



Healthy systems for healthy people

The impact of UNDP-managed Global Fund investments in procurement and supply chain systems in Zimbabwe



Introduction

Zimbabwe has made important strides in the last two decades to combat HIV, tuberculosis (TB) and malaria. New infections have dropped by more than 50% among adults and 80% in children born from HIV positive mothers over the last decade, and AIDS-related deaths have decreased by 60%.¹ TB incidence declined by 67% between 2011 and 2019, from 633 to 210 cases per 100,000 people.² Malaria incidence fell by 24% between 2015 and 2019, from 29 to 22 per 1,000 population at risk, with an increase in districts reporting less than 1 per 1,000.³

Despite notable progress, significant challenges remain. Zimbabwe is among the WHO's list of 14 countries that are considered high-burden for TB, multi-drug resistant TB and TB/HIV coinfection. With a 13% HIV prevalence rate, it is home to an estimated 1.3 million people living with HIV. There are an estimated 39,000 new HIV infections each year,⁴ which disproportionately impact vulnerable and marginalized populations. Economic challenges impact health service delivery and access. Following a near collapse of the health system in 2008, economic growth remains slow. Reduced fiscal space has placed increased pressure on the system to finance infrastructure, health worker retention, and the supply of essential health products, among other needs.⁵

Financial and technical support from partners has played an important role in helping the government to sustain health service coverage and prevent a reversal of progress. UNDP, through its collaboration with the Global Fund to Fight HIV, TB, and Malaria (Global Fund), has been a key player in national efforts to deliver essential prevention and treatment services for the three diseases. Beyond contributing to the large-scale expansion of life-saving disease treatment and prevention efforts, its support to build strong systems for health has been critical for ensuring such services reach the last mile and continue to sustainably address remaining gaps.

Among the most catalytic channels through which UNDP-managed Global Fund investments have helped to scale impact across the three diseases and beyond has been its support to procurement and supply chain management (PSM) systems, in line with national priorities and in coordination with other PSM partners.

This brief outlines the progress, impact, and lessons thus far from UNDP's end-to-end support to enhance PSM systems in Zimbabwe with the support of the Global Fund.

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UNDP and the Global Fund in Zimbabwe

UNDP has supported the implementation of Global Fund HIV, TB and malaria grants in Zimbabwe for nearly two decades, starting with the management of an HIV grant which it transitioned to the National AIDS Council in 2006. Based on need, UNDP resumed the role of interim Principal Recipient (PR) for the three diseases in 2009. Following the outcome of a Global Fund assessment of the Additional Safeguard Policy, UNDP transitioned the PR-ship for TB and malaria programmes to the government in 2015, with an additional safeguard through UNDP's appointment as Fund Administrator. In this capacity, UNDP continues to provide support and technical assistance to the Ministry of Health and Child Care (MoHCC) as the national PR for TB and malaria programmes, including procurement services, whilst managing the HIV grant as interim PR. UNDP-managed Global Fund investments have played an instrumental role in progress towards combatting the three diseases, contributing to 1.2 million people living with HIV receiving treatment, more than 563,000 HIV-related deaths averted and 73,880 new TB cases detected between 2006 and 2018, and more than 463,000 cases of malaria treated between 2006 and 2017.

Beyond delivering life-saving support, UNDP plays a key role in assisting the government to strengthen systems for health, leveraging its vast country presence and broader development mandate to support country-led action on the 2030 Agenda for Sustainable Development. In Zimbabwe, its interventions to build resilient and sustainable systems for health focus on support to several interconnected building blocks of the health system, most notably: 1) procurement and supply chain management, 2) public financial management and risk management systems for health, including internal audit, and 3) health information management systems, with an emphasis on human resource development across each. This work is complemented by capacity development to promote sustainability and foster an enabling environment for equitable health service delivery, including support to civil society organizations and activities to reduce social and legal barriers that impede health access for adolescent girls, young women and key populations.

Joining forces for a holistic PSM response

A strong supply chain is the backbone of a sustainable and resilient health system. A well-stocked health facility with quality-assured medicine and high-quality equipment managed by trained health personnel means that a patient can access safe and affordable treatment when it is needed.

For the medicine to be on the shelf and delivered to the patient at the right time and in the right quality, numerous interconnecting factors and players must come together across a complex system. From reliable logistics data to inform procurement planning and ordering based on the needs, to adequate storage space to prevent stock-outs, to efficient transportation and distribution to ensure health products reach their destination on time, to waste management processes to protect the health of people and the environment, each step in the chain is paramount.

With a health system comprised of some 1,600 health facilities across 62 districts and more than 120 facilities for laboratory services serving an estimated population of 16.5 million people⁶, including 1.2 million people on antiretroviral therapy (ART), **the ability for Zimbabwe's health institutions to deliver efficient and effective services amidst geographic, financial, and human resource capacity constraints represents no small feat.** While the government, with the support of numerous partners, has made significant investments over the years to strengthen different aspects of the supply chain, persisting gaps have resulted in inefficiencies and wasted resources, with deleterious consequences for health outcomes. Challenges with stock-outs at health facilities, for instance, were driven by an array of issues ranging from inadequate infrastructure for storage of health products and insufficient funding and staff to manage the supply chain, to gaps in forecasting and weaknesses in ordering systems, to duplication and fragmentation of supply chains across different programmes.

¹ Extended ZNASP III (2015-2020)

⁴ UNAIDS 2018 HIV estimate

² Global TB Control Report, 2011 & 2019

⁵ Zimbabwe National Health Strategy 2016-2020

³ Zimbabwe HMIS data, 2019

⁶ World Bank, 2018



Identifying the gaps to target the solutions

Recognizing the interdependency across the different PSM challenges and the critical need for a response to address the system as a whole, the **MoHCC commissioned a comprehensive assessment of the supply chain for pharmaceuticals in 2013** to pave the way forward for harmonized action. UNDP and the Global Fund played a lead role to guide the assessment, in coordination with other stakeholders, including through the development of a costed action plan based on the identified gaps. The assessment marked **an important milestone for national efforts to bolster the supply chain for health**, helping to catalyze support from multiple partners and to target investments in the most efficient way possible. For the first time, it provided a single picture of challenges across the entire chain, facilitating action with a clear indication of the funding and activities required. With this evidence in hand, the MoHCC was best positioned to advocate for the needed support. UNDP's ongoing support to the supply chain system, including the construction of National Pharmaceutical Company (NatPharm) warehouses, renovation of health facilities to improve storage and space conditions, and provision of equipment, including solar systems, has been largely informed by the outcome of the assessment. **UNDP collaborated again with partners in 2016 to conduct an assessment specifically focused on the supply chain for laboratories.** An important complement to pharmaceutical supply chains, the laboratory assessment guided timely, high-impact investments in systems that assure the quality of health products and facilitate diagnostic services for disease treatment efforts.

“The [lab] assessment was a big success because it looked at the laboratory system as a whole. It was the first assessment of such a magnitude and helped us to approach stakeholders with comprehensive evidence of the support required.”

– Agripa Mtambara,
Laboratory Logistics Unit
Manager, Department of
Laboratory Services, MoHCC



Smart financing for strategic investments

While the pharmaceutical assessment and action plan provided the blueprint for progress, its **implementation called for significant resources** to cover activities across 17 action areas over the immediate and long-term. Under the UNDP-managed 2014-2017 Health Systems Strengthening Grant, the Global Fund contributed an initial US\$36.2 million to nationally-prioritized supply chain and infrastructure support informed by the assessment and later increased the allocation to US\$61.3 million following reprogramming of savings realized through grant implementation. This funding enabled the government to make important headway on urgent gaps, particularly on issues of infrastructure and storage space. By leveraging its role as interim PR of the Global Fund HIV grant as well as previously-managed grants, UNDP has been able to continuously provide a crucial source of resources to strengthen national supply chains.

As a best practice for sustainability, **UNDP has achieved notable savings through the efficiency of its procurement activity as PR.** With the endorsement of the Country Coordinating Mechanism and approval of the Global Fund, it has managed to reprogramme part of these savings to further support supply chain strengthening activities. In particular, Zimbabwe has benefited from access to UNDP's global procurement architecture, including long-term agreements with suppliers, which allow it to create economies of scale and minimize the need for costly emergency procurement. UNDP has likewise supported price negotiations with suppliers, through which it achieved a landmark cost for anti-retroviral medicines (ARVs) in 2016 and 2017. These developments allowed UNDP to save US\$140 million under the New Funding Model grant and US\$65 million in savings and interest as PR of the current HIV grant, freeing up resources for further investments in PSM. This has enabled investments from the Global Fund and other partners to maximize health outcomes from existing resources, beyond disease-specific targets.

“All the support that has come out of the assessment has benefited the whole health system, irrespective of where the source of funding came from.”

– Forward Mudzimu,
PSM Manager, MoHCC



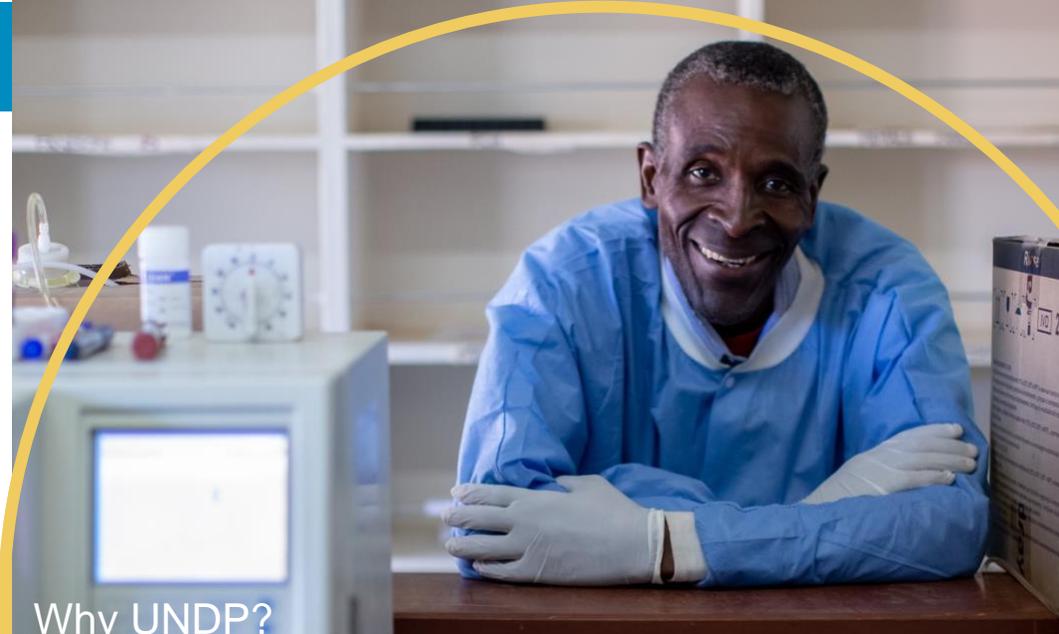
Coordination for effective action

Strong coordination has been an essential factor in successful planning and implementation of all PSM interventions. Beyond providing a mechanism for all stakeholders to join forces to develop a roadmap, the assessment also recommended initiatives to further **enhance existing PSM governance institutions**. A key activity was the formation of an all-encompassing PSM coordination body, to be headed by the Directorate of Pharmacy Services (DPS) in the MoHCC. UNDP actively participates in PSM stakeholder meetings and its sub-committee. An important outcome of these institutional developments has been **greater interlinkages between technical-level issues and policy and funding decisions**.

“It has made a difference to have all partners, donors, the Ministry, and implementers like NatPharm, MCAZ, and ZNFPC sitting at the same table. It has shortened the time lag between decisions and implementation.”

– Misheck Ndlovu, Supply Chain Management Advisor, Directorate of Pharmacy Services, MoHCC

In addition to ensuring strong lines of communication with MoHCC counterparts, **UNDP works closely with other PSM actors** to deliver on supply chain management activities, including NatPharm, the Medicines Control Authority of Zimbabwe (MCAZ), Chemonics, UNFPA, UNICEF, Clinton Health Access Initiative, Médecins Sans Frontières, University of Zimbabwe, USG PSCM Contractor and other key partners in the PSM ecosystem. Effective collaboration has enabled UNDP to offer the MoHCC consistent and coherent support across all priority functions. UNDP’s close working relationships with technical counterparts in the MoHCC has likewise been key for building on the initial action plan developed in 2013 to respond to the continuously evolving procurement needs and resource availability, facilitating prioritization processes based on value for money and risk mitigation.



Why UNDP?

As a development partner supporting programmes and policies across multiple sectors in Zimbabwe, UNDP, with Global Fund support, brings unique added value to national efforts to strengthen the supply chain for health. Its comparative advantage is derived from its:

- ⇒ **Direct procurement experience:** UNDP’s experience as PR of Global Fund grants and ongoing role as a major buyer and supplier of ARVs enables it to build on existing partnerships, localized expertise in health procurement and supply chains, and programmatic cost savings to directly benefit systems strengthening activities.
- ⇒ **Proactive end-to-end support model:** Each month, UNDP supports national supply chain actors on more than 100 procurement activities, working closely with the government to address challenges from the national level to the last mile.
- ⇒ **Capacity development expertise:** As a development actor, all UNDP assistance is underpinned by capacity development, with the aim to foster national ownership and bolster existing systems and policy frameworks.
- ⇒ **Integrator role:** Through close working relationships with all PSM stakeholders, UNDP supports nationally-led coordination bodies, including through comprehensive gap assessments to facilitate coherent responses.
- ⇒ **Emphasis on sustainability:** With expertise spanning social, economic, and environmental dimensions of development, UNDP is well positioned to promote supply chain strengthening activities that are environmentally friendly and contribute to cost savings and efficiencies.



End-to-end supply chain assistance

UNDP's PSM support is underpinned by a **holistic approach that looks at all components of the system**. UNDP assists national stakeholders to prioritize activities based on an understanding of strengths and gaps at each stage of the PSM cycle and the interactions between them – from selection and quantification, to procurement and storage, to distribution and rationale use of medicines, to the information systems, quality assurance infrastructure, and policy environments that cut across all of them. End-to-end capacity development, targeting infrastructure, systems, and people, helps to address bottlenecks that affect the entire supply chain and contributes to multiplier effects that support improved health outcomes.

The following sections highlight key areas of impact achieved through UNDP support and Global Fund investments to strengthen health supply chains in Zimbabwe.

Figure: The procurement and supply chain management cycle





Quantification and forecasting

Availability of reliable logistics data on stock levels, consumption rates and losses, with effective systems to utilize the data for demand forecasting, is vital for procurement planning. Precise quantification ensures that the MoHCC is able to mobilize the needed resources to guarantee uninterrupted supply of medicines and minimize waste from duplication or over-purchase of supplies. While the annual national quantification exercises in Zimbabwe have remained strong due to the participatory consultative processes driven by the DPS, **issues with data collection, reporting, and timely and accurate submissions have made quantification challenging** for certain essential medicines. In 2013, health facilities reported that 50% of required medicines were not available most of the time, reflecting weaknesses along interconnected facets of the supply chain, including at the stage of supply planning.

To further streamline processes under the leadership of the DPS, with support from USAID Chemonics, **UNDP has provided multi-faceted support to address human resource capacity, data systems, and coordination platforms that together influence quantification.** The establishment of the National PSM committee by the MoHCC helped to centralize the forecasting function and harmonize data across programmes. As part of the core quantification team, UNDP works closely with the MoHCC and partners to jointly develop assumptions for the planning exercise and enhance related standard operating procedures.

At the same time, UNDP's investments in capacity building of health personnel at the provincial, district and health facility level, including training and sensitization related to logistics management systems, has helped to boost the quality and completeness of data received for national quantification processes.

“The capacity development has come in handy to carry out responsibilities around quantification, selection, and ensuring that we come up with the standards that are necessary for the sector.”

– Ropafadzai Hove, Director Pharmacy Services, MoHCC

“[The trainings] have led to more responses on reporting. Now when we ask [health personnel] for data, they appreciate why it is needed for quantification and the role that they have in the whole cycle.”

– Petronella Murambinda, PSM Analyst, MoHCC

Strengthening of logistics management information systems, including upgrades to the enterprise resource planning system Navision, the roll-out of the Zimbabwe Assisted Pull System (ZAPS), and software configuration to pilot an electronic logistics management information system (eLMIS) in 11 health facilities linked to the central medical stores, have likewise enhanced the timeliness and availability of stock levels and consumption data key for supply planning.





Warehousing and storage

With health infrastructure dating back to the 1980s and an increase in the number of people placed on treatment for HIV, by 2013, the country faced significant shortage of storage space at all levels of the public health system, including NatPharm facilities. More than half of the storage was used for ARVs alone, while accumulation of expired health products took up much-needed space, and issues of temperature control put stored medicines at risk of quality issues. While the MoHCC made the construction and renovation of warehouses and health facility storage spaces a top priority, recognizing the immediate implications for health service access and quality, the intensive resource requirements posed a significant challenge.

UNDP, through the Global Fund, has invested nearly US\$30 million in warehousing and storage enhancements since 2014. A major element of this support has been for the **construction of new NatPharm-managed provincial warehouses in Masvingo and Mutare** and the central medical store in Harare. Completion of the Masvingo warehouse in 2018 produced 1,900 m² of storage space, four and a half times the size of the previous warehouse. UNDP also supported the warehouse through the installation of a 200 kW solar system, provision of storage and handling equipment, and establishment of a fire fighting system. It is now supporting the construction of a second provincial warehouse in Mutare, for a capacity of 2,560 m², with planned completion by mid 2021. “Previously the storage space was not sufficient, particularly with the increase in the number of ARVs as the number of people on treatment increased,” noted Charles Mwaramba, Operation Manager,

NatPharm, “so the increased storage space in Masvingo helps.”

UNDP also supported the construction or renovation of 128 pharmacy stores in clinics and hospitals across six provinces and the renovation of 112 health facilities for TB infection control and diagnosis and 8 facilities for multidrug-resistant TB (MDR-TB) management. In 2018, UNDP renovated 1,205 m² of floor area across pharmaceutical stores in the country and constructed 4,233 m² of new stores. **Beyond the increase in physical space, the support has greatly improved storage conditions** by ensuring that new and pre-existing facilities are fully fitted with proper equipment. The installation of shelves and air-conditioning units, procurement of barcoding equipment, and provision of other fittings support the quality and safety of stored products and offer low-cost means of maximizing the utility of existing space. Forward Mudzimu, PSM Manager, MoHCC, noted, “We have seen a significant improvement in terms of good warehousing management, with shelves for storage enabling optimal use of the space available.”

Another important investment area has been in improving the cold chain for vaccines. In close coordination with UNICEF, the main partner for the national vaccine programme, UNDP has carried out extensive **procurement to augment the cold chain infrastructure**, including installation of 26 cold rooms, hundreds of specialized cold chain equipment such as refrigerators, cold room compressors, air-conditioners, and vaccine boxes, and over a thousand data loggers, among other products. This has contributed to greater vigilance in temperature monitoring and quality control for vaccine management.



128 pharmacy stores at health facilities constructed/renovated

120 health facilities renovated for TB and MDR-TB management

4,233 m² cumulative area of new pharmaceutical stores constructed in 2018

Powering the system: Solar for Health

Among the most cross-cutting impact areas of UNDP's health infrastructure interventions has been the implementation of the Solar for Health (S4H) initiative, which it has rolled-out through a phased approach based on availability of funding. **Access to reliable sources of electricity is essential for the proper functioning of the health system** and equitable health service delivery. Challenges with power access at health facilities, warehouses, and laboratories in Zimbabwe, particularly in rural and remote areas, impeded the use of controlled temperature storage of medicines and vaccines. It also affected use of electronic logistics and reporting systems that ensure accurate quantification, distribution, and management of health products, diagnostic systems that support quality control, and access to patient data and life-saving medical devices to enable uninterrupted access to critical treatment.

Since 2017, **UNDP has installed solar energy photovoltaic systems at more than 400 health facilities** across Zimbabwe's 10 provinces as well as 4 district hospitals, targeting four priority areas: the health information system, the cold chain, maternity wards, and laboratories. In total, this has added 4,813 kWh capacity to power Zimbabwe's health system in hard-to-reach areas, with each solar system tailored to the specific energy needs of each facility. Through the inclusion of a remote tracking system, S4H also enables the MoHCC to monitor the performance and usage of the panels, an important function to facilitate real-time monitoring and timely reaction to issues.

The solar panel installation remedied the problem of intermittent electricity supply and power cuts lasting up to 18 hours a day at health facilities, with immediate implications for service delivery. Further to enabling uninterrupted treatment at the primary care level, the availability of consistent energy has eliminated IT challenges that undermined investments in systems for data collection and supply chain management. As a result, health personnel are equipped with the necessary information to monitor the quality and safety of health products and ensure sufficient stocks of medicines and other health products. Along with the immediate benefits of solar power, the **transition away from diesel-powered energy reduces negative environmental impact from CO₂ emissions and contributes to cost savings that can be reinvested in the health sector**. Following the installation of a 10 kW solar system in a hospital in Manicaland, the Hospital Director noted, "it has reduced our electricity costs" and "will go a long way in...enhancing quality service delivery at the institution." UNDP is now completing a multi-country study of the S4H pilot to further understand the extent of cost savings achieved to date.

UNDP is working closely with the MoHCC and other partners to integrate lessons learned from the S4H pilot into its future scale-up. Ongoing **development of a sustainability plan** will help to address some of the initial implementation challenges related to issues of ownership for the management and continued maintenance of the solar systems. The plan will also help to inform a coordinated response from other partners, including UNICEF and potentially the private sector.

“Most primary healthcare facilities located remotely are off grid and the solar project transformed the services of such facilities where basic procedures were not possible due to unavailability of a power source.”

– Clive Marimo, Director for Hospital Planning and Infrastructure, MoHCC





Distribution system

An effective **distribution system is key to maintaining an uninterrupted supply of quality health products and minimizing loss and waste.** Following a period of economic turmoil in Zimbabwe and subsequent capacity constraints at health facilities, the country transitioned from a pull distribution system, in which health facilities ordered medical supplies based on needs, to six different push systems, in which set packages of products were ‘pushed’ from central vendors to service delivery points each quarter for different programmes, regardless of stock levels. This contributed to irregular distribution, resulting in overstocking and expiry of medicines at many health facilities, while the need to manage several parallel systems placed significant burden on health facility staff, often diverting time away from clinical duties and producing inadequate record keeping.

The **government piloted the Zimbabwe Assisted Pull System (ZAPS) in 2014 to reduce fragmentation and improve efficiency, with financial and advisory support provided by UNDP** along with other technical partners including USAID, UNICEF, and UNFPA. Since the launch of ZAPS, now covering all districts, the MoHCC has recognized several positive developments. Because orders are based on physical stock counts at the health facility level, the resulting products distributed are better tailored to the specific requirements of each facility, as opposed to the distribution of standard packages of essential medicines. Ropafadzai Hove, Director, DPS, MoHCC said that the ‘assisted’ function of ZAPS, in which district monitoring teams conduct quality checks and provide mentoring and support to health facility staff to establish needs and place orders to NatPharm, has helped to “improve data quality at hospital and primary level. Quality information on stock availability at health facility level has also been helpful for [national] quantification activities.” While an analysis of the cost-effectiveness of ZAPS will be completed this year, it has been observed that the consolidation of stock management tools into one integrated platform has eased the workload for clinical staff, suggesting cost savings in terms of staff time. Still, as ZAPS remains a hybrid pull and push system, the ultimate goal

for the MoHCC is to gradually return to an autonomous pull system, once sufficient human resource capacity, governance, and infrastructure is in place.

Another critical element of distribution is **ensuring safe and efficient transportation of health products.** In the past, lack of sufficient vehicles in Zimbabwe would contribute to stock-outs or force health facilities to pick up products using alternative transport at their own cost. Building on the support that UNICEF provided through **donation of trucks** in 2012, UNDP supported the MoHCC in 2014-2015 to provide six new refrigerated trucks to NatPharm. In 2017, UNDP supported NatPharm/ZAPS with 35 double cabs, which has helped to facilitate effective supervision of ZAPS and regular movement of products from central and peripheral warehouses to some 1,600 health facilities across the country.



Pharmaceutical waste management

Proper mechanisms for the management of medical waste is an integral element of achieving optimal use of health products in a country. In Zimbabwe, only some major hospitals had the capacity to incinerate expired products, with a lack of special incineration facilities persisting across provinces. Health facilities faced onerous approval processes to dispose of medicines and often had to travel long distances to find disposal points approved by the environmental regulatory agency. As a result, expired products accumulated for many years at facilities, occupying valuable storage space. In response, **UNDP supported NatPharm in 2018 to install two new central incinerators**, one in the northern and southern region, to serve as disposal points for all facilities in the country. This was **complemented by the development of a waste management plan** to further optimize disposal processes. The MoHCC envisions that the incinerators will help to reduce the preparatory work and travel time required for health facilities to safely dispose pharmaceutical waste, ultimately contributing to better management of health products, storage space availability, and quality service delivery at primary care facilities.

Cross-cutting investments for strong supply chain management

Collection and reporting of logistics information is essential for every aspect of supply chain management, from driving decision-making for supply planning, to monitoring the distribution and utilization of medicines. **UNDP has made extensive contributions to facilitate enhancements to several information systems for PSM.** In particular, it provided resources to support the MoHCC with the **licensing and maintenance of Navision**, a Microsoft enterprise resource planning software used for logistics management by NatPharm. Initially adopted in 2003, the system was updated with a web-based version in 2014 and subsequently configured to enable multi-faceted functionality. It now serves as an integrated financial, inventory management, and supply chain management system, connected to all NatPharm branch stores for visibility of inventory across the country. UNDP support to finance the Navision license, at US\$25,000 a year, has helped to ensure continuous upgrades to the software. MoHCC staff have noted that when systems become outdated in the absence of such upgrades, they experience bugs that lead health personnel to revert to using manual systems, creating inefficiency and accountability issues in logistics management. To further support NatPharm in leveraging the latest technologies to enhance business processes for warehouse and procurement management, **UNDP also invested US\$624,000 in 2016 for the roll-out of radio-frequency identification (RFID) technology** at NatPharm stores. Through the use of radio waves to track inventory, with data sent to a central database by RFID readers, the system contributes to improved accuracy and reduced time for processing and shipping orders.

Building on these developments, a key **next step for the country is the establishment of an eLMIS** to provide a single centralized system to collate end-to-end logistics information for all pharmaceutical and laboratory products. The MoHCC began preparatory work for the eLMIS in 2017 and initiated its roll out to health facilities in 2019 through a phased approach. Leveraging its expertise supporting the piloting and scale-up of eLMIS platforms in numerous countries, UNDP is providing technical and financial support to the process, including through facilitation of learning visits to Zambia and Rwanda. The introduction of a digital system providing real-time data visibility at all levels of the supply chain in Zimbabwe, including through integration of existing LMIS like Navision, will help to ensure the consistent availability of accurate, reliable, and complete data for decision-making and supply chain management. Expected benefits include accurate forecasting and quantification, timely budget preparation, and better early preparedness response to mitigate risks of stock-outs.



People



Systems



Quality

Human resource support

The systems, technologies, and procedures in place to ensure the proper functioning of health supply chains are only as effective as the people who implement them. Since the economic downturn in Zimbabwe, the country faced significant shortage of staff responsible for supply chain activities across all levels of the system as well as skills gaps among available personnel. MoHCC investments to expand training opportunities for pharmacy cadres through educational institutions, along with in-service trainings for existing staff provided by the DPS, helped to augment capacities, yet budget constraints limited the government's ability to fully expand training institutions in line with growing human resource needs.

While UNDP promotes the transfer of skills through its regular engagement with the MoHCC, NatPharm, MCAZ, and other national partners to support upstream supply chain processes such as quantification and strategy development, it also **helps to capacitate health personnel at all levels to have the necessary skills, knowledge, and motivation to effectively carry out their functions.** All UNDP PSM support is underpinned by capacity development, ensuring that investments made in infrastructure or systems are backed by the right mix of people and skills to sustain them.

UNDP initiated **two major training programmes** in 2017, a short certification course by the Chartered Institute of Procurement and Supply (CIPS) and an 11-18-month post-graduate course in pharmaceutical procurement and supply chain offered by the Empower School of Health. The CIPS programme offered an introduction to key procurement concepts, including a module on UNDP's approach to PSM, while the Empower course enabled participants to develop in-depth understanding of the entire supply chain and address bottlenecks. The participation of MoHCC representatives in UNDP global PSM annual workshops has also allowed the transfer of knowledge across countries supported by the Global Fund.

As of 2019, **48** staff from NatPharm, MoHCC and UNDP have graduated from the Empower programme and **120** personnel from NatPharm, MoHCC, and UNDP have completed either level 2 or 3 CIPS certification. An important aspect of the trainings has been their **holistic focus and scope**, targeting not only pharmacists but also finance, administrative, lab, procurement and other health personnel at the national, provincial, and district levels. UNDP will continue to support the MoHCC to respond to demand for further trainings, which **complement national efforts to professionalize procurement** within academic institutions. A mentorship programme leveraging individuals who have already gone through the training will also be explored.

“The two courses have helped to bridge the gap between people and the system, [bringing together] clinical mentalities with appreciation of the supply chain and an understanding of why things are done and what could be done better.” – PSM Specialist, MoHCC

While investing in the future of the health workforce, UNDP has also helped to **prevent staffing gaps in vital areas** of the health system, including pharmaceutical and laboratory supply chain management. In 2018, UNDP support to augment salaries with monthly retention allowances helped to retain over 24,160 critical health workers.

“I believe the trainings have had an impact not only for those in the head office, but especially for people implementing at the district level. For non-pharmacists, they get to learn what is behind the procurement planning process.”
– PSM Specialist, MoHCC

Quality assurance of health products

The **MoHCC has given great attention to the role of quality assurance**, working closely with MCAZ, the national regulatory agency, to ensure that medicines are assessed for quality, safety, and efficacy. Several weaknesses persisted, however, including lack of adequate equipment, poor mechanisms for reporting of adverse drug reactions, and limited application of quality control throughout the supply chain. Since 2010, UNDP has supported MCAZ and the MoHCC to address these gaps, in coordination with other partners.

WHO prequalification for quality control laboratory: Among the most notable outcomes of UNDP's support has been the **achievement of WHO prequalification of the MCAZ national quality control laboratory in 2014**. Support is ongoing to achieve prequalification for its microbiology lab, anticipated by 2020. UNDP assisted MCAZ throughout the 14-month process, from engaging a WHO specialist to assess nonconformities of the laboratory, to supporting extensive refurbishment and procurement of critical equipment for diagnosis and reporting. MCAZ has indicated that the existence of a WHO prequalified facility has ultimately enhanced its capacity to execute its regulatory mandate to the fullest, ensuring that its standards conform to international standards. The WHO prequalified laboratory for quality control of medicines in Zimbabwe has also benefited the region more broadly, serving as a quality control laboratory for other countries lacking labs meeting internationally recognized standards.

“It has impacted on the programmes we can do in the country and the medicines available. Having the right equipment has meant enhanced output, ultimately improving the level of access and efficiency. This achievement went hand in hand with improving quality management systems internally.”
– Fundo Tembo, Administration Manager, MCAZ

Strengthening the pharmacovigilance system: A strong pharmacovigilance system ensures that medicines used in the country are continually assessed for safety. It relies primarily on reports received from personnel at service delivery points and the general public to raise cases of adverse drug reactions. To enhance

real time reporting for pharmacovigilance, **UNDP worked with the Department of Laboratory Services (DLS) and MCAZ to launch an electronic adverse drug reaction (eADR) system in 2018.** Previously, the DLS received paper reports that would need to be captured in spreadsheets for entry into the WHO ADR database. With the new system, the reporting completed at service delivery level is now sent directly to the WHO database and received in real-time by MCAZ to conduct analyses. The government expects to see increased report submissions thanks to the greater flexibility enabled by the eADR, which allows health facility staff to report from anywhere with internet, including through a mobile application, and reduces the costs associated with sending paper-based reports. Additionally, UNDP has provided capacity development through a training of trainers model to enhance the capacity of health personnel that collect data on adverse drug reactions, which has helped to increase reports received from trained provinces.

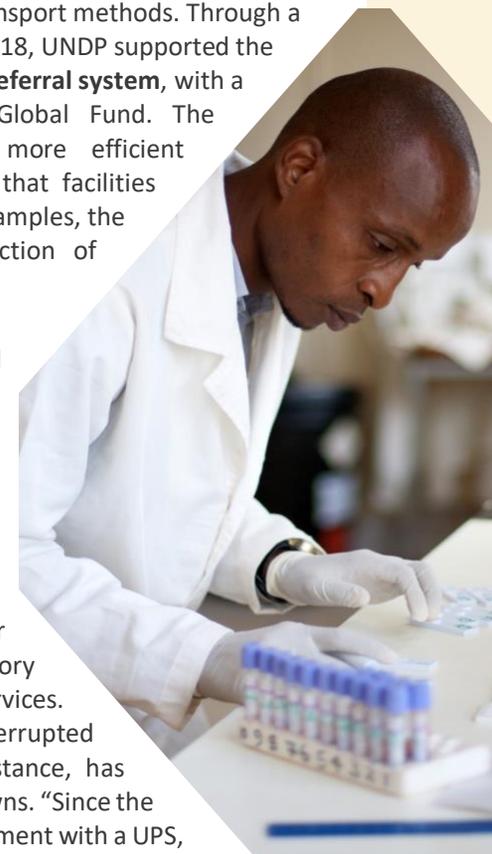
Medical laboratory system

Viral load testing: Access to routine viral load testing, which enables the detection of HIV, is key for prevention and improving treatment quality. Viral load scale up is an important goal for the country, but resource constraints and poor functioning equipment hinder its achievement. **Between 2016 and 2018, UNDP supported the DLS to obtain lease agreements for 7 viral load testing machines to service facilities throughout the country, as part of a bundled package** including training, reagents, remote support, and continued servicing and maintenance of the machines by the manufacturer. The contract was **renewed in 2019**, increasing the number of machines to 10 and expanding the scope to include servicing of non-Abbott machines. As Agripa Mtambara, Laboratory Logistics Unit Manager for the DLS explained, the bundling “does away with the issue of having to find service contracts which can be more expensive, and it means the manufacturer has an obligation maintain the machine. It also has the advantage of accessing the

latest technology.” The bundled package proved more cost-effective than procuring the reagents and servicing contract separately from the machine, while the rental arrangement assured that the machines would be continuously maintained.

Integrated sample transport system: Proper collection, preservation, and transportation of specimens for testing is critical for the quality of laboratory results. In Zimbabwe, the informal specimen referral system connecting lower level laboratories to central testing points suffered from coordination challenges and lack of supervision across numerous transport methods. Through a **mapping of all laboratory facilities** in 2018, UNDP supported the DLS to **devise an integrated specimen referral system**, with a US\$869,000 contribution from the Global Fund. The government expects that through more efficient transportation and greater assurance that facilities will receive test results from collected samples, the system will facilitate increased collection of samples and uptake of tests.

Laboratory equipment: Through Global Fund support, UNDP has invested in the **procurement, installation and servicing of equipment to ensure the full functioning of provincial and district medical laboratories.** This includes provision of 300 air-conditioning units for 90 labs. The support has reportedly made a major difference in the capacity of the laboratory to continuously provide key testing services. The provision of more than 150 uninterrupted power supply (UPS) machines, for instance, has mitigated issues with machine breakdowns. “Since the Global Fund supported us to fit all equipment with a UPS, we have witnessed a reduction in machines blowing out,” noted Mtambara, DLS.





Building towards a sustainable future

UNDP will continue to work closely with the MoHCC and other partners to lay the foundation for a resilient and sustainable health system supported by effective procurement and supply chain management, building on the lessons learned to date.

Key success factors thus far include:

- **National ownership** and a strong evidence base has been vital for coordination and resource mobilization to implement priority areas of the national action plans for pharmaceutical and laboratory supply chain strengthening.
- **Effective communication** lines between all actors implicated in PSM activities was key. UNDP's close working relationships with national counterparts, for instance, allowed quick responses to any issues that arose, as well as ongoing capacity development and skills transfer throughout the implementation process.
- An **end-to-end approach** encompassing a focus on improving infrastructure, leveraging technology, building human capacity, and enhancing systems and processes for effective management maximized the value of investments in any single area. A new logistics system will not improve decision-making without the electricity to function, just as an increase in storage space will not secure proper stock levels and quality assurance of health products without sufficient personnel to manage it.



This case study is based on a number of interviews with government and technical partners in Zimbabwe conducted in 2019. Information was supplemented by data from the following sources:

Comprehensive Assessment of the Supply Chain for Health Commodities in the Public Sector in Zimbabwe, MoHCC and UNDP, 2014

Zimbabwe Comprehensive Laboratory Assessment, MoHCC, 2016

UNDP Supply Chain Strengthening Activities Update: Global Fund NFM HIV Grant Implementation Update, 2018

UNDP Support Services to MoHCC: Capacity Development 2015-2017 End of Project Report