Tendering	Goods/Works/ Services	**from 6,000 minimum wage** *(6,000 * UZS 223,000.0 = UZS 1,338,000,000.0 ≈ USD 127,428.0)*	National/intern ational level	SES MoH SUE "Uzmedimpeks"

[a] "Dynamics of BRV, BVIP, Minimum Wage, Old-Age Pension, and Benefits," Norma, January 9, 2020, https://www.norma.uz/poleznaya_informaciya/dinamika_izmeneniya_minimalnogo_razmera_zarabotnoy_platy. The minimum wage used for procurement in 2020 was UZS 223 000.0 ≈ USD 21.2.

6. ***Sources of spending data are consistently used for research to identify suppliers as a key input to the commodity strategy.*** The supply market is well understood, and a unified database of suppliers and manufacturers of different products is regularly updated by product category and capabilities of these suppliers and manufacturers.

Level 4 ✓

7. ***Detailed management information, including line item detail and forecast data, informs all relevant procurement decisions.*** Management information and forecast data are available and used to inform

Level 4 ✓

[16] "Special Information Portal for Public Procurement," Ministry of Finance of the Republic of Uzbekistan, accessed March 23, 2022, http://xarid.uz/.

product strategy. On an ongoing basis, an analysis of the purchases and contracts is carried out in the assessed area. This document serves as a strategically and analytically important resource from that could be used to generate data on prices and quantitative or qualitative parameters by procured products.

8. ***Sustainable procurement is fully integrated into procurement policies with measurable, documented outcomes and results.*** The tender committees of relevant organizations (SES) have developed approved and sustainable procurement strategies, regulations, and procedures. These documents are integrated into all procurements.

Level 5 ✓

9. ***The supplier selection process is well communicated throughout the organization. Procurement teams or the procurement function is accountable for the application of the supplier selection process across the organization.*** Liaising with the business community and other public sector stakeholders is important because the procurement and supply of goods is linked to various entities like the MoF, MIFT, Ministry of Economy, State Customs Committee, and State Tax Committee. At the same time, the chairpersons from the above institutions are members of various coordination councils, working groups, and tender committees, which is a confirmation of clear communication actions.

Level 3 ✓

10. ***Basic risk management during sourcing is conducted but is very limited; no financial checks, terms and conditions, supplier auditing, or risk reporting is in place.*** Procurement processes take all risk factors into account, including financial issues, quality of goods, terms and conditions of delivery, and other issues. At the same time, the procurement documents and contracts clearly reflect precautions and measures to prevent risks or obligations of the parties and to provide sanctions in case of violations.

Level 1 ✓

Delivery and Clearance

We find that Delivery and Customs Clearance scores highly according to the assessment framework and is an area of relative strength for Uzbekistan.

Recommendations: Uzbekistan already scores well in this area; we have no further recommendations.

More detailed findings on each component of Delivery and Customs Clearance are contained in the figure below and the supporting text that follows.

Figure 12. Operational Aspects: Delivery and Clearance

Delivery and Clearance

Level 1		Level 2		Level 3		Level 4		Level 5	
Customs clearance & delivery process is adhoc, no defined systems/processes.		**Clearance and delivery processes and guidelines are established, documented and approved.**		**Formal arrangements for customs clearance and delivery are established (outsourced/insourced), established processes and procedures are applied.**		**Delivery and clearance times conform to set parameters**		**Consignments are consistently cleared and delivered within the scheduled delivery times from port of entry**	
1. Up to 55% of consignments are cleared and delivered to consignees within scheduled or expected delivery times.	✓	1. Up to 65% of consignments are cleared and delivered to consignees within scheduled or expected delivery times.	✓	1. >75% of consignments are cleared and delivered to consignees within scheduled or expected delivery times.	✓	1. >85% of consignments are cleared and delivered to consignees within scheduled or expected delivery times and complete.	✓	1. >95% of all consignments are consistently cleared and delivered within the scheduled delivery times from the port of entry.	✓
2. Clearance and delivery is executed; delivery times are inconsistent, no performance standards developed or defined.	✓	2. Standard Operating Procedures for clearance and delivery are developed and agreed.	✓	2. On-time clearance and delivery times improving.	✓	2. Performance management regime in place and facilitating regular on-time delivery and clearance	✓	2. Customs clearance and delivery is consistently executed within set timeframes; documentation is seamlessly exchanged between parties and efficiently processed.	✓
3. Incurring demurrage charges but, unaware of the proportion of consignments incurring demurrage charges.	✓	3. Developing systems, processes and tools to ensure full visibility of demurrage charges being incurred on inbound shipments.	✓	3. Systems, processes and tools are in place and in use. Gaining visibility of demurrage charges and taking corrective action.	✓	3. Corrective/prevention measures consistently taken to eliminate demure charges; has full visibility and data on all consignments.	✓	3. Established systems are consistently predicting delays/bottlenecks, taking pre-emptive measures to eliminate delays and demurrage charges.	✓
4. National/regulatory guidelines and procedures are available but not disseminated to staff; no staff training conducted	✓	4. National regulatory guidelines/customs clearance procedures are disseminated to relevant staff.	✓	4. Relevant staff are trained and conversant with the national regulatory requirements and procedures for customs clearance.	✓	4. Staff is aware of customs clearance processes/procedures and documentation requirements and competent in their application; customs clearance and delivery are stable.	✓	4. Staff is fully competent and aware of national customs clearance processes and procedures; proactively collaborates with other agencies and stakeholders	✓
5. Customs clearance is performed, tasks not formally assigned to a specific department/function, processes not defined and adhoc. (depends on donors for specific programmes)	✓	5. Processes for customs clearance are defined and agreed with clear roles and responsibilities of each supply chain actor.	✓	5. Formal structures and responsibilities for customs clearance and delivery are in place—dedicated teams establishing Service level agreements internally or with vendors.	✓	5. Dedicated teams are regularly enforcing terms of Service level agreements; consistent reduction in delays and demurrage charges.	✓	5. Independently executes clearance and delivery processes seamlessly and efficiently internally or through third-party vendors	✓
6. Data on delivery confirmation is available but inconsistent and fragmented.	✓	6. Data on the performance of customs clearance and delivery is systematically collected and stored	✓	6. Performance measures and results are consistently documented, shared and corrective action is taken.	✓	6. Data analytics on customs clearance and delivery consistently available and used for decision making.	✓	6. Data analytics on customs clearance and delivery are driving decision making and integrated with inventory and procurement systems and functions.	✓

1. ***More than 95 percent of all consignments are consistently cleared and delivered within the scheduled delivery times from the port of entry.*** Terms, conditions, and place of delivery are clearly regulated by national government agencies. In addition, the conditions and procedures for consistent delivery of the products to the final destination and recipients are clearly regulated; 95 percent of the procedures are followed and accomplished without any errors or obstacles.

Level 5 ✓

2. ***Customs clearance and delivery are consistently executed within set timeframes; documentation is seamlessly exchanged between parties and efficiently processed.*** Customs offices fully coordinate and monitor by customs clearance. In accordance with the internal regulations of Uzbekistan's Customs Committee, the customs office informs the recipient about the arrival of the goods in Uzbekistan within two working days of receipt of the goods. Within three days of arrival, the recipient of the goods must complete customs procedures. Documentation is easily transferred between parties and processed efficiently due to the presence of a single coordination body for transferring documents.

Level 5 ✓

3. ***Established systems consistently predict delays/bottlenecks and take pre-emptive measures to eliminate delays and demurrage charges.*** There is established software for accounting and control of customs clearance processes. In cases of delay in customs clearance, the customer or supplier is obliged to pay a demurrage charge for the idle time of the goods in customs storage according to rates established by the customs authority or airport. Demurrage charges are specified as shown in Table 4.

Level 5 ✓

Table 4. Fines for Late Delivery

Number of Days after the Deadline*	Amount of the Fine as a Percentage of the Amount of Goods Not Registered in "Release for Free Circulation" Mode (Work Not Performed, Services Not Provided)
up to 180 days	10%
from 180 to 365 days	additional 20%
more than 365 days	additional 70%

Source: "The importer delayed the import of goods, a fine," Norma, dated December 14, 2017, https://www.norma.uz/novoe_v_zakonodatelstve/importer_prosrochil_vvoz_tovarov_-_shtraf.

*The deadline is 30 banking days (or 60 banking days for small businesses and private entrepreneurs).

This software allows viewing of full data for all cargo. The established, unified automated system systematically informs recipients of all delays/bottlenecks and the coordination body for transferring documents. The system informs recipients of goods on a weekly basis so that recipients can take urgent measures to prevent delays and downtime.

4. ***Staff is fully competent and aware of national customs clearance processes and procedures; proactively collaborates with other agencies and stakeholders.*** Logistics departments have been established at relevant national agencies. These departments are staffed by specialists with knowledge of the processes and procedures for customs clearance and documentation requirements, as well as competence in applying them. Customs clearance specialists receive annual training from the Customs Committee of the Republic of Uzbekistan.

Level 5 ✓

5. ***Independently executes seamless and efficient clearance and delivery processes internally or through third-party vendors.*** In addition to the logistics departments at government agencies, additional specialized groups are sometimes engaged in the customs clearance process, in particular on the issues of processing customs cargo declarations.

Level 5 ✓

6. ***Data analytics on customs clearance and delivery are driving decision making and integrated with inventory and procurement systems and functions.*** Analytic data on customs clearance and delivery could be easily generated from software that is managed by customs offices, the Customs Committee, or recipients of products. Customs clearance and delivery data are systematically collected and stored. Scanned originals of customs documents are loaded into a single system and can be retrieved at any time by all authorized users (recipients, customs officials, and Customs Committee members).

Level 5 ✓

Inspection

We find that Inspection scores well according to the assessment framework.

Recommendation: The MoH and its partners may consider developing an integrated strategy for risk management in this area that would combine the use of pre-shipment and post-shipment inspection activity with quality assurance mechanisms set out in the procurement process. Refer to the sample SOP (Control of Stock Receipt) in Annex A for additional information on inspection activities.

More detailed findings on each component of Inspection are contained in the figure below and the supporting text that follows.

Figure 13. Operational Aspects: Inspection

Inspection

Level 1		Level 2		Level 3		Level 4		Level 5	
Inspections are conducted informally and adhoc, no formal process/procedures/guidelines for verification of inbound supplies		**Guidelines and procedures for conducting inspections are established and approved**		**Guidelines for inspection are consistently being used to verify supplies quality and quantity.**		**Pre and post shipment inspection form part of the procurement contract, inspection conducted by third party agents; compliant supplies consistently delivered.**		**Results of inspections are consistently recorded and analysed to provide product and supplier performance data. Inspections ensuring product conformance to set standards.**	
1. Basic informal guidelines in place, no formalised inspection policy/systems.	✓	1. Policies for sampling and inspection are developed and approved and communicated.	✓	1. Policies for sampling and inspection are being applied at most supply chain tiers and starting to see improvements.	✓	1. Policies are consistently enforced and corrective action swiftly is taken. Supplier compliance with set standards is high.	✓	1. Policies and procedures are fully embedded and integrated with related procurement and supply chain policies.	✓
2. Inspections are conducted but adhoc and irregular; no formal procedures and processes.	✓	2. Standard Operating Procedures and tools for inspections are developed and approved.	✓	2. Standard operating procedures for inspection and tools developed are being applied.	✓	2. Standard operating procedures are consistently applied and updated and ensuring consistent delivery of quality products.	✓	2. Total quality management applied throughout the Supply Chain;	✓
3. Short-shipments, damaged products or incorrect shipments are reported and recorded but sporadically.	✓	3. Processes for recording discrepancies on inbound shipments are developed and approved.	✓	3. Shipment discrepancies are systematically recorded and communicated, corrective action taken.	✓	3. Near real-time data and records are available for inspection conducted for most product categories, inspections facilitating	✓	3. Real-time data on inspection results are available and consistently communicated for corrective action.	✓
4. Inspections conducted, but no staff member or department is formally assigned to perform the function	✓	4.Roles/responsibilities/department for conducting inspections are defined and communicated to staff.	✓	4. Formalised structures, roles and responsibilities are established. Dedicated resources in place.	✓	4. Dedicated teams are proactively conducting inspections working collaboratively with other government agencies	✓	4. Dedicated Inspection teams are formally integrated with other government agencies and effectively ensuring compliance with set standards.	✓
5. Inspections are reactive to product failures, no proactive sampling and inspections.	✓	5. Formalising inspection methods and processes, documented guidelines in place.	✓	5. Inspection of shipments is integrated with supply contracts and procurement processes.	✓	5. Routinely conducts inspections of shipments (inbound and returns) and applies standard sampling methods.	✓	5. Advanced sampling and inspection methods are consistently applied to all inbound shipments.	✓

1. ***Policies and procedures are fully embedded and integrated with related procurement and supply chain policies.*** Regulatory documents and procedures are fully embedded and integrated with relevant procurement and supply chain policies and are clearly/strictly enforced by all stakeholders and recipients.

Level 5 ✓

2. ***Total quality management is applied throughout the supply chain.*** Standard operating procedures and inspection tools have been developed and approved and are followed by all stakeholders.

Level 5 ✓

3. ***Real-time data on inspection results are available and consistently communicated for corrective action.*** A "unified information system of foreign economic operations"[17] has been established and integrated within Uzbekistan. Moreover, the MoH, MIFT, and Customs and Tax Committees are acting as the final decision-making body.[18]

Level 5 ✓

4. ***Dedicated inspection teams are formally integrated with other government agencies and effectively ensuring compliance with set standards.*** Specialized inspection teams have been formally established in accordance with internal orders, and these teams are integrated with other government agencies and operate effectively. These groups are called inspection commissions, and they include specialists from the MoH, the Customs Committee, the Uzstandard (the national body for standardization, measurement, and certification), the Tax Committee, and other government authorities authorized to make decisions.

Level 5 ✓

5. ***Advanced sampling and inspection methods are consistently applied to all inbound shipments.*** The customs offices and the Pharmaceutical Committee of Uzbekistan strictly observe the procedure for product selection. Without the official permission of the Pharmaceutical Committee, the import of medicinal products and medical and non-medical products into Uzbekistan is prohibited. This process is strictly controlled by the Customs Committee. The selection and inspection processes are carried out manually, but the results are automated. Customs inspectors are able to see and receive the results of sampling and selection through the "Unified information system of foreign economic operations." At the same time, sampling and inspection depend on the HS code *(commodity nomenclature of foreign economic activity)*.[19] When the product recipient enters the HS code, the unified system will show what procedures the product recipient must undergo.

Level 5 ✓

SES, the Pharmaceutical Committee of the Republic of Uzbekistan, customs offices, and the Laboratory of the Customs Committee carry out inspection and hand selection.

[17] "On Measures to Further Improve the Monitoring of Foreign Trade Operations in the Republic of Uzbekistan," Decree, Cabinet of Ministers of the Republic of Uzbekistan, National Legislation Database, No. 09/20/283/0587, dated May 15, 2020, https://lex.uz/acts/4812424.

[18] "Bank User's Manual for the Unified Electronic Information System for Foreign Trade Operations of the State Customs Committee of the Republic of Uzbekistan," State Customs Committee of the Republic of Uzbekistan, dated 2013, https://docplayer.ru/54488496-Edinaya-elektronnaya-informacionnaya-sistema-vneshnetorgovyh-operaciy-gosudarstvennogo-tamozhennogo-komiteta-respubliki-uzbekistan-eeis-vo-gtk-ruz.html#download_tab_content.

[19] "Resolution of the Cabinet of Ministers of the Republic of Uzbekistan," No. 1042, dated December 30, 2017, https://lex.uz/pdfs/3485910.

Warehousing, Distribution, and Reorders

We find that Warehousing, Distribution and Reorders has a mixed score according to the assessment framework.

Recommendation: Opportunities for improvement in this functional area include the quality and design of storage facilities, moving towards real-time trace systems for distribution and the maintenance of cold chain equipment.

More detailed findings on each component of Warehousing, Distribution, and Reorders are contained in the figure below and the supporting text that follows.

Figure 14. Operational Aspects: Warehousing, Distribution, and Reorders

Warehousing Distribution & Reorder

Level 1		Level 2		Level 3		Level 4		Level 5	
Warehousing and distribution operations are ad-hoc. No formal systems/infrastructure for storing and distributing supplies in place		**Warehousing distribution infrastructure and process is defined but insufficient - not meeting the needs of the end-users**		**Warehousing and distribution arrangements are well defined and in place (in-sourced/outsourced). Process and infrastructure fulfilling end user requirements**		**Warehousing + distribution process and infrastructure is optimised and consistently responsive to the needs of end-users.**		**Govt routinely reflects on warehousing and distribution system design as part of multi-year continuous planning process and operates a fully integrated supply chain that leverages all govt resources and strengths**	
1. Space to store products is available but informal and insufficient to meet demand; infrastructure not purpose-built	✓	1. Formal/purpose-built warehousing infrastructure is being developed (or planned), current infrastructure not supporting programme requirements.	✓	1.Warehousing & distribution infrastructure is developed and meeting most of the requirements/demand		1. Warehousing and distribution infrastructure is well developed and fully meets current and projected future demand.		1. Warehousing and distribution infrastructure is sufficient and integrated within the supply chain planning, and the execution process consistently meets demand/requirements.	
2. Warehouse layout is basic and not optimized to increase efficiency and turn-around times.	✓	2. Plans to optimize warehouse operations by improving layout are developed and approved.		2. Warehouse layout improvement plans are implemented; operational efficiencies are being realised		2. Warehouse layout and design optimises available space and distribution operations across supply chain network		2. Warehouse design and layout is highly adaptable and fully optimised to efficiently handle operational peaks and troughs;	
3. Warehousing and distribution function is regarded as an administrative function, limited investments in infrastructure.	✓	3. Warehousing and distribution function regarded as a core function critical to programmes, some investments being made by govt to improve function.	✓	3. Warehousing and distribution function is considered strategic by the govt, significant investments being made to optimise performance	✓	3. Warehousing and distribution function is strategic and continuously leveraged to support programme outcomes – govt investing for continuous improvement.	✓	3. Warehousing and distribution is part of an integrated supply and demand planning process, continuously ensuring supply chain & programme alignment. Government continuously investing to ensure continuous improvement.	✓
4. Warehouse locations and distribution network is randomly defined	✓	4. Optimal warehouse locations and distribution networks are being defined through analysis and studies.	✓	4. Optimal warehouse locations and distribution systems have been defined, approved and being implemented, and the efficiency gained being realised	✓	4. Warehouse locations and distribution systems are optimised, cost and operational efficiencies regularly attained	✓	4. Warehouse locations and distribution systems are fully optimised and delivering cost savings and efficiency gains across supply chain network; highly responsive and adaptable to programme needs.	
5. Warehouse is operating with basic/informal guidelines on receiving, inventory management, picking, distribution, quality, security, returns and reorder.	✓	5. Developing policies and operating procedures for receiving, inventory management, picking, distribution, quality, security, returns and reorder.	✓	5. Policies and procedures for receiving, inventory management, picking, distribution, quality, security, returns and reorder developed, in use and ensuring stable operations;	✓	5. Policies, procedures and consistently used to continuously improve warehousing and distribution operations.		5. Policies and procedures are consistently revised to provide for changes in operating environment and continuous improvement;	
6. Warehouse has basic storage systems and mechanical handling equipment insufficient to meet demand/throughput	✓	6. Defining fit for purpose storage and mechanical handling equipment requirements for optimisation of warehouse operations	✓	6. Fit for purpose storage and mechanical handling equipment is installed and improving warehouse operational efficiencies	✓	6. Installed storage systems and mechanical handling capacity driving operational improvements/efficiencies	✓	6. Warehouse has fully optimised storage systems and mechanical handling equipment capable of processing throughput effectively and efficiently	✓
7. Systems for tracking and tracing consignments in the supply chain are basic, adhoc and informal-manually operated	✓	7. Solutions for tracking and tracing consignments are being developed.		7. Solutions for tracking and tracing consignments are installed and functioning, supply chain visibility is improving		10. All consignments dispatched from w/house are tracked and traceable at all points in the distribution chain in near real-time.		10. Fully functional technology-enabled track and trace system with real–time consignment location data is in place giving full supply chain visibility.	
8. Has basic informal systems to record transactions, movements and inventory in the warehouse- manually operated	✓	8. Taking steps to develop formal electronic systems to record transactions, movements and inventory in the warehouse		8. Warehousing and Inventory Management System is fully installed and operational; transaction, movement, inventory records are efficiently processed and improving in accuracy, throughput and processing times		8. Warehouse and Inventory Management System is consistently enabling greater operational efficiency, accurate real-time data for transaction, inventory, movements available.		8. Warehouse and Inventory Management Systems are fully integrated with other supply chain planning and programme management systems	
9. Country has a national cold storage facility with enough capacity to receive routine and SIA vaccines	✓	9. Storage facilities exist at all the relevant levels of the cold chain with sufficient capacity to accommodate EPI needs	✓	9. Storage capacity is sufficient for all levels but may not be PQS prequalified;Temperatures are logged and reported to guide CCE management; Functional status is reported and tracked	✓	9. Storage capacity is sufficient at all storage sites in the cold chain for routine immunization needs with sufficient buffer for possible NVI or campaigns	✓	9. Storage capacity and CCE is sufficient at all storage points for routine immunization needs with capacity for population growth, NVI or campaigns for the next 5 years; All CCE is Grade A freeze preventive and PQS prequalified	✓
10. Country has sub-national vaccine storage facilities with sufficient storage capacity for routine and SIA vaccines	✓	10. Cold Chain Capacity is estimated to be sufficient for all levels although there is insufficient evidence to support the estimate	✓	10. CCE inventory has been completed and updated regularly (annual or sooner) including functional status, age, and equipment type	✓	10. Sufficient CCE for transport and outreach are located in the correct sites (EVM E.3 storage capacity >80%)	✓	10. CCE is equipped with a monitoring system that includes alerts for CCE that are operating outside of specifications/range; Metrics are available, reported, and used for CCE management and targetted supervision	✓
11. Basic maintenance systems and temperature monitoring exists for the warehouse and CCE but are not actively managed	✓	11. Formal maintenance system in place, but may be underfunded. Routine temperature monitoring is done daily; Functional status of CCE may not have visibility across all levels	✓	11. Maintenance and repair policies and procedures are known and practiced;Temperature alert system/procedures exist with alarms at national store (minimum) – does not have to be RTMD driven		11. CCE is functional and an active repair/maintenance system is in place with sufficient spare parts in country (EVM E.5 maintenance and repair >80%)		11. Maintenance and asset management system (CCE and parts) is in place and is updated on a monthly basis with links to inventory and repair status	

1. ***Formal, purpose-built warehousing infrastructure is being developed (or planned); current infrastructure is not supporting program requirements.*** There is a space for storing products at SES. In addition, SES rents warehouse space at the national level. The warehouse meets the required storage conditions. The rented warehouse is equipped with all the necessary storage equipment (refrigerators and special shelving) and mechanical handling equipment. Especially during the pandemic, additional private warehouses were used to store equipment, PPE, and other items delivered as humanitarian aid from foreign countries and organizations.

Level 2 ✓

For treatment (MoH): Products are stored in SUE "Uzmedimpeks." There are two national warehouses; one is the property of SUE "Uzmedimpeks," and the other warehouse is rented. The SUE "Uzmedimpeks" warehouse meets storage requirements except cold chain requirements.

2. ***Warehouse layout is basic and not optimized to increase efficiency and turnaround times.*** The volume of storage facilities does not correspond to the volume of supplies, which leads to additional costs for finding other storage facilities or taking emergency actions to vacate existing storage.

Level 1 ✓

3. ***Warehousing and distribution is part of an integrated supply and demand planning process, continuously ensuring supply chain and program alignment. Government continuously invests to ensure continuous improvement.*** In the assessed areas, the warehousing and distribution function is seen as a key, critical aspect of the supply chain for program implementation. Accordingly, warehousing and warehouse manager positions have been introduced in all relevant government agencies at the national and regional levels. These positions are fully staffed by specialists with higher education in the field of pharmacology (for medicines and medical products) or finance (for non-medical products).

Level 5 ✓

4. ***Warehouse locations and distribution systems are optimized, and cost and operational efficiencies are regularly attained.*** In the assessed areas, the location and distribution network is defined according to a thorough assessment and evaluation, which includes the following parameters: availability of a railway line, proximity to the points of arrival of goods, distance to the central office of the consignee, availability of infrastructure near the warehouse, the possibility of movement inside and outside the warehouse of freight vehicles, and the distance from the warehouse to the customs clearance point.

Level 4 ✓

5. ***Policies and procedures for receiving, inventory management, picking, distribution, quality, security, returns, and reorders are developed, in use, and ensuring stable operations.*** In the assessed areas, regulatory documents and operating procedures have been developed and implemented. However, according to interviewees, these documents are simple and do not reflect detailed mechanisms and processes; in particular, the methods of accounting for inventory items in the warehouse (i.e., at the warehouse site) are not described. FIFO and LIFO methods are also absent from these regulatory documents, and there are no requirements and technical parameters for warehouses with temperature control. (Existing regulatory documents that apply to warehouses with temperature control are approved at the basic level by health care institutions and government agencies).

Level 3 ✓

6. ***Warehouses have fully optimized storage systems and mechanical handling equipment capable of processing throughput effectively and efficiently.*** Level 5 ✓ The rented warehouse is equipped with all the necessary storage equipment (refrigerators and special shelving) and mechanical handling equipment.

7. ***Systems for tracking and tracing consignments in the supply chain are basic, ad hoc, and informal or manually operated.*** Level 1 ✓ In all assessed areas, tracing activities are based on the unified automatic accounting system UzASBO. However, data entry is carried out manually.

8. ***There are basic, informal, manual systems to record transactions, movements, and inventory in the warehouse.*** Level 1 ✓ Tracing is carried out based on the unified automatic accounting systems (including UzASBO). However, data entry is carried out manually.

9. ***Storage capacity and cold chain equipment (CCE) are sufficient at all storage points for routine immunization needs with capacity for population growth, the National Vaccination Initiative, or campaigns for the next five years; all CCE is Grade A freeze preventive and prequalified under the pre-qualification scheme.*** Level 5 ✓ Under the Gavi (Vaccine Alliance) project in Uzbekistan, 21 cold storage facilities have been established (1 at the national and 20 at regional levels). These cold storage facilities were constructed and commissioned in 2019 (except for the national facility). The main purpose of these cold warehouses is to store vaccines (11 types), but at the regional level, these warehouses are also used for other products with special temperature requirements.

10. ***CCE is equipped with a monitoring system that includes alerts for CCE that are operating outside of specifications; metrics are available, reported, and used for CCE management and targeted supervision.*** Level 5 ✓ The cold storage facilities established under the Gavi project are equipped with monitoring systems that provide alerts and metrics that are used for CCE management and supervision.

11. ***A formal maintenance system is in place, but may be underfunded. Routine temperature monitoring occurs daily; the functional status of CCE may not be visible at all levels.*** Level 2 ✓ All cold storage facilities are equipped with necessary equipment for managing temperatures. However, maintenance and management of temperature are not performed properly due to a lack of maintenance personnel.

Utilization by End-Users

We find that Utilization by End-Users scores poorly according to the assessment framework. Most components of a post-market surveillance system for pharmaceuticals and medical products are not in place.

Recommendation: MoH and WHO should collaborate to develop a plan for addressing the gaps in this area. Because of the highly specific nature of the Uzbek system and how the situation has evolved throughout the pandemic, we recommend that MoH and its partners do a deeper analysis of the gaps during their strategic planning process.

Figure 15. Operational Aspects: Utilization by End-Users

Utilization by End-User

Level 1		Level 2		Level 3		Level 4		Level 5	
Govt has no formal mechanism to collect data on end-user product experience. End-user feedback is adhoc and informal		**End-User monitoring guidelines and tools are developed and approved**		**Established guidelines & tools are being used to collect data on user experience for some products**		**User experience data is consistently collected and results communicated. Corrective action taken across programmes and supply**		**Government routinely collects end-user feedback on product characteristics & performance. Feedback used to inform procurement specifications/ product improvement/govt policy**	
1. End-User feedback is informally collected e.g. through adhoc complaints initiated and reported by the user.		1. Post Marketing Monitoring (PMM) guidelines are developed and approved		1. Post Marketing Monitoring/End Use Monitoring data are systematically collected through a formal mechanism/structure.		1. Post Marketing Monitoring/End Use Monitoring data are systematically collected, analyzed and used as information for decision making.		1. End-user feedback is seamlessly, consistently and pro-actively captured and reported near real-time.	
2. Mechanism to gain end-user feedback on product effectiveness, performance or appropriateness are informal; No unit or dept established		2. Tools to collect/analyze Post Marketing Monitoring/End Use data are developed and approved.		2. Post marketing monitoring guidelines are being applied across the supply chain.		2. Findings from Post Marketing Monitoring/End Use Monitoring consistently use to take corrective and preventive action.		2. Adverse events from products delivered are traceable to end-users and rapidly reported.	
3. Has some visibility on the quality and integrity of products reaching end-users. No formal post-marketing surveillance	✓	3. Relevant staff are trained in conducting end-user monitoring and post marketing monitoring.		3. Tools to collect/analyze Post Marketing Monitoring data are developed, approved and in use; data on quality and integrity of products collected.		3. Routinely uses data and analytics on product quality and integrity to make decisions and take corrective action.		3. Post Marketing Monitoring/End Use Monitoring data analytics consistently used to improve specifications and develop Target Product Profiles.	
4. Government has some data (although limited) on the proportion of products reaching targeted beneficiaries.	✓	4. Developing formal mechanisms and structures to collect end-user feedback - establishing department, centre or unit.		4. Data on proportion of products reaching targeted beneficiaries are available for tracer products across some product categories/types.		4. Is identifying and attaining cost saving opportunities from Post Marketing Monitoring/End Use Monitoring data and analytics.		4. Consistently achieves cost savings through use of Post Marketing Monitoring/End Use Monitoring data and analytics.	
5. Government is aware of the quality and appropriateness of products delivered (but for a limited range of products).		5. Developing systems and mechanisms to quality assure products along the supply chain.		5. Routinely collects data and is aware of the quality and integrity of some of products reaching beneficiaries.		5. Is consistently aware of the quantity, quality, uptake and end use of products delivered to beneficiaries.		5. Consistently has full visibility of product performance, quality and reach.	
6. Is aware (to a limited extent) of adverse effects caused by some products delivered to end-users.		6. Establishing statutory provisions/national policies on post marketing monitoring/end-use monitoring/		6. Aware and collecting data on adverse events caused by products delivered to end-users.		6. Regularly detects and prevents adverse effects and has visibility of the impact of products on end-users/programmes		6. Has full capability and capacity to detect, assess, understand and prevent adverse effects	
7. Country has a basic informal plan to monitor products post-market.	✓	7. Government is developing a strategic plan for monitoring and reporting on products post market.		7. Post market monitoring plan and strategy are developed approved and implemented by government.		7. Post Market Monitoring strategy is in place and continuously reviewed		7. Post market strategy is integrated and aligned with wider government strategies and policies	

Monitoring and Evaluation

We find that Monitoring and Evaluation scores poorly according to the assessment framework. Monitoring and evaluation activity does take place within the supply chain; however, the process is not standardized and is often conducted using manual forms. Information gathered is not always complete and does not constitute part of a comprehensive supply chain performance measurement and review process.

Recommendation: As we recommended in the Executive Summary, the MoH and its partners should implement a supply chain performance measurement and review process as one of three main workstreams.

More detailed findings on each component of Monitoring and Evaluation are contained in the figure below and the supporting text that follows.

Figure 16. Operational Aspects: Monitoring and Evaluation

Monitoring & Evaluation

Level 1		Level 2		Level 3		Level 4		Level 5	
There are no formal systems, processes and tools to track end to end supply chain performance		**Monitoring framework defined, tools and guidance developed and approved by govt/agency.**		**Monitoring tools in use, supply chain performance is consistently monitored and results communicated.**		**Corrective action is consistently taken to improve performance based on M+E results**		**Monitoring is integrated across programmes and supply. M+E data informing programme design, supply planning and continuous improvement**	
1. Basic/informal supply chain monitoring is being conducted.	✓	1. Monitoring framework for supply chain developed and approved.		1. Monitoring framework developed and applied to programmes/supply chain.		1. Near real-time performance monitoring is in place and supported by technology.		1. M+E strategy fully deployed developed and integrated into programmes.	
2. Data collection on supply chain performance is conducted but is ad-hoc and unstructured.	✓	2. Monitoring tools and processes are developed.		2. Tools developed and being implemented to monitor programmes and supply chain.		2. Data collection is semi-automated and consistently analysed to give management/performance information.		2. Data collection, analysis and reporting are highly automated.	
3. Basic performance indicators are in use but not fully developed; indicators inconsistent and fragmented.	✓	3. Staff trained on new monitoring tools processes		3. Progress is being tracked on supply chain performance and data is collected.		3. Data and information is routinely triangulated with other data sets to give a complete view of programme and supply chain performance.		3. Efficient processes in place to ensure adherence to data generation, registration and reporting.	
4. Basic tracking and reporting of supply chain performance is conducted	✓	4. Data collection procedures and processes are developed.		4. Performance results are communicated and actions being taken to course correct.		4. Technology-enabled Data visualization is consistently used to communicate performances and corrective action is consistently taken.		4. Real-time availability of standard reports that allow a pro-active management decision making	
5. Informal guidelines and processes for monitoring supply chains are being used.		5. Performance indicators developed and approved.		5. Data is analysed and transformed into information and partly triangulated.		5. Supply chain and programme performance are regularly monitored triangulated.		5. Data and reporting systems for supply chain are highly integrated with other related programmes and systems.	
6.Basic data on performance is available but insufficient for management decisions.		6.Baseline assessments are conducted and results shared.		6.Data visualization is being used to communicate results and performance.		6. Monitoring and evaluation processes and systems are advanced and staff has full capability.		6.Using advanced predictive analytics tools to manage supply chains and programs.	

1. ***Basic/informal supply chain monitoring is being conducted.*** At the national level, the supply chain is monitored, but this process is not formal and is not regulated by an official legislative document. Information is collected manually and case-by-case, which diminishes its reliability. To collect accurate and detailed information, national specialists carry out monitoring visits to each region once a year.

Level 1 ✓

2. ***Data on supply chain performance are collected but are ad-hoc and unstructured.*** Data collection is fragmented and unstructured. The results of research and monitoring of procurement's effectiveness are distributed only for medicines and consumables.

Level 1 ✓

3. ***Basic performance indicators are in use but not fully developed; indicators are inconsistent and fragmented.*** Semi-annual and annual reports from regions and reports of monitoring visits and evaluation for analysis are carried out at the central level. Reports are very basic.

Level 1 ✓

4. ***Basic tracking and reporting of supply chain performance is conducted.*** Informal reporting forms and documents are used for monitoring and collecting information.

Level 1 ✓

5. ***Informal guidelines and processes for monitoring supply chains are being used.*** All reporting forms used to monitor the supply chain and the use of products are manually developed at the national level and are used from time to time (case-by-case). These forms are not standardized or officially implemented. Instructions for filling out or using these reports is provided by official letters or clarifications.

Level 0

6. ***Basic data on performance are available but insufficient for management decisions.*** The data received does not include all the needed information. The data obtained reflect only the process of using the product. Quantitative and qualitative tracking is carried out on site during monitoring visits.

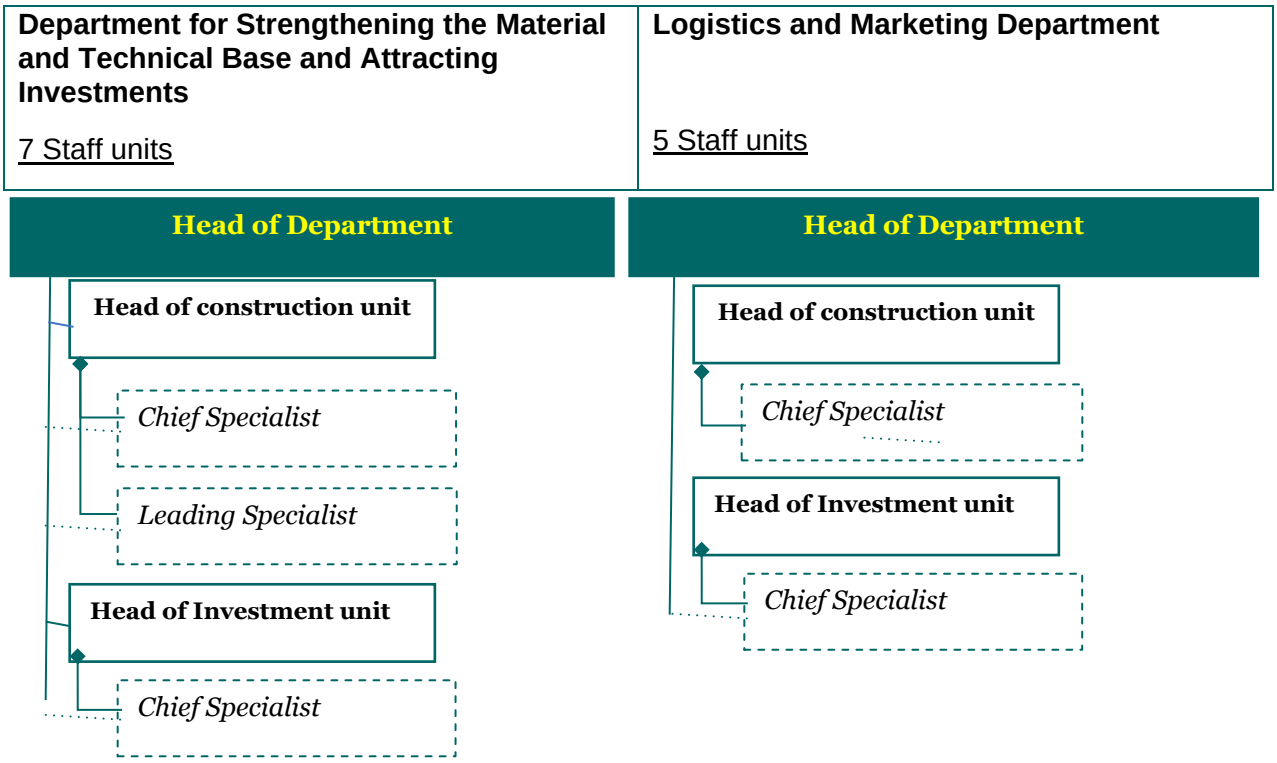
Level 0

Context of the Supply Chain in Uzbekistan

Organizational Structure

The Presidential Decree of the Republic of Uzbekistan No. 4790 dated July 27, 2020, "On measures for organizing the activities of the Service of Sanitary and Epidemiological Welfare and Public Health of the Republic of Uzbekistan"[20] created two separate departments in SES that are responsible for SCM processes. During the pandemic, these two departments were entrusted with the most important procurement and supply of COVID-19 related products, including PCR test kits for detecting COVID-19, PCR machines, PPE, and relevant medical equipment. Figure 17 depicts the structure of the above-mentioned departments.

Figure 17. SES Departments Responsible for SCM during COVID-19



The department for strengthening the material and technical base and attracting investments plays the following roles in the procurement process:

- Performs forecasting, quantification, and budgeting (F&Q&B) and initiates the procurement process
- Prepares procurement-related documents (tender documents, terms of reference, and specifications)

[20] "On Measures to Organize the Activities of the Service for Sanitary and Epidemiological Welfare and Public Health of the Republic of Uzbekistan," Decree of the President of the Republic of Uzbekistan, No. PP-4790, dated July 27, 2020, https://lex.uz/docs/4914450.

- Conducts the procurement process (announcement, collection, and evaluation of proposals; awarding; contract signing)

The logistics and marketing department plays the following roles in the procurement process:

- Executes the contract
- Completes the procurement process (delivery of goods, works, and services; customs clearance; acceptance and release of goods; storage).

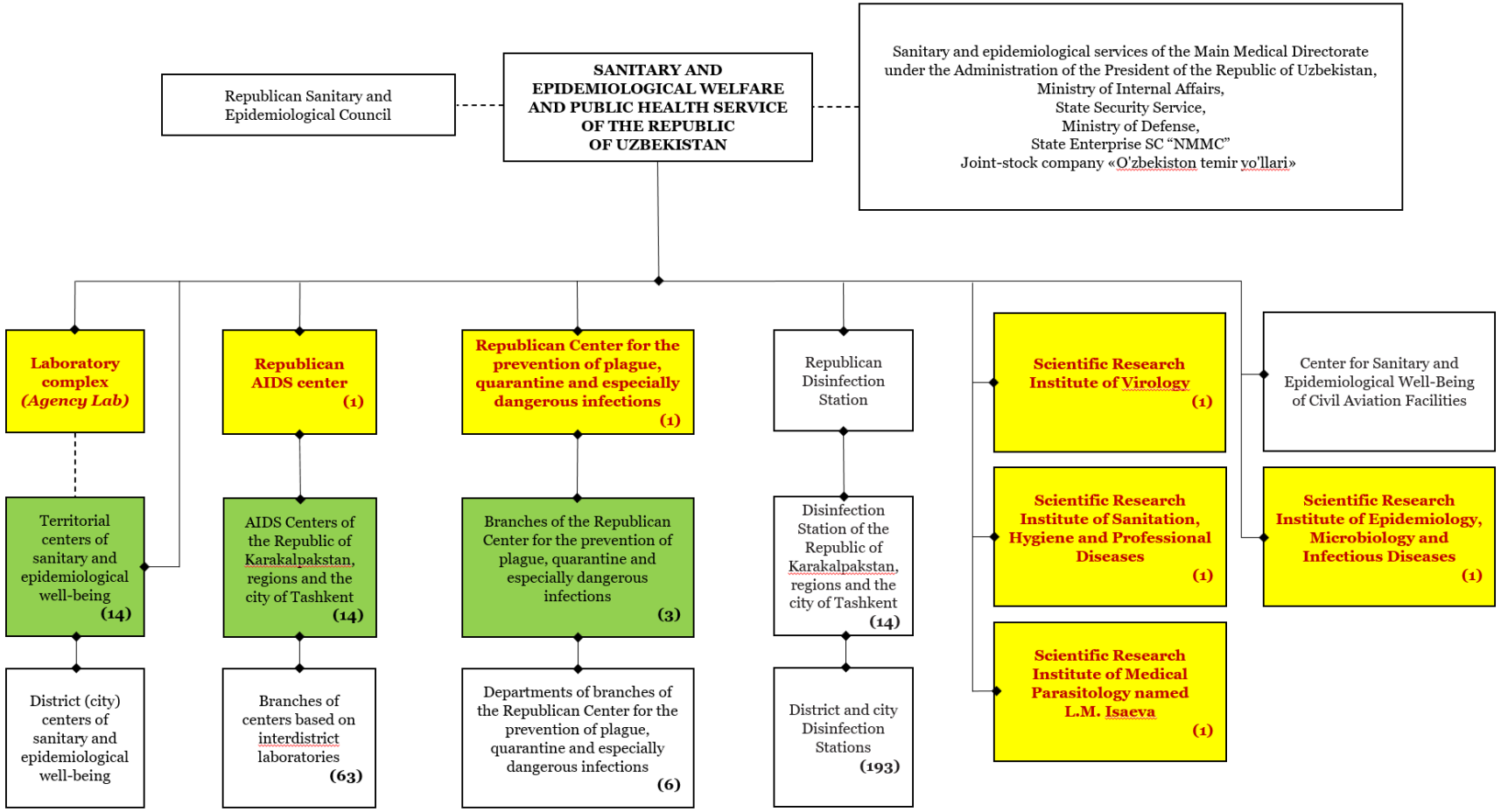
This process applies only to large volume procurements (most likely in the amount of more than US$50,000) and depending on the priority or importance of the subject of the procurement. The logistics and marketing department carries out standard procurements (except for COVID-19) with the involvement of the SES accounting department due to the use of the national platform (xarid.uz).[21]

At the same time, functions and tasks are duplicated for one activity: marketing research (i.e., the search for suppliers and manufacturers). Both departments carry out this activity at the same time in the same manner. It would be more efficient to fully assign these tasks and functions and transfer them to the logistics and marketing department of the SES.

The organizational chart of the SES is shown in Figure 18.

[21] "Special Information Portal for Public Procurement," Ministry of Finance of the Republic of Uzbekistan, accessed March 23, 2022, http://xarid.uz/.

Figure 18. SES Organizational Chart



Source: Sanepid (SES), "Structure," Webpage, accessed April 5, 2022, http://www.sanepid.uz/menus/29.

Professional Development

In total, there are 17,554 staff units in the whole SES structure. The service system in terms of personnel is not attractive and has no prospects due to its underdevelopment. Also, the potential of the personnel of the service institutions for professional advancement is low due to the lack of opportunities for scientific research and high-tech laboratory apparatus.

Potential in the regions is also low, not only in the laboratory field, but also in management and in procurement and supplies. Despite the measures taken to improve the skills of regional employees, the effects have not been significant. In particular, in the area of procurement during the coronavirus pandemic, there are issues with misuse of funds, theft, improper procurement, misuse, and ineffective distribution of COVID-19-related products.

The assessment that LHSS conducted shows that it is necessary to organize continuous professional development activities for SES employees in the following areas:

- **Methods and mechanisms of procurement used in the Republic of Uzbekistan.** In view of the introduction of a revised law on public procurement, there is a need to carry out measures to improve the skills and conduct training of specialists involved in procurement (to a greater extent, these positions are reflected in the accounting departments of regional institutions).
- **Methods and mechanisms of procurement used in international practice.** Employees involved in procurement apparently do not have knowledge of international standards and procurement processes.
- **E-procurement.** Most procurements are carried out through the electronic platform of the commodity exchange, and procurement specialists mainly face problems in determining thresholds for certain types of purchases (e.g., tender, auction, store, direct contracting). Procurement specialists also face problems in managing contracts based on the results of electronic procurement. These violations in paying suppliers on time then lead to the automatic application and activation of penalties in favor of the supplier.
- **Delivery, storage, and distribution.** In many procurements there are delays in delivery, which negatively affects program activities and the tasks set for preventing the spread of coronavirus infection. In addition, due to the lack of clear control and monitoring of the execution of contracts, in most cases, customers, represented by regional centers of SES, forget about the need to apply penalties against suppliers. In the future, this omission will become the subject of inspections for the customer by the inspectors of the MoF or the prosecutor's office. In addition, the SES regional centers do not have knowledge of the conditions for the transportation of goods or the application of approaches for the delivery of goods to end users.

Storage at the regional level is usually carried out by adapting premises for warehouse storage with gross violations of safety conditions and preservation of the quality of goods. For example, there have been cases when a large batch (50 tons) of bleach was spoiled due to storage in rooms with a high humidity coefficient or the storage of test systems for detecting COVID-19 at room temperature when storage in a controlled environment was required. These incidents indicate that regional storage and distribution specialists do not have knowledge of standards for appropriate storage of goods by category.

During the pandemic, goods were distributed without documentation, registration of invoices, or acts of acceptance and transfer, and the distributed goods were not entered in UzASBO. Designated government authorities are now auditing this distribution of goods. In addition, until now, in the age of digitalization at the national and regional levels, software has not been introduced for automatization of the distribution, maintenance, accounting, and reporting of goods turnover, which is reflected in the implementation of manual document circulation.

Regulation of Medical Equipment, Devices, and Aids

At present there is no unified institutional framework in Uzbekistan guiding the purchase and distribution of medical equipment, devices, and aids. Processes are varied and change depending on whether the purchasing agent is a public or private institution and depending on whether the purchase is financed using international loans or institutional funds. Financing for the purchase of medical equipment, devices or aids is provided by earmarked state funding, other public health funds, international loans, private capital, or investment.

In the public sector, international loans provide for a large portion of high-volume purchasing, where loan agreements outline particular purchasing processes and stipulations. In the majority of these cases, the MoH acts as the purchasing agent, either through competitive international bidding or via local purchasing procedures.

In exceptional cases, the State might earmark funding for particular high-cost or high-priority goods, such as diagnostic equipment or new technologies. Apart from these earmarked special expenditures, there are no additional funds set aside for nationally guided purchases of medical equipment, devices, and aids. Responsibility for the procurement of these materials is delegated to the health care facility level, where facilities have the discretion to purchase directly from distributors depending on their needs and available resources. While this decrease in state involvement in the procurement and financing of medical commodities is intended to provide facilities with discretionary protocols and opportunities for self-financing, it can impede supply chains at the local level. Further data are required on the pros and cons of this delegation, including the role of private distributors in ensuring high-quality and affordable materials to all facility types and at all volumes.

In the private health sector, there is typically no access to international loans or state funding. As a result most private health facilities rely on private revenue or investment for purchasing medical commodities. While there are no restrictions on either private or public health facilities' purchasing their own equipment and materials (except purchases exceeding US$100,000), the Department of Quality Control of Medications and Medical Equipment within the MoH must approve all such equipment, devices, and aids for sale on the Uzbek market.

Regulation of Pharmaceuticals

Prior to Uzbekistan's independence in 1991, the central Ministry of Health in Moscow controlled regulation and procurement of pharmaceuticals for the entire Soviet Union. Since independence, Uzbekistan has faced the dual challenge of maintaining the nation's supply of essential drugs and vaccines while developing and implementing its own national pharmaceuticals framework and SCM systems. Over time the development of national drug policies has created a clear distinction between the roles of government and private sector

actors, with government stewarding and regulating the activities of private sector entities that produce or distribute goods.[22]

The MoH exercises its regulatory role through the Department of Quality Control of Medications and Medical Equipment, which was established by Governmental Decree 181.[23] The department is the only state agency responsible for the development and oversight of quality control, standardization, and certification of drugs and medical equipment in Uzbekistan.

To support development of Uzbekistan's pharmaceutical industry, the Agency for the Development of the Pharmaceutical Industry was established in accordance with the Decree of the President of the Republic of Uzbekistan (No. 5229 dated November 7, 2017).[24] The Agency is responsible for coordinating the development and implementation of sustainable strategies aimed at developing Uzbekistan's pharmaceutical industry for the long term. This includes:

- Government regulation of the pharmaceutical industry, including state registration, standardization, certification, and technical regulation of pharmaceutical products, as well as licensing of pharmaceutical activities
- Ensuring the training of pharmaceutical industry specialists on the basis of international educational standards and needed specialties
- Stewarding the retail sale of medicines and medical products
- Exploring modern mechanisms to support development of the national pharmaceutical industry, including coordinating the introduction of advanced foreign practices and international standards in the pharmaceutical industry
- Participation in the Information System for Control and Record of Pharmaceutical Product Flows, providing detailed information on pharmaceutical imports and manufacturing
- Organizing studies of the pharmaceutical market and conducting population and health care institution level analysis regarding pharmaceutical products
- Exploring ways to localize production, including assisting local industry to connect and cooperate with international pharmaceutical companies

In addition, the following departments report to the Agency for the Development of the Pharmaceutical Industry:

- State Center of Expertise and Standardization of Medicines, Medical Devices, and Medical Equipment
- Chemical and Pharmaceutical Research Institute of Uzbekistan

[22] European Observatory on Health Systems and Policies, "Uzbekistan: Health System Review," *Health Systems in Transition*, Vol. 9, No. 3, 2007, https://www.euro.who.int/__data/assets/pdf_file/0004/96421/E90673.pdf.

[23] "On State Quality Control of Pharmaceuticals, Medical Aids and Substances for Medical-Preventive Nutrition," Cabinet of Ministers of the Republic of Uzbekistan, Decree No. 181, dated May 25, 1995. Tashkent, Republic of Uzbekistan.

[24] "Measures To Radically Improve the Management System of the Pharmaceutical Industry," Decree of the President of the Republic of Uzbekistan, No. UP-5229, dated November 11, 2017, https://lex.uz/en/docs/3404349.

- Tashkent Research Institute of Vaccines and Serums
- "Eastern Medicine" Research Institute

Pharmaceutical Wholesale and Retail

Purchasing and procurement processes for pharmaceuticals also differ between the public and private health sectors. While the GoU has sought to stimulate private health care by minimizing its role in the development of the national private pharmaceutical sector (as above), the MoH still oversees and regulates the national pharmaceutical market, including ensuring safe handling, storage, and distribution.

Distribution of pharmaceuticals is regulated by several state policies. A universal price-control mechanism is in place nationally that limits wholesaler profit markups to 20 percent and retail profit of markup of 25 percent for pharmaceutical goods. This regulation was enacted to prevent possible market manipulation and uncontrolled increases in pharmaceutical prices. Private pharmaceutical retailers are enabled to purchase pharmaceuticals from national wholesalers, via pharmaceutical companies, or from manufacturers and producers.

In the public sector, two primary companies are responsible for national procurement and distribution of pharmaceuticals. The government holds controlling shares in both. Dori-Darmon joint-stock company (JSC) is a long-standing local wholesale and retail trade company. Over the past 85 years Dori-Darmon JSC has been the primary pharmaceutical market leader in Uzbekistan, providing a wide range of pharmaceutical products to households and domestic health institutions. In recent years, this company has accounted for up to 90 percent of centrally organized pharmaceutical procurement in public health facilities. The second leading firm, Uzmedtechnika, has accounted for the remaining 10 percent. Although the MoH is a controlling shareholder in both companies (holding ~25 percent ownership of Dori-Darmon JSC), both companies operate as commercial enterprises with limited control exerted by the MoH.

Dori-Darmon JSC has *oblast* branches and procures pharmaceuticals according to the forecasted requests obtained directly from public health facilities. Foreign pharmaceuticals for the public sector are purchased in one of two ways. Dori-Darmon JSC is responsible for all purchases of drugs from Central Asian countries, while Uzbekmedexport, a private company, undertakes all public sector purchases from other countries. Uzbekmedexport relies on Dori-Darmon JSC for technical information and advice. Challenges for the purchase and import of foreign pharmaceuticals include cumbersome registration and import processes, price caps for wholesale and retail (20 percent and 25 percent) that reduce options but promote equity, and the limited hard currency available for the purchase of essential drugs or equipment from abroad at the time of emergency.[25]

As mentioned above, public health institutions are also allowed to procure pharmaceuticals from private wholesalers. Recent policies aimed at reducing monopolization and increasing fair competition in the pharmaceutical market have further liberalized public health care institutions' ability to seek competitive prices. As a result of this market liberalization, Dori-Darmon JSC's market share of pharmaceutical procurements in the public health sector has declined below approximately 50 percent.

[25] World Bank, *Uzbekistan Living Standards Assessment,* 2003, Washington, DC, World Bank (Report No. 25923-UZ).

Private wholesale and retail pharmacies were some of the first privately operated health businesses to be engaged by the GoU after independence. Licensure from the MoH and possessing the requisite staff with pharmacy degrees are the only prerequisites to establish a private pharmaceutical retail outlet. Wholesale distributors are also required to obtain a license from the MoH.[26]

In 1998, Uzbekistan published a national essential drug formulary based on the WHO model list of essential drugs. The formulary includes approximately 240 products, and 20 of the most basic are price regulated by the MoH (as above). All pharmacies regardless of ownership are expected to offer these 20 pharmaceuticals at a fixed consumer price.[27]

In addition to price controls and fixed consumer prices, the MoH has also designated several groups as eligible to receive free medication in an outpatient setting with prescriptions from public health facilities. In the case of retail pharmacies that dispense these prescriptions, reimbursement is provided by the prescribing primary care facility.[28]

Despite these regulatory controls and designations of free outpatient drugs, access to pharmaceuticals remains a major challenge for many, particularly Uzbekistan's poor. This has become increasingly important since general pharmaceutical coverage for outpatient and inpatient care is not included in the state-guaranteed package of services.

Some specialized pharmaceuticals (such as opiates and psychotropic drugs) are also subject to special regulations.[29] The MoH regulates the handling, storage, distribution, prescribing, and retail of these substances. This drug class requires specialized prescriptions on noticeable pink forms signed by the prescribing physician and the head or deputy of the health facility's administration. The MoH handles the production and distribution of these specialized pink prescribing pads. Over-the-counter drugs are also available nationally without prescription in all pharmaceutical retail outlets. There are no special regulations regarding alternative medicines.

In terms of pharmaceutical advertising, it is legally permitted to advertise directly to the consumer as long as MoH approves the content prior to release.

Pharmaceutical Distribution

At independence, Uzbekistan inherited a well-developed drug distribution system from the Soviet period. This included the centralized state pharmacy (*Farmatsija*) system and its regional divisions and pharmacies.[30] In the early 2000s there were roughly 3,600 pharmacies nationwide, approximately 2,220 of which were formerly state owned. Nearly all State pharmacies have now been privatized, either as part of a joint shareholding association (Dori-Darmon JSC, the former sole drug distributor), or as a single or group pharmacy.[31] As outlined

[26] "On Immediate Initiatives To Improve the Provision and Distribution of Pharmaceuticals and Medical Devices in the Country," Cabinet of Ministers of the Republic of Uzbekistan, Decree No. 404 dated August 6, 1994, Tashkent, Republic of Uzbekistan.

[27] European Observatory on Health Systems and Policies, World Health Organization (WHO), "Uzbekistan: Regulation," February 2017, https://www.who.int/health-laws/countries/uzb-en.pdf.

[28] "On the Improvement of Financing Mechanisms of Health Care Delivery Institutions," Cabinet of Ministers of the Republic of Uzbekistan, Decree No. 532 dated December 2, 1997, Tashkent, Republic of Uzbekistan.

[29] Ministry of Health of the Republic of Uzbekistan, "On Confirming the Storage, Distribution, Retail and Registration Principles of Narcotic, Psychotropic Medications and Their 196 Health Systems in Transition Uzbekistan Precursors," Decree No. 521 dated November 28, 2001, Tashkent, Republic of Uzbekistan.

[30] FA Ilkhamov, E Jakubowski, and S Hakioff (eds.), *Health Care Systems in Transition: Uzbekistan,* 2001, Copenhagen: European Observatory on Health Care Systems.

[31] Ibid.

above, the relative success of this pharmaceutical privatization effort has helped to increase competition and provided new opportunities for domestic production and supply.

In terms of local handling and last-mile distribution, Dori-Darmon has traditionally been the main distribution partner for MoH drugs and materials. There are several regional branches including 8 JSCs and 10 subsidiaries, 212 pharmacies, and 545 pharmacy branches in the system, of which 437 are in the rural areas including 343 pharmacy branches at rural health clinics. The pharmacies of Dori-Darmon's chain account for 75 percent of medical drugs and health products provided free-of-charge to the eligible category of patients. There are also mobile pharmacies – refrigerated trucks with essential equipment – operating in remote areas. The mobile pharmacies' mandate is to supply medications to rural households in all oblasts of Uzbekistan.

For hospitals, each facility places an annual order with Dori-Darmon JSC, and deliveries occur (roughly) on a weekly basis. Hospitals purchasing goods from private commercial options undergo case-by-case negotiation for distribution and handling terms.

Private drug distributors also supply drugs to pharmacies, polyclinics, and private practices. Vaccines are directly distributed by the SES. Given the number and scope of private pharmacies it is difficult to obtain up-to-date data on their operation, particularly because they fall outside the MoH's regulatory framework and do not report to any of the MoH agencies.

Figure 19. Coordination and Support Services for Pharmaceutical Distribution

The existence of a centralized system of recordkeeping enables the management at Dori-Dorman JSC to obtain essential information; optimize the process of acceptance, storage, and sales of goods; and coordinate warehouses and departments involved in the delivery, acceptance, and sales of products in real time. To continue expanding their involvement in disseminating information to the public, Dori-Darmon JSC established the "002 reference information service," which provides citizens with detailed information about the availability of medical drugs and health products at 25 Dori-Darmon pharmacies in Tashkent.

Pharmaceutical Dispensing and Costs

With the exception of designated groups and particular clinical conditions, costs for outpatient pharmaceuticals are typically covered by out-of-pocket payment. Exceptions include patients with oncological, endocrinological, or psychiatric conditions; tuberculosis; HIV/AIDS; or leprosy. Patients undergoing cardiac surgery and organ transplants are also eligible for free outpatient

pharmaceuticals. Veterans of the Second World War, workers disabled in the Chernobyl nuclear disaster, and single pensioners (living on their own) are also exempted.[32]

Coverage for pharmaceuticals in secondary and tertiary care depends on the source of financing. If patients are not eligible for reimbursement or are not fully covered by a non-governmental source, they will need to rely on out-of-pocket payment. Patients who are eligible for reimbursement by the government only need to pay out-of-pocket for pharmaceuticals that are not routinely available from a health care provider.[33]

Pharmaceutical expenditures as a percentage of total national health expenditure has fluctuated since independence. Available reported data demonstrate that in the immediate period after independence, pharmaceutical expenditures increased through the 1990s, from roughly 6 percent (1993) and through a high of 14.2 percent (1996). At the start of the millennium pharmaceutical expenditures were 11.6 percent (2001) and has again fluctuated over the past two decades. Historically, public pharmaceutical expenditure has accounted for a small portion of this overall pharmaceutical expenditure, amounting to only 3.4 percent at the close of the 1990s.[34] Overall, estimating public expenditures on pharmaceuticals is a challenge, due to over or under estimates, a significant proportion of health expenditures that go unaccounted for, informal payments, and a lack of documentation in the private sector.

Distribution of Products in the Context of COVID-19

Distribution of goods related to the fight against the spread of coronavirus infection is divided into two areas:

- The **SES** distributes PPE, prevention supplies, and immunization (vaccination against coronavirus) supplies.
- The **MoH** distributes medicines and medical equipment.

During the pandemic, prevention supplies were distributed at the central level by the Republican SES, without the involvement of regional branches of the SES.

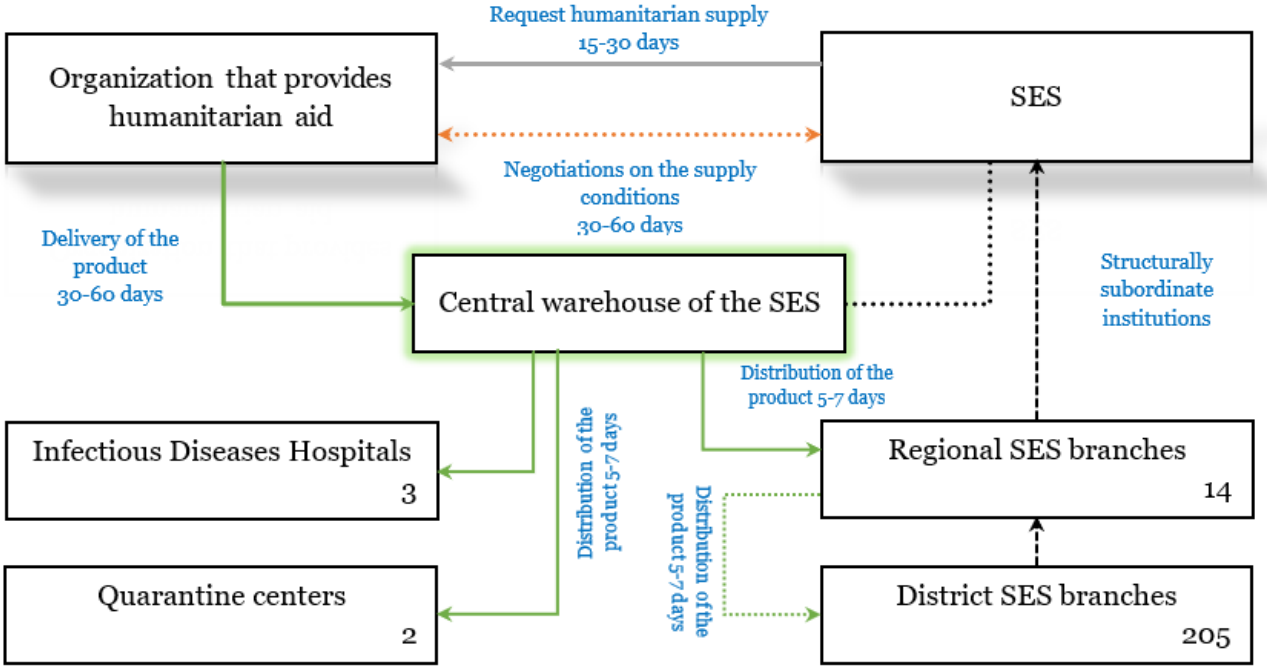
Products may be supplied via **donation** from international organizations and donors or **procurement** through international or national manufacturers of the products. In the latter case, funding comes from the State budget. Figure 20 depicts the humanitarian supply process:

[32] "On the Improvement of Financing Mechanisms of Health Care Delivery Institutions," Cabinet of Ministers of the Republic of Uzbekistan, Decree No. 532 dated December 2, 1997, Tashkent, Republic of Uzbekistan.

[33] "On Immediate Initiatives To Improve the Provision and Distribution of Pharmaceuticals and Medical Devices in the Country," Cabinet of Ministers Republic of Uzbekistan, Decree No. 404 dated August 6, 1994.Tashkent, Republic of Uzbekistan.

[34] European Observatory on Health Systems and Policies, "Uzbekistan: Health System Review," *Health Systems in Transition,* Vol. 9, No. 3, 2007, https://www.euro.who.int/__data/assets/pdf_file/0004/96421/E90673.pdf.

Figure 20. Humanitarian Supply Process



As shown in Figure 20:

- As the main coordinating body in the Republic of Uzbekistan for the prevention and control of the spread of the coronavirus, the SES sends a corresponding *request* to international organizations and donors for *humanitarian products*. *This request indicates only the name of the products needed; it does not indicate quantitative and qualitative data*.
- If the organization that provides humanitarian aid responds positive to the request, there will be detailed negotiations of quantitative and qualitative data (i.e., technical parameters for each specific product, the required quantity, and delivery schedule).
- After the decision on all the official details, *products* are delivered through the humanitarian supply channel to the SES's address. SES carries out customs clearance and places products in the central warehouse.
- To a great extent, the goods in the central warehouse are distributed to subordinate institutions of the SES. Distribution lacks a clear algorithm and calculations based on existing needs.

Analysis of this scheme and the existing distribution mechanisms show the following negative aspects in the distribution of goods during a pandemic:

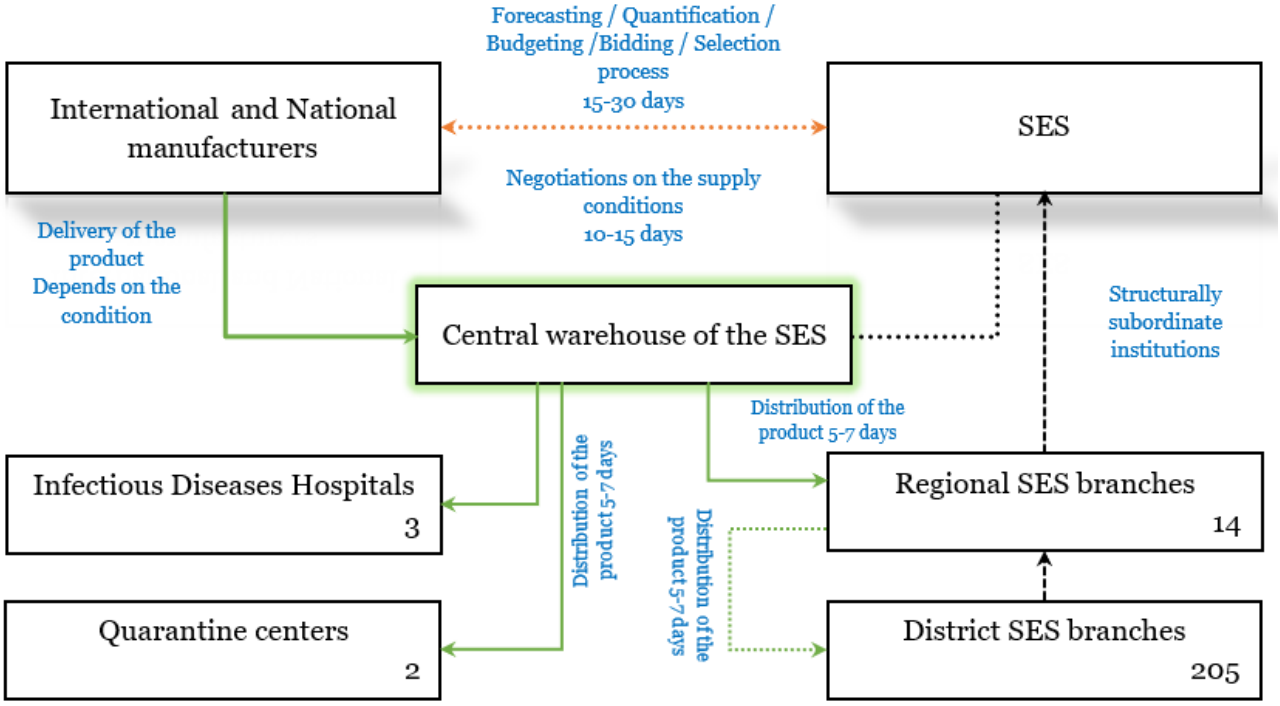
- Lack of a clear action plan for the distribution of products
- Lack of standards for calculating and accounting for products
- Distribution of products in accordance with official letters documenting needs, which takes time for registration (at least 3 days)
- Lack of control and monitoring of accounting and reporting of goods at the central and regional levels

- Lack of responsible and coordinating specialists at the central level of the processes for product distribution
- Lack of a system for accounting and reporting of products in real time at the central and regional levels.

Analysis of this process shows that the distribution system operates without a logical framework, is not based on clear regulatory requirements, and lacks norms for determining the quantity of goods to be distributed.

Figure 21 provides a detailed explanation of the humanitarian supply process where procurement is required:

Figure 21. Procurement in the Humanitarian Supply Process



As shown in Figure 21, the distribution process for procurement of products is the same as in the case of humanitarian supplies:

Distribution and transportation of COVID-19-related products are carried out at the central level. After preparation of the distribution order, regional branches and other relevant organizations prepare powers of attorney in order to receive products from the central warehouse. Responsible staff of these organizations physically visit the central warehouse to receive products. After preparation of the relevant documents, such as invoices, the products are loaded onto trucks. The process takes a maximum of day. Delivery takes approximately 1-2 days depending on the distance.

However, during emergency situations the delivery process may be speeded up. Physical presence of the responsible staff from product receivers' side is not necessary, and the delivery is carried out by air transport. For instance, in August 2020 PPE materials were delivered by air to Karakalpakstan as the products arrived in Uzbekistan without delivering them to the central warehouse.

Moreover, the Republican SES received 206 mini vans (for the district level), 16 vehicles (for the regional level) and 17 refrigerated trucks (for the regional level) in the framework of the national immunization plan from UNICEF in order to ensure uninterrupted distribution of vaccines and for distribution of prevention products/laboratory reagents to the regions of the country:

Table 5. 16 Vehicles (for Regional Level)

№	Regions	Quantity
1.	Tashkent city	1
2.	Andijan region	1
3.	Bukhara region	1
4.	Jizzakh region	1
5.	Kashkadarya region	1
6.	Navoi region	1
7.	Namangan region	1
8.	Samarkand region	1
9.	Surkhandarya region	1
10.	Syrdarya region	1
11.	Tashkent region	1
12.	Fergana region	1
13.	Khorezm region	1
14.	Republic of Karakalpakstan	1
15.	National warehouse	2
Total		**16**

Table 6. 206 Mini Vans (for District Level)

№	Regions	Quantity
1.	Tashkent city	11
2.	Andijan region	17
3.	Bukhara region	13
4.	Jizzakh region	13
5.	Kashkadarya region	15
6.	Navoi region	10
7.	Namangan region	12
8.	Samarkand region	16
9.	Surkhandarya region	14
10.	Syrdarya region	11
11.	Tashkent region	22
12.	Fergana region	19
13.	Khorezm region	13
14.	Republic of Karakalpakstan	17
15.	National warehouse	3
Total		**206**

Analysis of this scheme and the existing distribution mechanisms found the following deficiencies in the distribution of goods during a pandemic:

- Tools and methods for calculating needs do not exist and are not officially regulated.
- Methods and mechanisms for calculations are not unified at either the central or the regional levels.
- Purchases are made based on calculations of weighted average parameters without taking into account specific values obtained from the regional level.
- There is no clear plan (monthly, semi-annual, or annual) for procurement.
- Purchases are carried out as an urgent need arises.
- Purchases are conducted in violation of many procedures and norms for conducting tenders and selections.
- Due to the urgency and lack of a procurement plan, supplies have to be procured through direct contracting.
- There is no clear plan to ensure the continuous supply of goods.
- There is no clear action plan for the distribution of products.
- There is a lack of standards for calculating and accounting for products.
- Products are distributed in accordance with official letters documenting needs, which takes time for registration (at least three days).
- There is a lack of control and monitoring of accounting and reporting of goods at the central and regional levels.
- There is a lack of responsible and coordinating specialists at the central level of the processes for the distribution of products.
- There is a lack of a system for accounting and reporting of products in real time at the central and regional levels.

4. Procurement-Related Measures To Support the COVID-19 Response

Adopted Measures

To provide SES with flexibility in the procurement of goods related to preventing the spread of coronavirus infection, the State adopted a number of the documents shown in Table 7.

Table 7. Government Decrees Adopted To Support COVID-19-Related Procurement

Name of the Document	Brief Description
"On Additional Measures To Prevent the Spread of Coronavirus Infection," Decree of the Cabinet of Ministers of the Republic of Uzbekistan No. 176, dated March 23, 2020, https://lex.uz/docs/4773760?otherlang=3.	The State Customs Committee of the Republic of Uzbekistan, as an exception, shall establish "green" corridors for necessary medicines, medical devices, medical equipment, and materials and substances used for their production that are transported across the customs border, and no customs duties shall be levied on these goods. Also, for medicines, medical devices, medical equipment, and materials and substances used for their production, as an exception, direct contracts are allowed by selecting the best bids without holding tenders or competitive bidding.
"On Measures To Attract External Funds To Support the Population, Budget, Basic Infrastructure and Businesses During the Coronavirus Pandemic," Decree of the President of the Republic of Uzbekistan No. 4691, dated April 22, 2020, https://lex.uz/ru/docs/4797098.	In accordance with this government decision, to strengthen the material and technical base of SES, only US$200 million was attracted at the expense of loans from the Asian Development Bank and the Asian Infrastructure Investment Bank.
"On Measures for Ordering the Circulation of Drugs, Medical Devices and Medical Equipment During the Pandemic Period of Coronavirus," Decree of the Cabinet of Ministers of the Republic of Uzbekistan No. 449, dated July 22, 2020, https://lex.uz/docs/4908750?otherlang=4.	In accordance with this government decision, COVID-19-related products were exempted from mandatory registration with the Pharmaceutical Committee of the Republic of Uzbekistan and subsequent certification, which takes a relatively short period of time (7 days). This document was active until September 2021.
"On Additional Support Measures for the Population, Industries of the Economy and Businesses During the Coronavirus Pandemic," Decree of the President of the Republic of Uzbekistan No. 5978, dated April 3, 2020, https://lex.uz/ru/docs/4797098.	Construction materials necessary for the construction of medical and quarantine facilities to combat coronavirus infection, as well as goods necessary for their functioning, were exempt from customs duties, including value-added tax, for a period until December 31, 2020. This exemption was extended until September 2021. Imported rapid tests for detecting coronavirus infection are not charged a customs clearance fee.

Planned Measure: Supply Chain Digitalization

Currently, the SES is working to obtain KOICA grant funds in the amount of US$2.7 million for the digitalization of the SES system. SES plans to create a unified system for the supervision and monitoring of the epidemiological situation in the Republic of Uzbekistan with a focus on the spread of coronavirus. Also, within the framework of this software, SES plans to introduce a system for accounting and reporting of turnover of goods.

Table 8. Proposed Budget for Establishment of a National Infectious Disease Response System

Budget line	Activity description	Budget GRAND TOTAL	2021							
			Q2		Q3			Q4		
			May	June	July	August	September	October	November	December
1	Project Implementation Unit	59,200.00	7,400.00	7,400.00	7,400.00	7,400.00	7,400.00	7,400.00	7,400.00	7,400.00
2	IT equipment	1,800,000.00	-	-	-	-	1,800,000.00	-	-	-
3	Consultants for development IT Soft	67,000.00	-	-	-	33,500.00	-	-	-	33,500.00
4	Exchange of experience and professional development	96,600.00	-	-	-	72,450.00	-	-	-	24,150.00
5	Attracting an international consultant from Korea to conduct trainings	30,000.00	10,000.00	-	-	10,000.00	-	-	-	10,000.00
6	Training for M&E	88,352.09	-	11,044.01	-	11,044.01	-	22,088.02	22,088.02	22,088.02
7	Training for using the IT Soft	51,620.71	-	-	7,374.39	-	-	14,748.77	14,748.77	14,748.77
8	Round table	16,428.57	9,857.14	-	-	3,285.71	-	-	-	3,285.71
9	With the support of Korean specialists, development of guidelines for SES laboratories on internal quality control of diagnostics of infectious diseases and detection of pathogens: - Virological laboratories - ISO 15189 (for SARS-CoV-2 and new infections, influenza); - Bacteriological laboratories - ISO 17025 (food products) and ISO 15189 (diagnostic tests).	200,000.00	200,000.00	-	-	-	-	-	-	-
10	Create an information system for accounting and control of the level of provision of the Sanitary and Epidemiological Peace and Public Health Service of the Republic of Uzbekistan with qualified specialists by categories	240,592.92	240,592.92	-	-	-	-	-	-	-
11	Provision and installation of front-end computing equipment, server computer and backup server	25,000.00	-	-	-	-	-	25,000.00	-	-
12	Organization of 14 trainings on operation and data entry into the database	21,920.00	-	-	-	-	-	-	21,920.00	-
13	Conducting an international workshop for Central Asian countries on the results of project implementation in Uzbekistan and exchange of experience	3,285.71	-	-	-	-	-	-	-	3,285.71
	GRAND TOTAL	2,700,000.00	x							

5. Proposed Operational Guidelines for SCM for COVID-19 Response

In this section, we provide some important general guidelines and principles to be followed in the development and management of SOPs. These guidelines cover the creation and revision of SOPs, management of SOPs, and staff training on SOPs. In Annex A we also present one full sample SOP (for receipt of goods into storage upon delivery by a supplier) to show what a complete SOP for a core supply chain function looks like. The style, format, and level of detail included may be useful to the MoH and its partners as they begin to create SOPs.

We propose that the following SOPs be created as a critical "core" set that covers the most important aspects of procurement and supply chain operations. The MoH and partners may wish to modify this list once the SOP creation process is underway. It is important to note that SOP creation requires inputs from a range of officers involved in the day-to-day management of these processes. The schedule should allow sufficient time for multiple iterations of and amendments to each SOP before it is finalized. This inclusive process is important for two reasons: firstly, to ensure that the SOPs accurately describe the steps and the responsibilities contained within each SOP; and secondly, to foster a sense of ownership of the SOPs among the officers who will use them.

- Budgeting/forecasting
- Supply planning
- Procurement, including:
  - Procurement planning
  - Running the procurement process, including selecting the right procurement method
  - Quality assurance in the procurement process
  - Evaluation and contract awards
  - Contract management and supplier management
- Clearance and delivery, including
  - Customs clearance
  - Receipt of stock from suppliers
- Quality control (QC), including
  - Sampling stock for QC testing
  - Handling product recalls
  - Management of expired and damaged stock
  - Supplier returns
- Storage and management of stock, including
  - General storage guidelines
  - Inventory management
  - Stock counting
  - Temperature and humidity measurement

- Customer ordering and distribution, including
    - Order placement and processing
    - Order picking and packing
    - Dispatch
    - Distribution
    - Reporting and data management

A number of excellent resources can help organizations develop sound SOPs for use in the field of SCM of medical products. In addition to the samples in Annex A, we have provided links to some of these resources:

- Perhaps the best known technical guidance that can be used for creating SCM-related SOPs is the publication *Managing Drug Supply* created by Management Sciences for Health. This is a highly detailed and comprehensive technical resource that will provide sound guidance during the SOP creation process. https://msh.org/resources/mds-3-managing-access-to-medicines-and-health-technologies/

- In addition to this resource, the MoH and its partners may find the ISO 9001:2015 standard for management systems useful. This document contains information for organizations wishing to attain this standard, including guidance that explains how SOPs support an organization's overall mandate and objectives. https://www.iso.org/standard/45481.html

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Annex A: Sample SOPs