WILPUNT

GLOBAL HEALTH SUPPLY CHAIN PROGRAM – TECHNICAL ASSISTANCE
SOUTH AFRICA

Year 5 Quarter 1, Quarterly Report

CONTENTS

FIGURES

TABLES

ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
AMD	Affordable Medicines Directorate
API	Application Programming Interface
ARC	Africa Resource Centre
ARV	Antiretroviral
ART	Antiretroviral Therapy
BEC	Bid Evaluation Committee
BSC	Bid Specification Committee
CFO	Chief Financial Officer
CHAI	Clinton Health Access Initiative
CMU	Contract Management Unit
EDP	Essential Drugs Program
EML	Essential Medicines List
FY	Financial Year
GHSC-TA	Global Health Supply Chain Program – Technical Assistance
GoSA	Government of South Africa
HIV	Human Immunodeficiency Virus
HTA	Health Technology Assessment
HOPS	Head of Pharmaceutical Services
HR	Human Resources
IMAT	Improved Medicine Availability Team
IT	Information Technology
KPI	Key Performance Indicator
M&E	Monitoring and Evaluation
MHPL	Master Health Product List
MMD	Multi-Month Dispensing
MMDS	Medicine Master Data System
NDoH	National Department of Health
NEMLC	National Essential Medicines List Committee
NHC-SC-PS	National Health Council – Sub-committee – Pharmaceutical Services
NHC-TAC	National Health Council – Technical Advisory Committee
NHI	National Health Insurance
NSC	National Surveillance Center
PHC	Primary Health Care
POC	Proof of Concept
PPE	Personal Protective Equipment
PrEP	Pre-exposure Prophylaxis
PST	Provincial Support Team
PTC	Pharmaceutical and Therapeutics Committee
Q	Quarter
SAHPRA	South Africa Health Products Regulatory Authority
SIMA	Strategy to Improve Medicine Availability
SITA	State Information Technology Agency
SLA	Service Level Agreement
SOP	Standard Operating Procedure
STG	Standard Treatment Guideline
SVS	Stock Visibility System
TA	Technical Assistance
TB	Tuberculosis
TEE	Tenofovir/Emtricitabine/Efavirenz
TLD	Tenofovir/Lamivudine/Dolutegravir
TOR	Terms of Reference
TROA	Total Remaining on Antiretroviral Therapy

USAID	United States Agency for International Development
UAT	User Acceptance Testing
WMS	Warehouse Management System

EXECUTIVE SUMMARY

INTRODUCTION

South Africa remains at the center of the global AIDS epidemic and has one of the highest burdens of tuberculosis (TB) in the world. An efficient and effective health supply chain that improves medicine availability is critical to addressing that disease burden. With this in mind, the United States Agency for International Development (USAID) launched the Global Health Supply Chain Program – Technical Assistance (GHSC-TA) in South Africa in September 2016. The program provides technical assistance to the South African government to strengthen public health systems and supply chains to advance an AIDS-free generation and contribute to the achievement of universal health coverage.

GHSC-TA provides technical assistance directly to the Affordable Medicines Directorate (AMD) of the National Department of Health (NDoH), as well as to the pharmaceutical services directorates of the provincial departments of health (PDoHs). The overall aim of the program is to assist the government in improving access to, and availability of the medicines and related commodities needed to prevent and treat HIV/AIDS, TB, and associated conditions and disorders.

PURPOSE OF THIS DOCUMENT

This quarterly report details GHSC-TA program activities and achievements by objective and, where possible, provides results for each of the six objectives against key performance indicators (KPIs).

YEAR 5 QUARTER 1 ACTIVITIES AND ACHIEVEMENTS

Year 5 Quarter (Q) 1 activities continued to focus on strengthening the health supply chain at the national and provincial levels. At the provincial level, GHSC-TA continued to provide support through the provincial support team (PST), which facilitates the implementation and institutionalization of supply chain reforms in the provinces. In addition, the team continued with efforts to support the Government of South Africa (GoSA) to strengthen the medicine supply chain in response to the spread of Covid-19. Program activities are segmented into eleven main projects, representing capacity-building interventions across multiple functional areas. These activities align with the six program objectives. A high-level overview of activities and accomplishments for each objective follows.

OBJECTIVE 1: IMPROVE SELECTION AND USE OF MEDICINES

During the period under review, GHSC-TA continued to work with the Essential Drugs Program (EDP) of the AMD to strengthen the selection and use of medicines. Specific achievements included updating the Pharmaceutical and Therapeutics Committee (PTC) Guideline Implementation Plan to assist in the National PTC Guideline roll out, developing the KwaZulu-Natal Provincial Formulary Report based on an analysis of the formulary against three-year provincial procurement data, and developing a national analysis of the use of albendazole and mebendazole, as well as for nystatin and miconazole. Support continued to be provided to the National Essential Medicines List Committee (NEMLC) and Tertiary and Quaternary Expert Review Committees, as well as with the review of the Topic Prioritization Framework and Health Technology Assessment (HTA) Methods Guide developed by the NDoH.

OBJECTIVE 2: SUPPORT OPTIMIZATION OF THE SUPPLY CHAIN

During the first quarter, GHSC-TA delivered a new medicine budget plan, based on a forecast generated by the team by product and health establishment, for GoSA financial year (FY) 2021-2022. The budget has been reviewed and, in principle, approved by the Chief Financial Officer (CFO) forum. The monthly demand planning process, currently occurring in four provinces, continued despite Covid-19-related challenges, and implementation was initiated in one additional province. The team also supported the Contract Management Unit (CMU) with developing the in-contract demand forecast to enable robust supplier discussions, and trained two CMU team members as part of the handover process. In support of establishing the centralised demand planning team, GHSC-TA supported AMD with the recruitment of two demand planners, scheduled to begin work in January 2021.

GHSC-TA continued to move the informed push approach forward, completing the proof of concept (POC) in the Free State. The program also initiated Phase I deployment of the informed push process in the North West province, including three stock visibility system (SVS) sites and one RxSolution site. GHSC-TA also began work in four provinces focused on setting the minimum and maximum stock levels, a key enabler for the informed push process.

The demand planning team provided further support to NDoH in updating the Covid-19 priority list. As the first wave of Covid-19 infections started diminishing during this period, the team regularly updated the demand forecast based on both the priority list and actual medicine usage. A final forecast was published at the end of Q1 of Year 5 to build in the second-wave infections observed in the Eastern Cape.

OBJECTIVE 3: STRENGTHEN GOVERNANCE

During this period, GHSC-TA continued to support AMD and the provinces to strengthen governance. The team worked with the Free State to finalize the revision of the service level agreement (SLA) between the depot and demanders. The team also worked with AMD to review the SLAs between provinces and the State Information Technology Agency (SITA) in relation to the loading of National Stock Numbers (NSN), and the development of an agreement between NDoH and SITA for the loading of master data on warehouse management systems, and the extraction of transactional data for use on the National Surveillance Center (NSC). In contracting and contract management, GHSC-TA assisted AMD with developing rules to promote transparency and consistency in the evaluation of bids; facilitated the review of the terms of reference for the Improved Medicine Availability Team (IMAT), for presentation at the National Health Council Sub-Committee for Pharmaceutical Services (NHC-SC-PS), and drafted a Multi-Month Dispensing (MMD) policy. GHSC-TA continued to support AMD and provincial pharmaceutical services with the response to the Covid-19 pandemic. The support included managing meeting proceedings and tracking activities and risks.

OBJECTIVE 4: IMPROVE WORKFORCE MANAGEMENT

In North West, GHSC-TA transitioned its workforce management support interventions to the management of Mmabatho Medical Stores, the Administrator, and the Acting Chief Director: Tertiary and Clinical Services. This transition is aimed at supporting the continued development of an effective structure to facilitate pharmaceutical service delivery in the province.

OBJECTIVE 5: STRENGTHEN INFORMATION SYSTEMS AND INFORMATION MANAGEMENT

During Q1, GHSC-TA continued implementation of the Medicine Master Data System (MMDS) with the roll out of the formulary tool for the Free State provincial formulary and those of health establishments in Fezile Dabi district. The program also extended the reach of automated stock

availability reporting for health establishments not employing SVS to the Northern Cape, with the NSC now receiving automated reporting from many health establishments in this province. Additionally, GHSC-TA facilitated improvements to the NSC by completing its migration to an improved server and hosting environment and completing the testing phase with selected staff from AMD. This migration also provided the opportunity to publish two newly developed dashboards, namely the demand planning dashboard and the integrated view trend dashboard.

OBJECTIVE 6: IMPROVE FINANCIAL MANAGEMENT

In addition to the development of the pharmaceutical budgets for all nine provinces for the FY 21-22 reported above, GHSC-TA also assisted with socializing the forecasts and getting commitment from the provincial CFOs that the allocated budgets be earmarked for medicine only. Additional presentations and submissions were prepared for the NHC-SC-PS and the National Health Council Technical Advisory Committee (NHC-TAC). GHSC-TA also provided training on maintaining and updating the finance dashboard. The dashboard allows provinces and health establishments to monitor expenditure against budget and proactively take corrective action as needed. GHSC-TA provided dashboard training to the four provinces that had made resources available for training: Eastern Cape, Gauteng, KwaZulu-Natal, and Northern Cape.

INTRODUCTION

South Africa remains at the center of the worldwide AIDS epidemic, with an estimated 7.9 million[1] people living with the disease. In addition, the country has the third-highest burden of TB internationally.[2] An efficient and effective health supply chain that improves medicine availability is critical to addressing that disease burden. With this in mind, USAID launched GHSC-TA in South Africa in September 2016. The program provides technical assistance to the South African government to strengthen public health systems and supply chains to advance an AIDS-free generation and contribute to the achievement of universal health coverage.

The availability of medicine has a direct impact on improving health outcomes for the South African people. When health establishments do not have adequate medicine stock-on-hand to meet patient needs not only is the health of patients jeopardized, but patients must return to the health establishment, at considerable personal expense and inconvenience, to collect their medicines. Addressing constraints and improving medicine availability is a core objective of South Africa's NDoH. GHSC-TA works with the NDoH to design and implement innovative solutions to transform the South African public health supply chain. Simultaneously, the program is working with PDoHs to increase medicine availability countrywide. By improving health supply chain visibility, the program also supports public health establishments' efforts to anticipate patients' needs more accurately and position enough stocks of medicines where and when they are needed.

GHSC-TA provides technical assistance directly to the AMD of the NDoH, as well as to the pharmaceutical services directorates of the provinces. The program's overall aim is to assist the government in improving access to, and availability of, the medicines and related commodities needed to prevent and treat HIV/AIDS, TB, and associated conditions and disorders.

The GHSC-TA implementing team is led by Guidehouse LLP and includes PwC South Africa, Resolve Solution Partners, 4Africa Abaluleki (Pty) Ltd, and Banyan Global.

PROGRAM OBJECTIVES

To this end, the program is tasked with the following six objectives:

- Objective 1: Improve Selection and Use of Medicines
- Objective 2: Support Optimization of the Supply Chain
- Objective 3: Strengthen Governance
- Objective 4: Improve Workforce Management
- Objective 5: Strengthen Information Systems and Information Management
- Objective 6: Improve Financial Management

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[1] South African National AIDS Council, Annual Performance Plan 2019-2020. August 2019. Available at https://sanac.org.za/wp-content/uploads/2019/08/Annual-Performance-Plan-201920.pdf.

[2] USAID Where We Work, South Africa, Global Health. October 19, 2020. Available at https://www.usaid.gov/south-africa/global-health.

GHSC-TA activities in support of the six objectives outlined above are segmented into 11 main projects, representing capacity-building interventions across multiple functional areas, as shown in Table 1.

Table 1: Project Descriptions

Activity	Description
1. Medicine Master Data	Assist AMD in defining (in collaboration with the contracted service provider responsible for development) and implementing the MMDS. This system incorporates the Master Health Product List (MHPL), location hierarchy, and formulary management tool.
2. National Surveillance Center	Support the operationalization and optimization of the NSC at a national and provincial level to improve visibility of the performance of the supply chain and strengthen analytics to inform decision making.
3. Supply Chain Systems	Design, implement, transition, and promote the provincial, district, and health establishment utilization of supply chain systems and applications.
3.1 SVS Development	Provide technical assistance with the design and implementation of enhancements to the SVS.
4. Demand and Supply Planning	Develop and implement appropriate processes and human resources capabilities at the national, provincial, and district levels and assist with the use of appropriate technologies to support demand and supply planning.
5. Workforce Management	Strengthen, improve, and equip the AMD and provinces to effectively and efficiently respond to demands imposed by the roll out of strategic interventions.
6. Strengthening Medicine Selection and Use	Develop and implement policies, guidelines, tools, and approaches to support evidence-based selection and rational use of medicine.
7. Governance	Provide technical assistance to support the institutionalization of good governance with the implementation or strengthening of relevant structures within the AMD and PDoHs - (supported by the necessary **terms of reference (TORs)** - as well as the development and/or review of legislation, policies, guidelines, processes, and procedures.
8. Tenofovir/lamivudine/dolutegravir (TLD) Transition	Provide supply chain-related support for the transition of eligible first-line patients living with HIV from tenofovir/emtricitabine/efavirenz (TEE) to a new, more effective and affordable treatment option, TLD.
9. Contracting and Contract Management	Provide technical assistance to AMD relating to contracting with suppliers to supply medicines and post-award associated contract management.
10. Budgeting and Financial Management	Strengthen both national and provincial structures and processes for budgeting and financial reporting for medicines.
11. Provincial Support	Support supply chain optimization at the provincial level through implementing and institutionalizing supply chain reforms in the provinces.

The technical assistance provided by GHSC-TA assists the AMD in implementing the Strategy for Improved Medicine Availability (SIMA) (2016—2021), which encompasses five core functions: selection of medicine and technologies, contracting of suppliers, management of the supply chain, contract management per the applicable requirements and conditions of the contract, and the promotion of rational medicine use. These functions are supported by five enabling functions: governance, workforce management, information systems and management, financial management, and education and research. Interventions are aimed at strengthening both core and enabling functions with a view to continuous improvement.

This work directly supports the USAID/South Africa Country Development Cooperation Strategy results framework by supporting Development Objective 1 - Health outcomes for South Africans improved, as well as the NDoH SIMA and the NDoH annual performance plans.

YEAR 5 QUARTER 1 OVERVIEW

GHSC-TA activities in Q1 of Year 5 were primarily focused on strengthening the health supply chain from both a national and a provincial perspective. GHSC-TA continued to support the GoSA in managing the outbreak of Covid-19 with respect to the medicines and personal protective equipment (PPE) needed by staff and patients. Please refer to the *Special Report: Supporting the Government of South Africa in the Response to Covid-19*, which details GHSC-TA technical assistance and capacity-strengthening activities in managing the outbreak in South Africa.

The response to Covid-19 has required intensification of the supply chain activities of GHSC-TA. It has allowed the program, AMD, and the provinces to test the robustness of processes and tools previously developed. Lessons learned from the pandemic have provided opportunities to further strengthen processes and, in particular, enhance the NSC and institutionalize its use.

Despite Covid-19, GHSC-TA has managed to maintain most planned activities with minimal interruptions or delays. Only activities that required significant time from provincial officials were impacted, and, in these instances, timelines were adjusted and resources reallocated to focus on other key deliverables.

Overall, the Covid-19 pandemic has provided an opportunity to showcase the program's successes while providing valuable inputs to enrich processes and strengthen the medicine supply chain as a whole.

YEAR 5 QUARTER 1 ACHIEVEMENTS

Table 2 provides a high level overview of Year 5 Quarter 1 projects and their key achievements.

Table 2: Key Year 5 Quarter 1 Achievements

OBJECTIVE 1: IMPROVE SELECTION AND USE OF MEDICINES
1. Reviewed the **Implementation Plan for the National Guideline for the Establishment and Functioning of PTCs** in South Africa
2. Assisted with the **development of the formulary report** for KwaZulu-Natal
3. Developed an **analysis of the use of albendazole and mebendazole, as well as for nystatin and miconazole** on a national basis
4. Reviewed the **draft Topic Prioritization Framework and HTA Methods Guide**
5. Provided secretariat support to the **Ministerial Advisory Committee (**MAC**)** on Covid-19

OBJECTIVE 2: SUPPORT OPTIMIZATION OF THE SUPPLY CHAIN
6. Developed **pharmaceutical budget plans for each of the provinces for GoSA financial year 2021-2022,** which were presented at the CFO forum in December 2020
7. Develop**ed** the **facility level medicine budget planning tool** for Gauteng
8. Completed **the informed push POC** in the Free State and started the phase I deployment of the informed push in North West
9. Provided **demand forecasts for the Covid-19 priority list**

OBJECTIVE 3: STRENGTHEN GOVERNANCE
10. Finalized the Free State SLA between the depot and the demanders
11. Reviewed the provincial SITA SLAs
12. Developed bid evaluation rules
13. Developed TOR for IMAT and IMAT-Exploded
14. Revised the guideline for supplier performance management
15. Drafted an MMD Policy

OBJECTIVE 4: IMPROVE WORKFORCE MANAGEMENT
16. Transitioned the adjusted North West pharmaceutical services organizational structure with costing to provincial corporate services for inclusion in the ideal structure of the province
17. Updated progress report on all Mmabatho Medical Stores human resource items for the executive team and transitioned to HR Manager

OBJECTIVE 5: STRENGTHEN INFORMATION TECHNOLOGY SYSTEMS AND INFORMATION MANAGEMENT

18. Provided technical assistance (TA) to the **enhancement of the online MHPL** with major enhancements to user management and contract data history now in testing

19. Provided TA to **roll out the MMDS formulary module in Fezile Dabi district** in the Free State with the formularies of 15 clinics now on the system

20. **Increased connections to the RxSolution reporting API to 309 sites** and by an additional province with total provinces now at eight

21. Improved NSC performance by completing **its migration to the new server**

22. Supported the Covid-19 response by providing weekly update reports to AMD and the provinces with regard to reporting compliance and medicine availability

23. Observed an increase in sites reporting PPE items to the NSC from 3,195 in September 2020 to 3386 in December 2020

OBJECTIVE 6: IMPROVE FINANCIAL MANAGEMENT

24. Developed training material for the process of **maintaining and updating the financial dashboard**

25. Provided in depth training on the process to maintain and update the financial dashboard to representatives from AMD **and four provinces**

26. Designed and developed a health establishment level medicine budget monitoring tool for **Gauteng**

PROGRESS TOWARDS GOAL – INCREASED MEDICINE AVAILABILITY

At the end of Year 5 Quarter 1, overall medicine availability was 88 percent across all commodities (Figure 1). This achievement was just two percent below the NDoH target of 90 percent availability. The performance of this KPI improved by three percent from the 85 percent achieved at the end of Year 4.

Figure 1: Overall Percentage Medicine Availability in Year 5, Q1
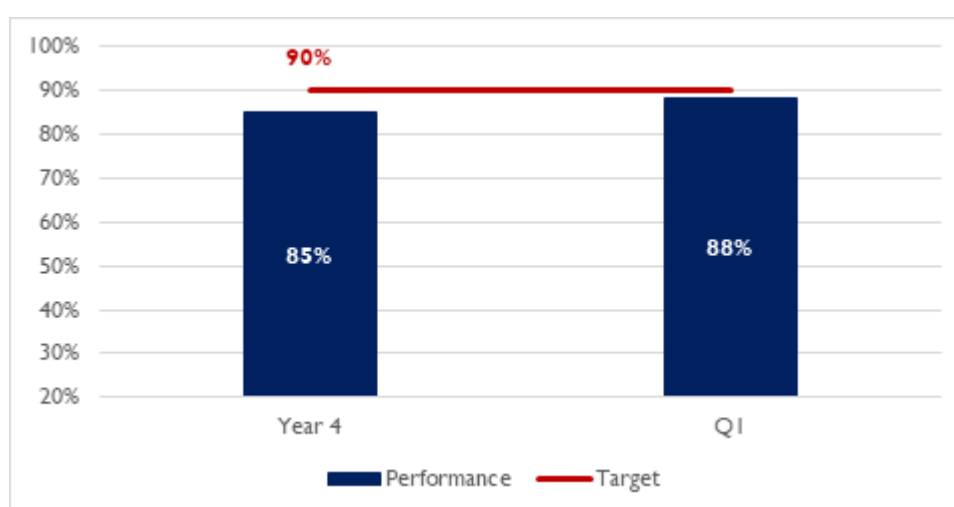
Four out of the nine provinces achieved the target of 90 percent availability, namely Gauteng, KwaZulu-Natal, Northern Cape, and Free State. In addition, eight provinces showed either

consistent or improved performance from Year 4 despite the challenges related to the Covid-19 pandemic. (Western Cape showed a slight decline of two percent from Year 4 performance.)

GHSC-TA attributes this improved performance largely to increased investment in medicine availability at the provincial level. The program continued to provide tailored assistance to provincial pharmaceutical services through the PST, flagging and addressing issues identified in each province. In the Free State, the PDoH appointed additional staff to the medical depot which improved the delivery lead time and frequency. Additionally, the province installed more efficient systems to ensure on-time depot deliveries to health establishments. In Gauteng, GHSC-TA supported the provincial management team's efforts to institutionalize use of the NSC through the NSC change network. Part of the work of the change network was to identify ways in which medicine availability can be improved by optimally utilizing the NSC. This use of data to inform activities contributed to the 94.7 percent medicine availability observed this quarter. Similar to Gauteng, KwaZulu-Natal followed an evidence-based approach to manage availability of medicines across the province. This approach included triangulating supplier, depot and facility stock-on-hand data to identify bottlenecks and devise the appropriate mitigation steps; reviewing and editing medicine supply management standard operating procedures (SOPs) for hospitals and primary health care clinics; and conducting weekly analyses of medicine availability at Centralized Chronic Medicine Dispensing and Distribution CCMDD service providers and the depot with regular communication with the relevant stakeholders.

Despite the improvements observed during this past quarter, challenges impacting medicine availability persist. These challenges include supplier-related constraints, reduced staff capacity within depots due to Covid-19 infections, quarantine and/or social distancing measures often leading to increased lead times for facility deliveries, delayed payments to suppliers particularly in the some provinces, lack of customized facility formularies leading to the reporting of inaccurate stock outs, and sub-optimal utilization of medicine availability data to inform decision making processes and mitigation steps. The medicine categories most impacted by these challenges included, but are not limited to, anti-TB medicines, contraceptives, psychotropic agents, and anti-epileptic medicines.

At health establishment level, the performance of primary health care (PHC) clinics was 89 percent at the end of Year 5 Q1, with hospital performance at 85 percent. Performance of the KPI showed improvement from the end of Year 4, as shown in Figure 2. During the period under review, the availability of antiretroviral (ARV) medicines and commodities was 93 percent - above the NDoH target of 90 percent. Anti-TB medicine availability fell just below the target at 87 percent, but this figure still marked an improvement from the 85 percent reported at the end of Year 4.
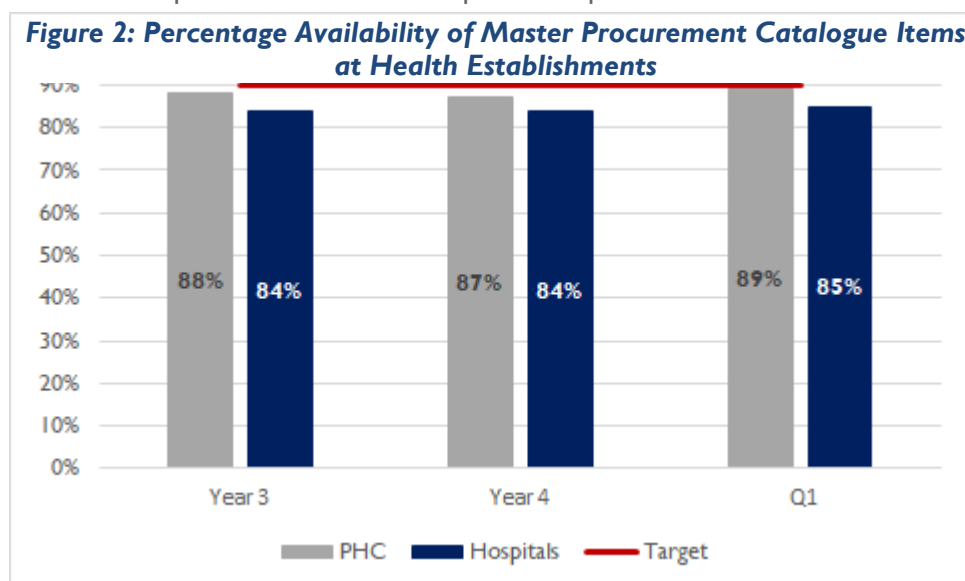
Figure 2: Percentage Availability of Master Procurement Catalogue Items at Health Establishments

IMPROVE SELECTION AND USE OF MEDICINES

South Africa's unique disease burden shapes its national health priorities, health system design, and health funding structures. As with most health care systems globally, the country has limited funds available for servicing the population's health care needs, including medicines and medical-related health technologies. Limited funds must be allocated according to an evidence-based approach to provide the best quality health care to all South Africans.

In addition, South Africa's public health care system must be able to match the medicine available to patients' needs. Many South Africans who require care and treatment for HIV/AIDS, TB, and other diseases look to public health establishments to provide the medicines they need. Through the relevant governance bodies, the AMD is responsible for supporting the selection of medicines for patients nationally and making sure these medicines are accessible and available when and where they are required.

ACTIVITIES AND ACHIEVEMENTS

STRENGTHEN MEDICINE SELECTION AND USE

GHSC-TA is working with the AMD to strengthen medicine selection and rational medicine use to provide an accountable mechanism to support decision making related to the funding, cost, and use of medicines and health technologies in South Africa. During Year 5 Quarter 1, GHSC-TA continued assisting the NDoH to strengthen the selection and use of medicines to support the attainment of universal health coverage.

PTC Guideline Development and Implementation. To enable cascading of improved selection and use of medicine in provinces, districts, and health establishments, GHSC-TA continued facilitating the National PTC Guideline's development and implementation. The guideline promotes good governance in the functioning of these bodies, with standardized functions, roles, and objectives, and supports an outcomes-based approach to the selection and use of medicines. GHSC-TA supported the NDoH to update the PTC Guideline Implementation Plan to assist in the National PTC Guideline roll out. The implementation plan includes assistance with formulary development and a proposed list of priority PTCs. The program developed training materials for use during implementation.

GHSC-TA assisted with the development of the KwaZulu-Natal Provincial Formulary Report, the result of an analysis of the formulary against three-year provincial procurement data, incorporating EML status and ABC analysis. This report provides recommendations for amendments to the current provincial formulary to strengthen rational medicine use as well as for uploading to the Formulary Tool of the MMDS.

Health Technology Assessments. The Essential Medicines List (EML) and Standard Treatment Guidelines (STGs) are developed and maintained by the ministerially-appointed NEMLC supported by the EDP. This process requires the performance of medicine reviews and costing analyses to support decisions about which medicines will be included in the EML. The purpose of establishing an HTA framework is to strengthen the medicine selection process and enable the expansion of NDoH's STGs, which will be used to inform health service benefits funded under National Health Insurance (NHI). The program also provided assistance with the review of the Topic Prioritization Framework and HTA Methods Guide currently being developed by NDoH. The guide will establish a baseline set of methods for generation and use of clinical and costing evidence and production of cost effectiveness analysis to inform decision making about the listing of medicines on the EML. Once approved, the guide will form the foundation on which the selection decisions will be informed by HTAs.

Support to NEMLC and the Expert Review Committees. The program drafted the call for applications to the NEMLC and Tertiary and Quaternary Expert Review Committee. The purpose of this activity was to gain approval from the Director-General of Health to convene the two committees for a new term of office, and to encourage experts to apply to join the committees. GHSC-TA also provided support with governance of the NEMLC meeting, consolidating declarations of interest and attendance and drafting the NEMLC bulletin to communicate key decisions.

Other Rational Medicine Use Support. The practice of rational medicine use ensures that patients receive medicines appropriate to their clinical needs, in doses that meet their requirements, for an adequate period, and at the lowest cost to them and their community. During the period under review, GHSC-TA supported the AMD to develop communication materials tailored to the audiences at two conferences, and attended the GHSC Conference alongside the AMD. The program developed a presentation entitled "Laying the Foundation – Importance of Governance Tools to Underpin a Medicine Master Data System" for delivery at the GHSC Conference. GHSC-TA also provided assistance on a presentation for the International Society for Pharmacoeconomics

and Outcomes Research (ISPOR) Conference to outline the role of the EDP and NEMLC in the selection of medicines. Additionally, the program performed an analysis on a national basis for albendazole and mebendazole, as well as for nystatin and miconazole, to determine and compare provincial usage over time. The analysis was used to inform interventions with provinces that appeared to be using the medicines irrationally.

GHSC-TA also assisted by conducting quality checks on the content on the EML Clinical Guide application to ensure data integrity. The purpose of this tool is to assist with communication and implementation of the National STGs and EML.

OUTCOME LEVEL RESULTS

The program's theory of change hypothesizes that by supporting AMD efforts to perform HTAs and leverage their outputs, the GoSA will demonstrate improvements in the selection and use of medicines. In efforts to test these assumptions, GHSC-TA monitors two KPIs. This section provides an overview of the progress and results observed against these KPIs through the end of Year 5 Quarter 1.

KPI 2. NUMBER OF MEDICINE SELECTION DECISIONS MADE UTILIZING HEALTH TECHNOLOGY ASSESSMENT PROCESSES

This KPI measures the extent to which HTA processes inform decision making by the NEMLC and other relevant committees. Improved decision making is key to determining the medicines and other health technologies funded under NHI. There was no change in this indicator during the period under review, with the life of program performance remaining at four.

During Year 4, AMD had placed HTA strengthening activities on hold pending further discussions regarding the future of HTA in light of the publication of the NHI Bill. During the first quarter of Year 5, GHSC-TA completed additional HTA work in preparation for the implementation of NHI. GHSC-TA also assisted with the review of the Topic Prioritization Framework and HTA Methods Guide that NDoH is currently developing.

KPI 3. PERCENTAGE OF ASSISTED PHARMACEUTICAL AND THERAPEUTICS COMMITTEES WITH IMPROVED OPERATIONAL CAPACITY

KPI 3 measures change in the operational capacity of PTCs. It must be noted that this is an endline KPI, as a number of interventions must be completed before the final measurement is done.

Activities that contribute to this KPI were deprioritized by the NDoH to address the Covid-19 pandemic. However, the program has commenced providing assistance on the development and management of formularies in the Northern Cape, Free State, and KwaZulu-Natal. In Year 5 Quarter 1, GHSC-TA assisted the NDoH to produce a formulary report for KwaZulu-Natal. Compilation of baseline assessments, interventions informed by the completed assessments, and post-intervention assessment will continue in priority provinces in Year 5.

SUPPORT OPTIMIZATION OF THE SUPPLY CHAIN

The South African health supply chain, specifically the planning, procurement, and distribution of medicines, mostly relies on outdated and inefficient systems and processes. Planning, procurement, and distribution of medicine are often challenged by limited linkages and coordination of efforts between the national and provincial levels. Given the current and expected medicine expenditures and 95-95-95 targets, it is increasingly important to generate efficiencies and savings within the supply chain's planning, procurement, and distribution functions. Through strengthening the capabilities of the NDoH and introducing efficient and uniform processes across all levels of the medicine supply chain, GHSC-TA supports supply chain optimization, improved planning processes, and end-to-end visibility, thus enabling better oversight and decision making.

ACTIVITIES AND ACHIEVEMENTS

DEMAND AND SUPPLY PLANNING

GHSC-TA works with the NDoH to produce innovative processes, tools, and workforce training that result in more accurate demand forecasts. Concurrently, GHSC-TA collaborates with PDoHs to improve their demand and supply planning to increase medicine availability countrywide.

Tender Forecasting. GHSC-TA continued to support NDoH to utilize provincial issues and order data as a basis for future projections. This transition aligns the NDoH processes with the monthly provincial demand planning process. The province reviews and approves the provincial forecast in a demand review and then uses that forecast as an input for the next tender cycle.

In-contract Demand Planning. GHSC-TA is supporting the CMU with the establishment of in-contract demand planning, where actual and forecasted volumes are compared to the originally contracted volumes. During the period under review, the program developed a model, updated monthly, to empower CMU to discuss variances with suppliers and take appropriate actions. GHSC-TA finalized the in-contract demand planning tool and drafted an SOP and a training guide which was used in the handover process. The program completed training with two of the AMD personnel who completed their first update of the in-contract demand forecast. Further, GHSC-TA developed TORs to standardise the supplier engagement discussions.

Design of Centralized Demand Planning Unit. GHSC-TA assisted with designing a centralized demand planning unit at the national level. This activity included providing job specification, interview guides, case studies, and a technical Microsoft Excel skills test. GHSC-TA supported the interview process, which resulted in two candidates recruited into demand planning positions, due to start work in January 2021. During Q1 of Year 5 GHSC-TA compiled an induction plan for the new demand planners to ensure an increased speed to competence.

Provincial Demand Planning. Demand planning involves combining statistical forecasting techniques and judgment to construct demand estimates for medicines to fulfil forecasted patient needs. Accurate demand forecasts become the basis for an effective and efficient supply chain, improving medicine availability, and reducing costs. In South Africa, demand planning will also improve the availability of medicines used to fight HIV/AIDS and TB and provide a good base for supply chain planning to ensure medicine availability during pandemics, such as Covid-19.

During the period under review, GHSC-TA continued to support provinces in establishing a demand planning process. To date, the program has implemented this process in Eastern Cape, North West, KwaZulu-Natal, and Gauteng and has initiated the process in Western Cape and the Free State. The GHSC-TA demand planning team works together with the provincial counterparts to review the forecast and prepare for the provincial demand review meetings.

During this period the GHSC-TA team also supported Gauteng with the development of a facility level medicine budget planning tool. GHSC-TA worked with the province to consolidate the existing Excel spreadsheets into an automated Excel tool which will support facilities to calculate and track their medicine budgets throughout the year.

One of the outcomes of the demand planning process is the medicine budget plan for GoSA financial year 2020-2021. During this quarter, the program finalized the budget forecast and initiated a thorough review process with the provincial pharmaceutical services and the finance teams. The budget was presented at the CFO forum on December 8, 2020 and was cut by 3.5 percent as per a directive from National Treasury. The adjustments were made and the final budget was submitted at the end of December 2020.

Supply Planning. Following the development of an established and approved demand plan, supply planning seeks to satisfy the demand forecast so that the right commodities are available at the right time for patients. For PDoHs, supply planning is essential as it aims to replenish inventory levels by delivering optimal stock to meet patient needs. Currently, many health establishments create and submit orders using a manual, paper-based process, which is cumbersome, introduces opportunities for error, creates duplication of effort, and is not standard within a province or across provinces.

The informed push process, implemented by GHSC-TA, creates a standard approach to replenishment planning. This process includes a standard min-max stock level calculation applied to the formulary of a health establishment following a review and revision thereof. The informed push process automates replenishment planning using a system such as RxSolution or SVS, enabling health establishments to capture their current stock on hand and receive an automatically generated recommended order.

During this quarter, GHSC-TA expanded the informed push implementation in North West, where the solution is being deployed after a successful POC. The program onboarded three additional sites using the SVS replenishment planning approach, and set up one additional site using RxSolution. The deployment will continue into the next quarter with seven additional sites using SVS and four using RxSolution. GHSC-TA also initiated the Phase I deployment plan in the Fezili Dabi district of the Free State after the successful completion of the Proof of Concept (POC). During the quarter under review, the program commenced preparation work for resolving the formularies and setting up min-max levels for each health establishment. Final implementation and training will follow in 2021. Implementation in Mpumalanga has been hampered due to senior-level approvals not being in place, but the program expects to secure those approvals in the coming quarter. The min-max levels have, however, been calculated across many of the Ehlanzeni district facilities.

Minimum and Maximum Stock Levels. The GHSC-TA team proposed a standard approach to calculating the min-max stock levels, in line with the method used in RxSolution. The methodology was presented and accepted by the NDoH during Year 4.

The program has initiated discussions regarding this methodology with the provincial management teams and district management teams in North West, Free State, Mpumalanga, and Gauteng. The goal of these discussions is to obtain buy-in and support for the methodology and its implementation. GHSC-TA has also completed initial calculations for several districts in Free State, Mpumalanga, and North West. Gauteng has selected five sites where they will trial the methodology before committing to roll it out across the province. A key enabler to effective implementation is that formularies for each facility are aligned with provincial formularies and the level of health services provided. The supply planning team is, thus, working closely with the team implementing the formulary management system to ensure alignment and pave the way for an easier implementation of informed push.

TLD TRANSITION

Over the past 15 months, GHSC-TA, in collaboration with Africa Resource Centre (ARC), worked closely with the Provincial Departments of Health, the HIV Program, and other implementing partners to support the transition to TLD in South Africa. By the end of Year 5, Q1, the provinces had transitioned 60 percent of the total remaining on antiretroviral therapy (TROA), as seen through the implied dispensing numbers.

GHSC-TA developed a **TLD dashboard** in 2019 to track medicine availability of items related to the transition at national, provincial, district, and health establishment levels. In 2020, the team received permission from the HIV Program to include the TROA data in the TLD dashboard allowing users to track selected items and support medicine availability at all levels. To date, GHSC-TA, with the provincial TLD champions, managed to increase reporting compliance on TEE/TLD on the NSC dashboard.

In 2019, GHSC-TA developed and implemented a **national and provincial demand model** to inform the demand of ARVs and other related products during the TLD transition. The provincial forecasts are updated monthly and used to inform the transition's pace provincially and assist the TLD project team in monitoring progress nationally. The updated forecast data informs the national and provincial supply plan to facilitate the availability of TLD, TEE, and other items related to the

transition. During this quarter, GHSC-TA continued to review and update provincial demand forecasts on a monthly basis taking into account the need to accommodate the 'holiday dispense' and MMD. This input is used by ARC to develop the supply plan which is shared with suppliers. GHSC-TA, in collaboration with ARC, worked closely with suppliers to avoid stock outs of TEE and TLD.

Due to global supply challenges arising from the Covid-19 outbreak, South Africa saw a national shortage of TEE and TLD. A decision was taken by NDoH to assist the provinces by allocating stock based on TROA to facilitate equitable distribution. The TLD project team utilizes data from the NSC and TROA data submitted by each province and then allocates stock based on what is available from the ARV suppliers for the week. This process continued during this quarter and will be reviewed at the end of January 2021 when the ARV supply stabilizes.

During the quarter under review, GHSC-TA continued to hold weekly sales and operational meetings with Provincial Pharmaceutical Services and the Strategic Health Program. The TLD project team is assisting the provinces with district stock allocation to ensure facilities have sufficient stock of all items related to the transition. Additionally, GHSC-TA assisted the North West Department of Health to resolve long outstanding payments on the ARV and TB accounts.

The TLD project team secured a donation from USAID and Global Fund of the 90-day pack to assist provinces from stocking out and assist with the December holiday dispensing.

GHSC-TA also provided ongoing support to the provincial depots to improve the availability of TLD and TEE and avoid potential stock outs at the health establishment level. There are continued engagements with the CMU team to discuss supply challenges on selected contraceptives, TB medication, and pre-exposure prophylaxis (PrEP).

Data analysis indicated that at the start of the transition, the pace of the roll out of TLD was much slower than expected. Beginning in March 2020, the TLD project team noted a significant increase in the number of patients transitioned to TLD. Interventions implemented by GHSC-TA and key provincial stakeholders, to support the transition continued in this quarter and included:

- Implementation of the **national training and implementation plan for the antiretroviral (ART) clinical guidelines** with refresher training rolled out provincially, the implementation of provincial mentorship programs from September 2020 and the creation of provincial WhatsApp groups to support clinicians
- Support to provincial TLD steering committee meetings with support shared between ARC and GHSC-TA
- Ongoing support to the HIV Program at national and provincial levels with feedback provided in the weekly Phuthuma meetings.

The TLD project team is in the process of preparing for the national scale up to transition all second line patients, adolescents, and children to dolutegravir-containing regimens. Phase 2 of the roll out will be completed by December 2021.

OUTCOME LEVEL RESULTS

GHSC-TA hypothesizes that by supporting activities to improve the security of medicine supply and strengthen demand and supply planning, inventory management, and working with the AMD to improve visibility and analytics to strengthen planning processes, the GoSA will demonstrate improvements. In efforts to test this hypothesis, GHSC-TA monitors eight key performance indicators. This section provides an overview of the progress and results observed against these KPIs through the end of Year 5 Quarter 1.

KPI 4. PERCENTAGE OF ANTI-RETROVIRAL UNITS DELIVERED BY SUPPLIERS WITHIN CONTRACTUAL LEAD-TIME (SUPPLIER PERFORMANCE RELIABILITY – ON TIME)

At the end of Quarter 1, 45 percent of ARVs were delivered by suppliers within the contractual lead time of 14 days. The performance demonstrated a decline from the 60 percent reported at the end of Year 4, and remained below the target of 90 percent, as shown in Figure 3. The Covid-19 pandemic continues to have a negative impact on the medicine supply chain with multiple key suppliers experiencing manufacturing constraints. This challenge has resulted in key suppliers not having enough stock to dispatch to provinces. The average lead time was reported at 27 days, almost double the standard lead time of 14 days.

The Improved Medicine Availability Team (IMAT) governance structure and the Covid-19 response team established by AMD monitored the situation and recommended appropriate actions. These included engaging with suppliers regularly to improve performance and sourcing from alternative suppliers where contract holders were unable to provide the stock required.

Figure 3: Percentage of Anti-retroviral Units Delivered by Suppliers within Contractual Lead-time (Supplier Performance Reliability--On-Time) in Year 4
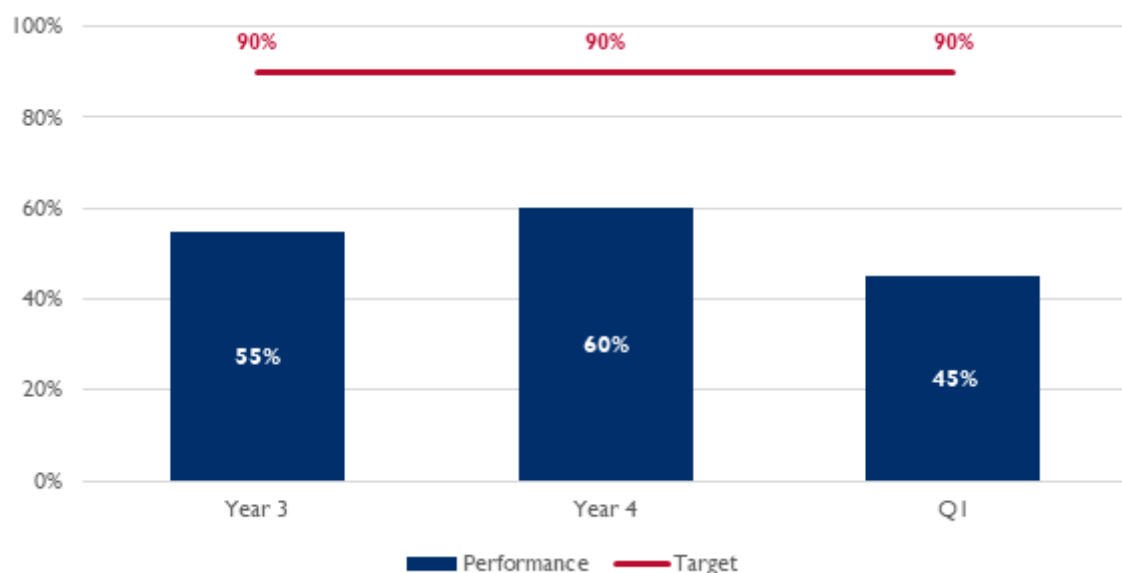
KPI 5. PERCENTAGE OF MASTER HEALTH PRODUCT LIST ITEMS ON TRANSVERSAL CONTRACTS (EXCLUDING ANTI-RETROVIRAL) UNITS DELIVERED BY SUPPLIERS WITHIN CONTRACTUAL LEAD-TIME (SUPPLIER PERFORMANCE RELIABILITY – ON TIME)

At the end of the reporting period, the delivery of items on transversal contracts (excluding ARVs) by suppliers within contractual lead-time was reported at 53 percent, a decline from the 65 percent reported at the end of Year 4. Performance remained below the established target of 85 percent, as shown in Figure 4. The average lead time was 28 days at the end of the reporting period which was above the contractual 14-day lead time. Similar to KPI 4, performance was affected by the Covid-19 pandemic with challenges reported, including API shortages for certain items.

Figure 4: Percentage of Master Health Product List Items on Transversal Contracts Excluding Antiretroviral Units Delivered by Suppliers within Contractual Lead-time (Supplier Performance Reliability--On-Time) in Year 4
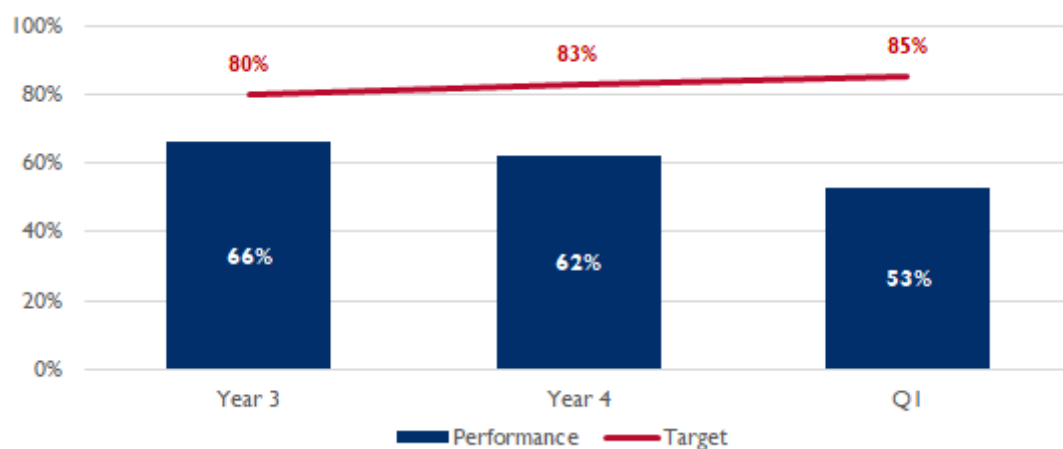
KPI 6. SUPPLIER PERFORMANCE RELIABILITY – PERFECT ORDER FULFILLMENT FOR ORDERS PLACED ON SUPPLIERS (ON-TIME AND IN-FULL)

At the end of Quarter 1, supplier performance reliability was reported at 51 percent, which demonstrates a decline from the Year 4 performance. Performance remained below the target of 80 percent as shown in Figure 5. As with KPIs 4 and 5, multiple suppliers experienced manufacturing constraints including API shortages due to the Covid-19 pandemic, creating ripple effects across provinces. In some cases, available stock was rationed to help maintain supply to provinces. GHSC-TA worked with AMD to monitor and address availability challenges through the IMAT and the Covid-19 response team.

Figure 5: Supplier Performance Reliability--Perfect Order Fulfilment for Orders Placed on Suppliers (On-Time and In-Full)
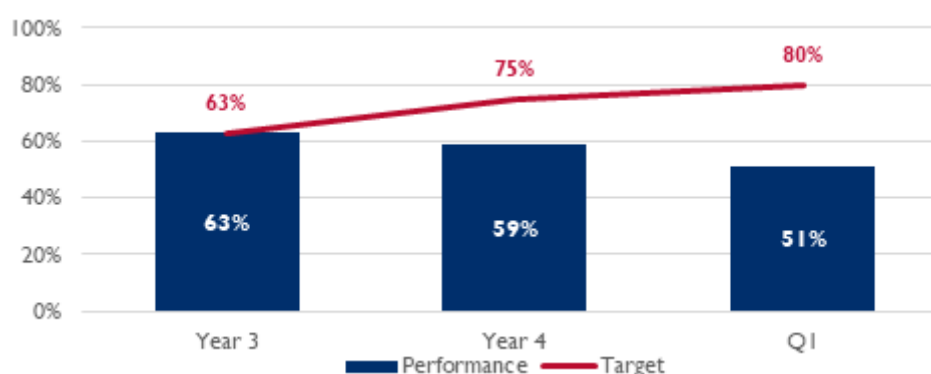
KPI 7. PERCENTAGE OF MASTER HEALTH PRODUCT LIST ITEMS ON TRANSVERSAL CONTRACTS DELIVERED VIA DIRECT DELIVERY TO THE HOSPITALS DESIGNATED BY THE PROVINCE TO RECEIVE DIRECT DELIVERY ORDERS

Due to data access challenges, GHSC-TA was not able to calculate performance against this indicator for the period under review. The program expects to resolve this issue in the coming quarter, and report performance for both Q1 and Q2 in the next quarterly report.

KPI 8. NUMBER OF HEALTH ESTABLISHMENTS AND WAREHOUSES WITH CONFIGURED MINIMUM AND MAXIMUM (MIN-MAX) STOCK LEVELS FOR STOCKED MEDICINES BEING REPORTED TO THE NATIONAL SURVEILLANCE CENTER

At the end of Q1, 1,352 clinics and 243 hospitals were reported to have configured min-max stock levels on either the SVS or RxSolution systems, bringing the total to 1,595 against a target of 1,500. This shows an improvement from the 938 reported by the end of Year 4. Moreover, this achievement surpasses the Year 5 target of 1,500. The provinces with the highest number of clinics with min-max levels include Limpopo (433), North West (307), Mpumalanga (306), and KwaZulu-Natal (284).

This increase is largely due to provincial efforts to better manage their min-max levels as this forms a key component for effectively monitoring medicine availability. In Y5 the GHSC-TA team expects to build on this achievement as part of the rollout of the work relating to the standardization of the min-max levels calculation methodology, enabled by the SVS Phase 2.0 and informed push implementation.

Figure 6: Min-Max Level Reporting–Number of Health Establishments and Warehouses with Configured Min and Max (Min-Max) Stock Levels for Stocked Medicines Being Reported
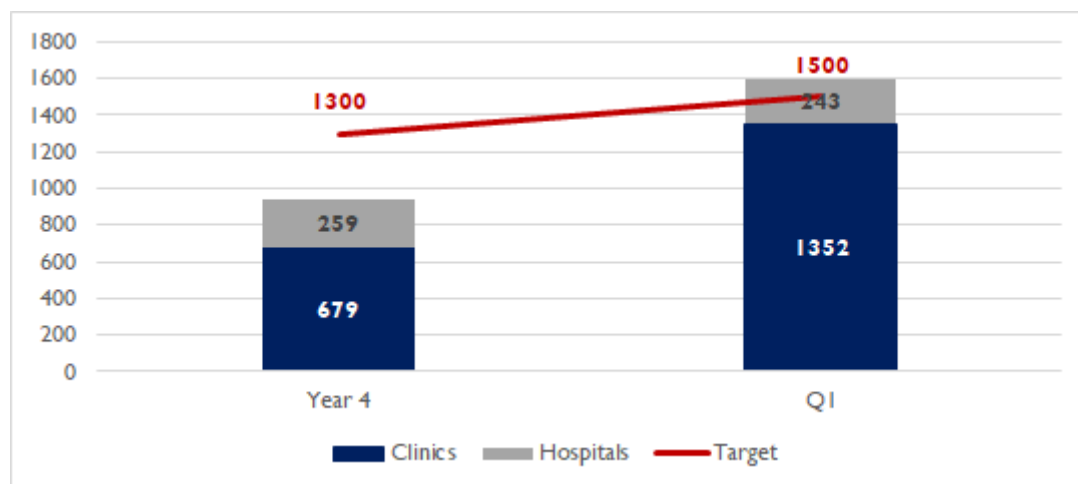
KPI 9. DEMAND FORECAST ACCURACY FOR PROVINCES USING THE DEMAND FORECASTING PROCESS

This KPI measures forecasted demand accuracy relative to actual demand for provinces where the demand forecasting process has been implemented, and for all 15 contracts. Forecast accuracy is measured based on mean absolute percentage error, which is an absolute variance between forecast demand and actuals expressed as a percentage of actuals. During Q1 of Year 5 there were some data challenges with the SITA not providing the standard historical data to the NDoH. The program received comprehensive data for only two of the four provinces expected to report. For the other two provinces data was only received for one month in the reporting period, hampering the calculation of the demand planning metrics. GHSC-TA expects to receive the data during Q2 of Year 5 and will then publish a retrospective forecast accuracy.

KPI 10. FORECAST BIAS FOR PHARMACEUTICAL FORECASTS IN PROVINCES

Forecast bias measures the tendency for actuals to be over or under the forecasted amounts on a consistent basis. The presence of a tendency in either direction requires root-cause investigation and corrective action. Forecast bias is measured as a variance between forecast demand and actuals,

either positive or negative, expressed as a percentage of actuals over a series of consecutive periods. Similar to KPI 9, this KPI could only be measured provisionally due to data unavailability.

KPI 11. PERCENTAGE OF ELIGIBLE PATIENTS TRANSITIONED FROM TEE TO TLD

This indicator measures GHSC-TA's ability to support the transition of eligible patients from TEE to TLD. At the end of Q1, 60 percent of patients were transitioned from TEE to TLD, below the Year 5 target of 100 percent, but substantially above the Year 4 performance of 38 percent. It must be noted that the primary data source for this indicator, TIER.net, experienced a system error that was identified in July. When the system experienced challenges, ARC developed a proxy measure— the implied dispensing - to deduce the volume supplied using stock-on-hand information and quantities received and issued by the provinces in a specific month. The figure reported is based on this proxy measure. GHSC-TA will make any necessary corrections when the TIER.net data is available.

The improved performance can be attributed to a number of provincial interventions implemented by the TLD project team and the HIV Programme, as well as a significant increase in the number of TLD packs dispensed by CCMDD service providers. In November 2020, the TLD task team decided to postpone the transition due to ongoing supply challenges reported on TLD. Stock levels stabilized over December and January due to a donation received by USAID and Global Fund of the 90-day packs of TLD, with an additional supply of 1.5 million packs also being secured by NDoH from two suppliers. Provincial stakeholders agreed that only new patients will be initiated on TLD while existing patients remain on their current treatment regime. The situation will be re-assessed in January 2021 when the supply of TLD has further stabilized.

Figure 7: Percentage of Eligible Patients Transitioned from TEE to TLD
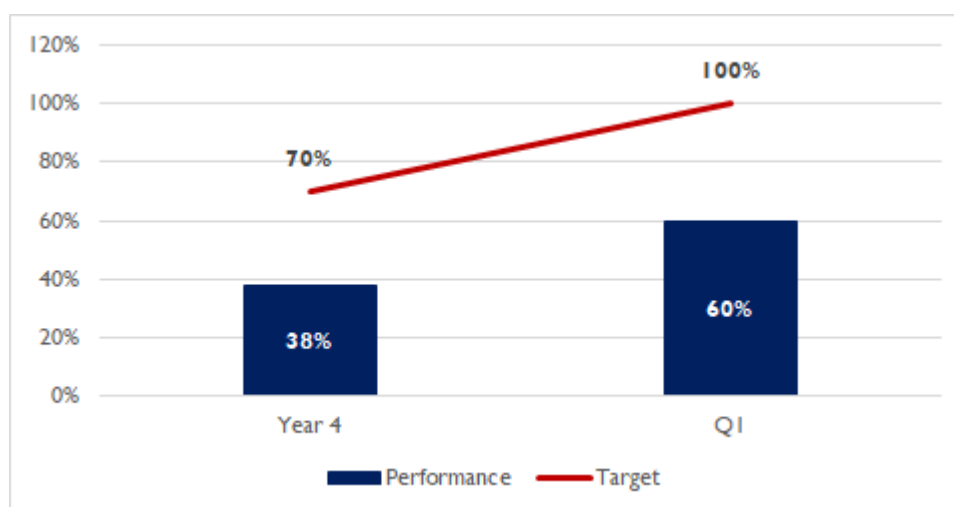
STRENGTHEN GOVERNANCE

One of the AMD functions is to provide oversight and set policy with respect to pharmaceutical services provided in South Africa. Support provided by GHSC-TA includes assisting the AMD and provincial pharmaceutical services in improving governance by strengthening the policy and legislative framework, establishing appropriate governance structures, and building capacity to provide the necessary oversight. A key role of GHSC-TA is to provide TA in the development of relevant policies and legislation necessary for the implementation of strategic priorities and interventions.

ACTIVITIES AND ACHIEVEMENTS

GOVERNANCE

GHSC-TA conducted several activities in Year 5 Quarter 1 to strengthen governance by developing and revising policies as an enabler for medicine availability. Most notably, the program supported activities in the areas of supply planning, contracting, and contract management.

Free State Service Level Agreement Between the Provincial Depot and Demanders (Health Establishments). GHSC-TA supported the Free State in finalizing the service level agreement by including or amending clauses based on Covid-19 learning, including for example those

relating to direct delivery from suppliers to health establishments. The program collaborated with the province to finalize the SLA in December 2020.

Criteria for Registration of Demanders. During the quarter, GHSC-TA completed the development of criteria and requirements for demanders to be registered on warehouse management systems. The program first consolidated the list of demanders on the various WMS, then drafted criteria to standardise the process across provinces.

Service Level Agreements with SITA. GHSC-TA provided support to AMD with a review of the provincial SLAs with SITA, as well as negotiations relating to an annexure to the SLA between SITA and NDoH to acquire the data required for demand planning and the NSC, as well as the loading of master data relating to NSNs and suppliers.

Multi-Month Dispensing. MMD is a key differentiated service delivery model for patient centric services. The approach aims to improve patient retention and adherence while assisting to reduce the burden on health establishments and health care workers by reducing the frequency at which medicines are dispensed to patients. GHSC-TA assisted to identify the policy principles that would inform the roll out of MMD across the country. The program developed a draft MMD Policy to provide the necessary principles and tools to support health care establishments in implementing MMD of medicines. Meetings were held with key stakeholders to provide input into the draft policy prior to submitting to the AMD in October 2020 for review and input.

CONTRACTING AND CONTRACT MANAGEMENT

Procurement of medicines for use in South African government hospitals and clinics takes place following a competitive tendering process. The resultant contracts are, therefore, extremely important for medicine availability. Once contracts have been awarded, AMD plays a critical role in monitoring and managing supplier performance. In addition to the management of contracted suppliers, it is important that the performance of all parties, including participating authorities and demanders are also monitored and managed. Support provided by GHSC-TA is focused on strengthening contracting and contract management processes.

Bid Evaluation Committee (BEC) Meeting Minutes and Rules of Evaluation. During the quarter, GHSC-TA supported AMD in BEC meetings to review and revise the template used to record the minutes of meetings to reflect accurately what was discussed in the meetings. The team also assisted with developing rules and principles to be applied in evaluating bids received, to support consistency and transparency.

Regulatory requirements for Medical-related Items (Medical Devices). GHSC-TA supported AMD with identifying the regulatory requirements applicable to medical related items on pharmaceutical tenders, as decided at the workshop held in February 2020 with members of the Bid Specification and Bid Evaluation Committees. Where relevant, the SAHPRA guidelines for medical devices were applied. This effort will assist the committees to specify and evaluate these items correctly based on the standards and requirements for compliance.

Contracting. In efforts to promote the security of supply of essential medicines, including ARVs and medicines used in the prevention and treatment of TB, GHSC-TA continued to support AMD in developing the specifications for items to be advertised to awarding the contracts. The activities included preparing the tender to be published, evaluating bids, and preparing documents for the Departmental Bid Adjudication Committee and final award.

Improved Medicine Availability Team. During the period under review, GHSC-TA continued to support AMD in reviewing and updating the IMAT terms of reference with input provided by the AMD task team, to accommodate lessons learned in the response to Covid-19. The structure was

split into two each with its own TOR - IMAT which consists of AMD members only, and IMAT-Exploded which includes provincial representatives. The purpose of IMAT is to identify medicines with supply challenges by generating the "hot list" – a list of medicines with supply constraints - and developing remedial actions. The list is shared and discussed with members of IMAT-Exploded, to collaboratively identify interventions aimed at addressing any medicine supply challenges, improve medicine availability, and reduce the potential impact of stock outs. Both TOR are ready for presentation to the NHC-SC-PS. GHSC-TA also supported the revision of the criteria for inclusion of items on the "hot list". The list is reviewed by the IMAT to identify possible root causes and implement remedial actions.

Contract Management. During this reporting period, GHSC-TA continued to support AMD with managing supplier performance and mitigating stock-out challenges. During the quarter, GHSC-TA provided support in revising the supplier performance guideline following multiple discussions in Covid-19 response meetings on challenges with supplier performance. The purpose of the guideline is to provide guiding principles and processes on the management of supplier performance for medicines and related medical devices procured on contract and on quotation. In addition, the guideline clarifies the roles and responsibilities of AMD and provinces in relation to managing performance of suppliers. The team also provided technical support to the CMU in the review and development of SOPs relating to the management of supplier performance.

OUTCOME LEVEL RESULTS

GHSC-TA hypothesizes that through increasing the capacity of the AMD to develop and institutionalize effective policies and legislation and implement good governance practices in coordination and engagement with key stakeholders, the AMD will demonstrate an increased application of good governance principles embodied in policies, implementation plans, processes, and SOPs. There are no outcome level KPIs reported under this objective.

IMPROVE WORKFORCE MANAGEMENT

To strengthen the workforce and organizational structures within AMD and in the provinces to perform the functions necessary to improve medicine availability GHSC-TA continued to provide TA to the North West.

ACTIVITIES AND ACHIEVEMENTS

In 2018, the GoSA invoked Section 100 of the Constitution in North West, giving the national government the power to intervene when a province does not fulfil its obligations regarding legislation or the Constitution. GHSC-TA supported the province in addressing human resource challenges and organisational design interventions that were affecting work at the Mmabatho Medical Stores. During this quarter, GHSC-TA began the transition and handover process to the province to support implementation and sustainability of workforce management activities undertaken.

Revised Structure. GHSC-TA assisted the Administrator, DDG and Acting Chief Director: Tertiary and Clinical Services with a new assessment on the receiving and inventory section at Mmabatho Medical Stores. The program handed over adjusted job descriptions and key performance areas to the Acting Manager and HR Manager for implementation.

The program also prepared a presentation, at the request of the Administrator, on the Mmabatho Medical Stores' adjusted structure, including key job descriptions with all the latest changes from the intervention team. GHSC-TA mapped all staff over to the adjusted structure and highlighted positions that required approval from the Department of Public Service and Administration. The program made the presentation to the executive team in October 21 and provided the adjusted North West pharmaceutical services organizational structure with costing to provincial corporate services for inclusion in the ideal structure of the province.

Assessment of Outstanding Overtime. During this reporting period, GHSC-TA also provided support to the Acting Chief Director: Tertiary and Clinical Services in assessing the outstanding overtime for the Stores. The program provided further assistance in drafting a formal submission to allow for payment of outstanding overtime up to the end of July 2020.

Updated Progress Report. GHSC-TA updated a progress report on all human resource items and presented the report to the executive team. For 2021 the HR Manager will continue with the interventions and prepare regular progress reports for the Acting Chief Director: Tertiary and Clinical Services to present to the executive team, led by the North West DDG.

OUTCOME LEVEL RESULTS

GHSC-TA hypothesizes that by increasing the AMD and provinces' capacity to develop and implement good governance practices in coordination and engagement with key stakeholders, the AMD and provinces will demonstrate an increased application of good governance principles embodied in policies, implementation plans, processes, and standard operating procedures. There are no outcome level KPIs reported under this objective.

STRENGTHEN INFORMATION SYSTEMS AND INFORMATION MANAGEMENT

Information systems are critical to support the AMD strategy to improve medicine availability. Beyond organizational governance, GHSC-TA supports data governance and management of master data elements crucial to enable interoperability of information systems. Further, the team supports and recommends enhancements to existing systems, analytical processes, and dashboards used by AMD and provincial pharmaceutical services for daily transactions and to inform decision making and continuous improvement.

ACTIVITIES AND ACHIEVEMENTS

MASTER MEDICINE DATA SYSTEM

The AMD is working towards ensuring that medicine master data can be exchanged and processed between different devices and systems and across networks within the medicine supply chain. The MMDS, which is under development, will provide a centralized, uniform set of master data relating to medicine. The goal is for information systems to read medicine master data from this central repository via system interfaces to achieve seamless interoperability. The availability of a set of

uniform master data will support improved efficiencies at all levels of the health care system and facilitate visibility via the NSC, ultimately contributing to medicine availability improvements.

GHSC-TA provides support to elicit system requirements and reach agreement on definitions of master data-related elements, documenting requirements, preparing conceptual data designs, and system testing once these requirements are implemented. During the quarter under review, GHSC-TA continued to provide TA in the development of specifications and implementation of modules of the MMDS, which consists of four components shown in Figure 8: Medicine Data, Contract Data, a Formulary Management Tool and Location Master Tool.

Figure 8: Four Components of MMDS

Development. During the quarter, GHSC-TA continued supporting the AMD-contracted service provider with development. The major development themes for this quarter continued to be around user management functionality and contract data history functionality. The revised user management functionality will support more powerful control over user privileges and roles, while the enabling contract data history will enable the tracking of contract elements, such as pricing, over time. Both are now complete, with the contract data history having completed a first round of user acceptance testing (UAT) in December, and both set to complete UAT and be deployed to live early in the new year.

Roll Out. Formularies are essential to managing the medicine supply chain, as these provide the detail of which medicines are to be stocked at each health establishment. GHSC-TA is working closely with the district pharmacist for the Fezile Dabi district in the Free State and the Provincial Pharmaceutical and Therapeutics Committee representative to build formularies on the MMDS for the district and the province, respectively.

The first step in this process was to load the Fezile Dabi health establishments as nodes on the Location Hierarchy tool, against which medicines may be linked to create formularies for each establishment. The program completed this process during this quarter, and the data for these health establishments is live. GHSC-TA created a template formulary which is copied across to each clinic and then adjusted at the clinic level to accommodate formulary differences. The program has completed the formularies of 15 clinics on the system.

Additionally, data work is underway to match all medicines listed on the current manual provincial formulary to those already loaded onto the MMDS. GHSC-TA also completed training of the district pharmacist and PTC representative on use of the formulary tool. As this is the first group to begin managing formularies on the MMDS, the program is receiving valuable feedback to further enhance the system.

NATIONAL SURVEILLANCE CENTER

GHSC-TA activities over this reporting period continued to focus on maintenance of the NSC, as well as ongoing support of the monitoring function as relevant to health establishment reporting compliance.

Enhancement of the NSC: GHSC-TA continued with development of new views that support the AMD strategy for improved visibility of the availability and use of medicines. The project supported the AMD EDP team with **data analytics support** regarding medicine use for presentations made to NEMLC and the ERC during October and November 2020. The data sets analysed included: Azithromycin, Vitamin C injection, Colchicine, and Vitamin D oral solution. Based on this work, the program is exploring the feasibility of **depicting rational medicine use information** on the NSC dashboards.

In this quarter, GHSC-TA completed the migration of all the NSC workbooks to the new server and shared the new URL and username credentials for NSC users with AMD. The program initiated a test phase of the NSC on the new server with a smaller group of AMD staff during October 2020. The issues identified during the test phase were corrected and completed in November. GHSC-TA used the opportunity of the migration of the NSC to the new server to publish two dashboards developed in the previous quarter, namely the demand planning dashboard and the integrated view trend dashboard.

The project compiled a letter and NSC navigation pack to inform and guide users on the move of the NSC to the new server and introduce the new dashboard views and submitted this to AMD for approval. GHSC-TA further supported AMD with the review of a hosting proposal for the new server service provider.

In addition, the project continued with the daily consolidation and execution of the NSC data flows for the daily data submissions from RxSolution (manual submissions and API submissions), depot WMS, CCMDD service providers, and PPE data for purposes of the daily NSC refresh in support of the Covid-19 medicine availability and planning activities.

Dashboard development and optimization of data processes feeding into the NSC continued during the quarter and included the following:

- Finance Dashboard: GHSC-TA completed initial data analysis to understand how raw data feeds into the Excel dashboard developed by the budgeting and financial management team. The draft finance dashboard views were completed in November 2020 and are under review.
- PHC Dashboard: The NSC team re-aligned the historic PHC dashboard views and reports to support the new data tables with this development concluding in October. One of the enhancements is the inclusion of a minimum basket item filter on the PHC views to enable alignment of the PHC reporting compliance calculation to the updated SVS reporting compliance calculation.
- Integrated Trend Dashboard: The program investigated the development of reporting compliance trend views. Challenges around calculation definition and aggregation still exist and this work will likely continue through February 2021.
- In-Contract Demand Forecasting Dashboard: The NSC team held a dashboard requirements session with the demand and supply planning team in November focused on how the raw data feeds into the Excel dashboard. This work will continue through January 2021.

Institutionalization of the NSC. GHSC-TA continued to drive the institutionalization of the NSC by compiling reviews of reporting compliance of health establishments to the NSC, as well as reviews of medicine availability at health establishments during the quarter. The program submitted these reviews to AMD on a weekly basis and presented them to AMD and the provinces in the

weekly Covid-19 response meetings. This weekly engagement with AMD and provinces was key in driving the importance of reporting compliance, and contributed to the stability noted in reporting compliance, as well as the increase noted in medicine availability during the quarter.

These reports are also shared with the PST, which engages with provincial counterparts to address reporting compliance and medicine availability issues. In addition, the PST assists the provinces by confirming critical items on the list and assisting to address any issues through the escalation protocol. Medicines that are reported as low on stock are reviewed, and mitigation actions taken as required. The team also continued to provide support with the resolution of queries regarding NSC data and reports from AMD, and the provinces.

Figure 9: Overall Medicine Availability Trend (Oct '20--Dec '20)
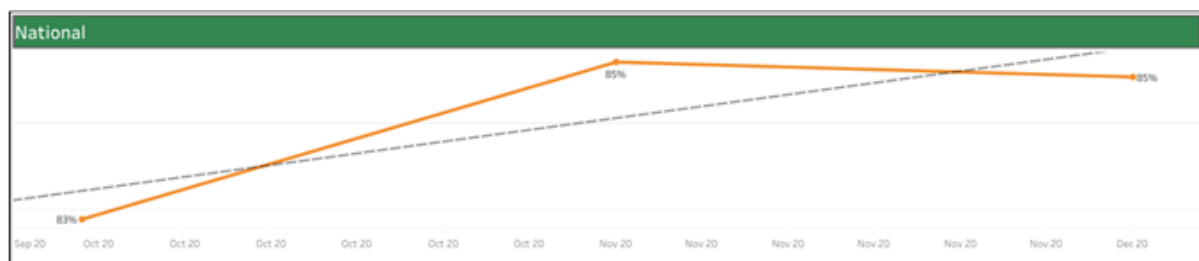
GHSC-TA also conducted the final provincial NSC training session virtually with Limpopo NSC licensed users and leadership and submitted the training report to AMD.

Technical Function Specification. During the period under review, the program initiated work on a variety of technical documents for the NSC, including the NSC technical function specification document, workflow documents, a daily tasks summary, and an NSC design template. The NSC technical function specification document and workflow documents are aimed at providing a blueprint of how the NSC views were developed and how the flows that execute NSC refresh processes are coded. The NSC daily tasks summary outlines all the activities conducted by the GHSC-TA team on a daily basis to maintain the NSC. This document supports the roles and responsibilities document that was submitted to AMD in July 2020 for NSC maintenance considerations, and will be used by AMD to determine whether the NSC maintenance role will be continued in-house or outsourced. GHSC-TA will continue to work with AMD to develop and refine these documents in the coming quarters. The documents will eventually form part of the NSC handover pack to AMD.

SUPPLY CHAIN SYSTEMS

Technology and information systems are critical enablers of health supply chain performance. Key activities performed in support of this objective during the period under review include supporting the development and deployment of information systems, including RxSolution and SVS.

RxSolution Reporting Tool. The reporting API tool is an automated data collection and redistribution tool that GHSC-TA created in Year 2 to collect data from RxSolution data stores. The tool submits data to a centralized repository without any manual intervention across available data channels. During Quarter 1, GHSC-TA assisted with roll out of the tool to the Northern Cape, thereby automating the medicine availability reporting of an additional 30 health establishments.

Implementation and Development of SVS. During Quarter 1, GHSC-TA continued to support the enhancement of SVS aimed at adding ordering and receiving functionality to the currently available visibility functionality. With the UAT completed and report finalised, the focus in the quarter shifted towards planning for the implementation of the POC activities, which will focus on testing the new functionality in a live use-case setting within each of the SVS deployed provinces.

GHSC-TA supported the drafting and finalisation of the POC plan to be used to guide implementation, as well as the training materials that will be used during the expanded deployment. In Quarter 1, the program presented the UAT findings/recommendations and the POC plan to the senior management within the AMD, gaining approval to begin engagements with the provinces to implement the POC. Following the recommendations in the UAT report, the POC will be implemented in cohorts which will cluster provinces according to the similarities observed within each province with respect to how the replenishment process operates.

To date, as part of the informed push replenishment approach, the GHSC-TA demand and supply team has rolled out the new SVS eOrdering functionality to three PHC clinics in the Free State and North West. Preliminary findings show that the new functionality can successfully replace the current paper-based methods of replenishing stock. A particular benefit of the new functionality is the ability to support the electronic upload of the SVS generated order into the remote demander module and RxSolution systems, which will reduce the level of effort required to capture orders electronically from the paper-based order forms currently used.

OUTCOME LEVEL RESULTS

GHSC-TA hypothesizes that, by supporting the AMD in the design and implementation of information technology (IT) systems and the NSC, the AMD will be empowered to deploy systems that support the AMD strategy and enable evidence-based decision making, leading to improved medicine availability.

KPI 12. PERCENTAGE OF USERS UTILIZING THE NSC TO REVIEW MEDICINE AVAILABILITY TRENDS AND REPORTS

This indicator measures the frequency with which users access the data available on the NSC dashboards, including medicine availability trends and other reports. At the end of Year 5 Quarter 1, the performance was reported at 53 percent, below the Year 5 target of 80 percent. A decline occurred in a majority of the provinces, with only Free State and Gauteng consistently performing above the target throughout the quarter. Notably, the lowest usage figures were observed in December (49 percent) which is not surprising given that many of the users usually take a break during this time of year.

GHSC-TA continued to provide support by monitoring usage and engaging with users to identify and address challenges impacting on NSC use. Documented challenges that might have contributed to this decline include connectivity issues, access to the necessary hardware, and clarity around user roles and expectations. It is worth noting that the provinces with the best performance are those in which the greatest strides have been made in the institutionalisation of the use of the NSC, namely KwaZulu-Natal, Gauteng, and Free State provinces.

Several licenses have been allocated to users whose daily activities do not necessitate routine monitoring of supply chain data on the NSC as defined in this KPI. GHSC-TA is currently working with provinces to monitor and support the NSC's usage, including the reallocation of licenses from inactive users to personnel whose activities require them to use the NSC regularly.

Figure 10: Percentage of Users Utilizing the National Surveillance Centre to Review Medicine Availability Trends and Reports
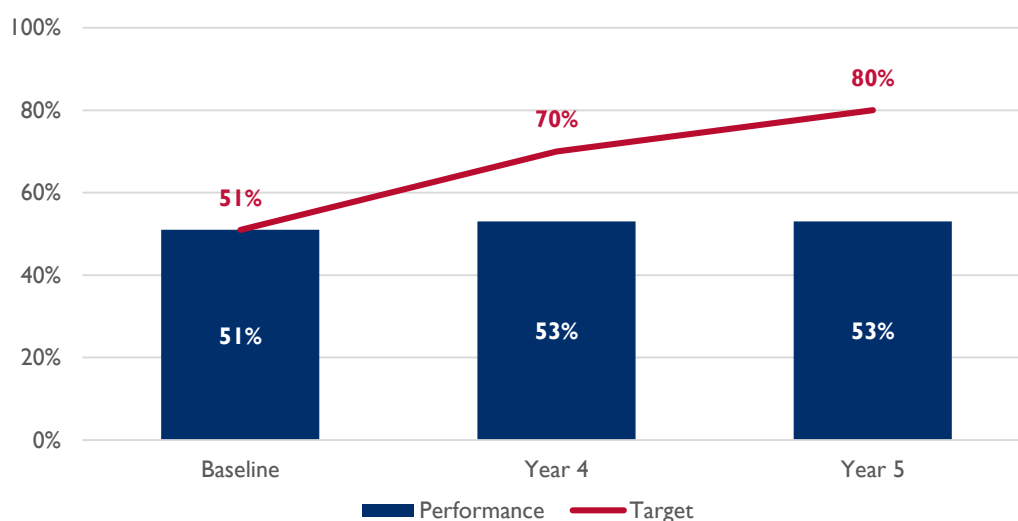
KPI 13. NUMBER OF HEALTH ESTABLISHMENTS AND WAREHOUSES UTILIZING MEDICINE MASTER DATA SYSTEM AS A SOURCE OF MASTER DATA

This indicator measures the number of health establishments, including hospitals and clinics and provincial warehouses, utilizing MMDS as a source of master data. GHSC-TA is not currently able to measure this KPI as the MMDS is still under development. GHSC-TA is providing technical support to the MMDS developers to integrate MMDS data into SVS via system-to-system integration and extending RxSolution to call medicine master data from the MMDS via system-to-system calls. This metric will be tracked when these integrations go live. The process will begin with a trial in the Fezile Dabi district in the Free State, where work is underway to finalize master data for the health establishments that will initially use the tool. The trial is likely to go live by June 2021 and should be complete by the end of September 2021.

KPI 14. NUMBER OF HEALTH ESTABLISHMENTS USING CORE SUPPLY CHAIN INFORMATION SYSTEMS TO ORDER AND/OR RECEIVE STOCK

For this indicator, the program experienced a data access issue owing to a malfunctioning server during the quarter under review. As a consequence, the program only has access to data through November. By the end of November, the total number of health establishments using information systems for ordering and receiving was reported at 701, as shown in Figure 11. A total of 592 health establishments were using RxSolution, 109 were using JAC, and two were using Meditech. There was a slight improvement from 697 reported at the end of Year 4. The server will be rectified by the end of January, and the program will update its records with the accurate data. Additionally, GHSC-TA expects the number of facilities using core supply chain information systems to order and/or receive stock to increase once SVS Phase 2 is rolled out.

Figure 11: Number of Facilities Using Core Supply Chain Information Systems to Order and/or Receive Stock
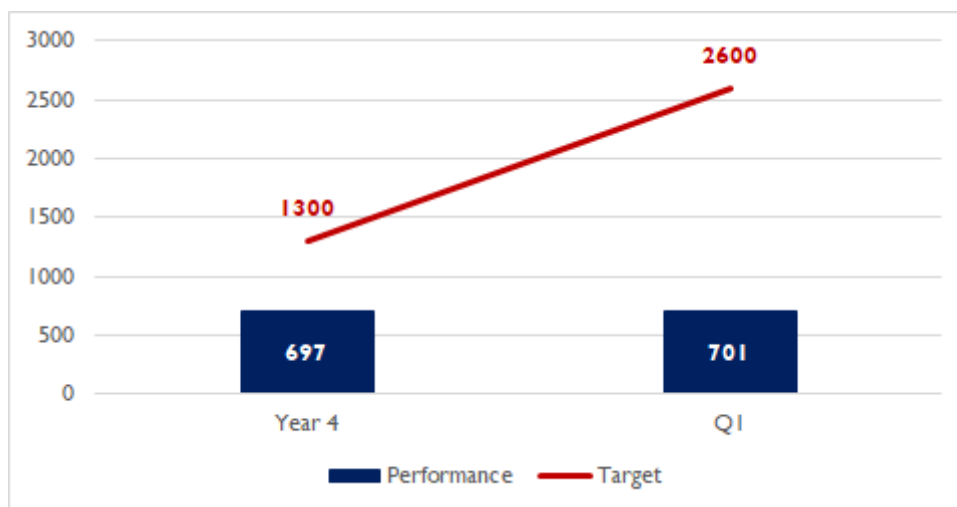
KPI 15. REPORTING COMPLIANCE – PERCENTAGE OF HEALTH ESTABLISHMENTS REPORTING STOCK AVAILABILITY TO THE NSC

The reporting compliance KPI measures the percentage of health establishments reporting stock availability to the NSC. At the end of Quarter 1, a total of 3,790 facilities were reporting stock availability to the NSC dashboard against a Year 5 target of 3,725, bringing the reporting compliance to 102 percent of the GHSC-TA target.

Figure 12: Number of Health Establishments Reporting Stock Availability to the National Surveillance Centre
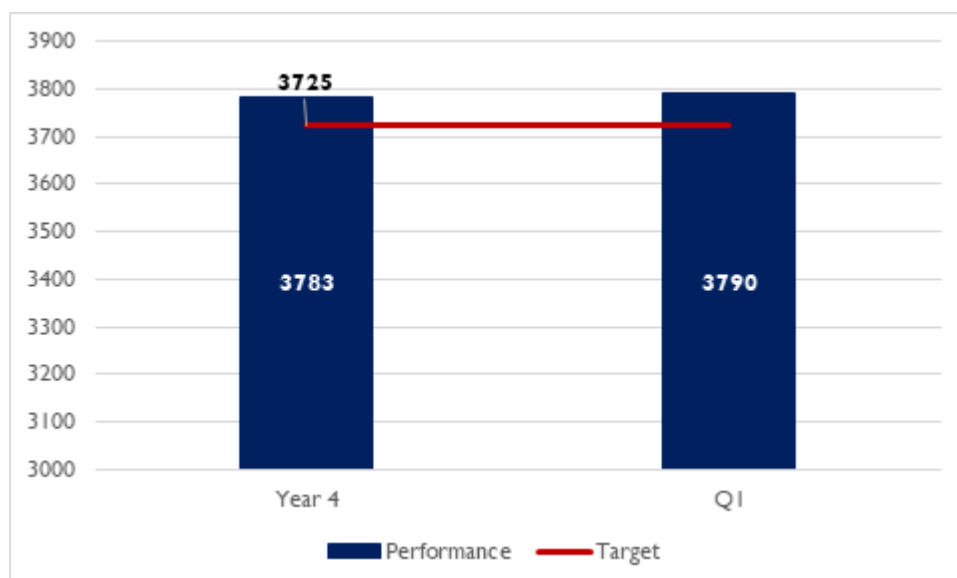
IMPROVE FINANCIAL MANAGEMENT

Strong financial management processes related to medicine procurement are essential for a consistent and uninterrupted supply of medicine. Through more streamlined payment tracking and financial reporting processes, the AMD and provincial pharmaceutical services can better monitor and account for medicine expenditure and manage the payment of suppliers. Improved demand forecasting and planning processes allow for a more effective manner of calculating medicine budgets and monitoring financial management.

ACTIVITIES AND ACHIEVEMENTS

BUDGETING AND FINANCIAL MANAGEMENT

During this reporting period, GHSC-TA commenced the process of handing over some of the tools and processes for monitoring and reporting medicine budget expenditure to AMD. Part of the process has involved supporting AMD to transfer skills to the provinces to manage and maintain the finance dashboard. This process will be completed in two phases. Phase one consists of training on the back-end functions of the dashboard, such as data collection, clean-up, formatting, and capturing. Phase two focuses on training the end users on how to access and review the dashboard, identify key issues, and report potential risks.

Phase 1 Training: Data Capturing and Maintenance of the Finance Dashboard. The dashboard data population was first piloted in the Northern Cape. This pilot allowed the team to test the training material and adjust the approach accordingly. GHSC-TA then organized group training sessions for representatives from three additional provinces, the Eastern Cape, Gauteng, and KwaZulu-Natal. The program also provided one-on-one mentorship sessions for some provinces.

Gauteng Health Establishments Dashboard. Gauteng Pharmaceutical Services requested support from GHSC-TA for their initiative to promote accountability at health establishment level with the Pharmacy Managers given the responsibility to manage and account for medicine expenditure. The request included the design and development of a dashboard that would cater to the unique circumstances at pharmacy level, particularly regarding input data which differ slightly from the aggregated data views at the provincial level. The process involved mapping and aligning the provincial budget data to the relevant financial fund and code to support provincial monitoring. Once tested and completed, the tool will assist to build capacity within health establishments.

Stakeholder Engagements. GHSC-TA made a presentation at the CFO forum, which is the forum attended by the provincial CFOs and Treasury Representatives. The purpose of the presentation was to get buy-in and commitment from the forum to secure and earmark funds for medicines in the new financial year and to present the calculated budget forecasts. The program also made a submission on the budget forecast to the NHC-TAC.

OUTCOME LEVEL RESULTS

GHSC-TA hypothesizes that building the capacity of the AMD and provincial pharmaceutical services to strengthen financial management will improve the use of forecasting and budget information, accounting processes, and financial monitoring and reporting. It is expected that prudent financial management processes will support improved medicine availability.

KPI 16. NUMBER OF PROVINCES WHO REVIEW THEIR BUDGET VS. ACTUAL AS DEFINED IN THE NEW BUDGETING PROCESS TO SUPPORT THE RING-FENCED BUDGET

This indicator measures the effectiveness of GHSC-TA technical assistance supporting the development and implementation of budgeting and financial management processes at provincial level. At the end of Quarter 1, three provinces met the required criteria: Northern Cape, Mpumalanga, and North West. The first phase of training was completed in four provinces: Eastern Cape, Gauteng, KwaZulu-Natal, and Northern Cape. According to the agreed process, these provinces were to submit their mock dashboards by the end of November 2020 to assess the effectiveness of the training sessions and identify gaps and further support required followed by submission of real dashboard output in December. To date, only the Northern Cape has submitted the mock dashboard.

KPI 17. PERCENTAGE OF EXPENDITURES ON NON-ESSENTIAL MEDICINE LIST ITEMS

This indicator measures the percentage of expenditure on non-EML items as compared to total expenditure on medicine at the provincial level. As per KPI 9 and 10, this KPI is also impacted by the lack of data from SITA. GHSC-TA expects to address the data access issue in the coming months, and will report updated performance at the end of Quarter 2.

PROVINCIAL SUPPORT

In this last quarter GHSC-TA marked the one-year anniversary of the introduction of the PST in November 2019. The team's efforts towards supporting the implementation of AMD-led supply chain reforms within pharmaceutical services at a provincial level have met with varying levels of success. The main focus areas included the use and institutionalization of the NSC, medicine supply management at health establishments, implementation of the TLD transition, rational medicine use, and implementation of demand and supply planning. The activities of the team were significantly impacted by the Covid-19 pandemic and resultant country-wide lockdown and social distancing measures. These constraints have meant that the team could not move freely within provinces to support various planned activities.

Figure 13: Provincial Profile
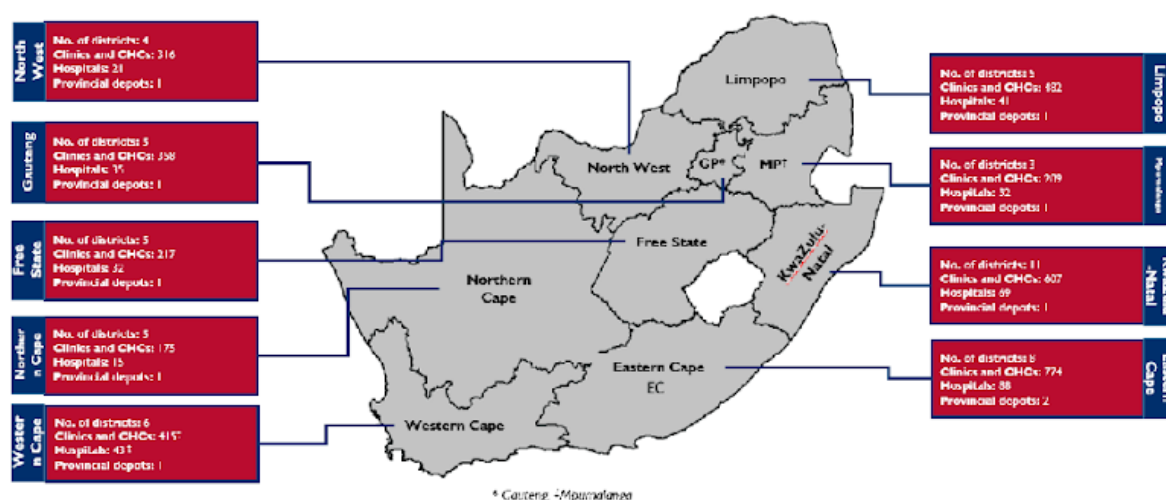
INSTITUTIONALIZATION OF THE NSC

The most successful PST activities so far have been those aimed at driving the use and institutionalization of the NSC dashboards and reports. In particular, national reporting compliance increased significantly, with high levels of compliance week on week, continuing the trend observed in the previous quarter. The reporting compliance ranged from 92.8 percent in October, 90.0 percent in November, to 86.8 percent in December. It is important to note that the decrease in December was mostly a result of a 16.1 percent and 48.5 percent decrease in Free State and Mpumalanga provinces, respectively. This decrease resulted from a mobile device refresher process which meant facilities reporting using SVS in these provinces, did not have a device to use to report to the NSC. PST activities in this area include generating and circulating bespoke reporting compliance and medicine availability reports, continuous monitoring of performance on a weekly basis, and provision of direct support to, and engagement with, provincial counterparts to highlight challenges and devise solutions.

In Gauteng and KwaZulu-Natal, the GHSC-TA PST reinforced the impact of the NSC walk-through sessions. These sessions, conducted during Year 4, improve understanding and use of the NSC. In KwaZulu-Natal, this approach had led to GHSC-TA supporting the development of two abstracts for presentation at a local conference, showcasing the benefits of using an evidence-driven approach to managing the supply of medicines. Other activities supported by the PST during the quarter under review are described below.

MEDICINE SUPPLY CHAIN MANAGEMENT

To ensure the timely availability of data to inform medicine supply management, the PST collaborated with the NSC team to develop a new 'downtime' report, which aims to optimise reporting compliance among sites submitting data to the NSC via the RxSolution reporting API. To augment this report and build capacity within the provinces to identify and address reporting challenges, the team also developed the API basic troubleshooting guide. This guide assists users to identify the cause of reporting downtime as detected in the NSC report and provides guidance on suggested remedial action steps.

The PST also provided extensive support for the review and updating of hospital SOPs in KwaZulu-Natal and Mpumalanga provinces. With the assistance of the PST in KwaZulu-Natal, over 100 depot, hospital, and clinic SOPs were reviewed and updated in Quarter 1.

TLD TRANSITION

During Quarter 1, the PST continued to support the monitoring of availability of TEE, TLD, and contraceptives required for the TLD transition. The team worked closely with the provincial TLD coordinators to flag and address any supply-related issues which may have impacted implementation of the TLD transition. In the coming quarter, the PST will continue with its efforts to ensure strengthened collaboration between the various stakeholders.

RATIONAL MEDICINE USE AND DISPENSING PRACTICES

During Quarter 1, the AMD continued to deprioritize activities aimed at improving rational medicine use, given the focus related to Covid-19. Towards the end of the quarter, however, the team did initiate engagements with the Free State and KwaZulu-Natal provinces, following completion of the formulary reports for the two provinces for further action in the next quarter.

Barring any further delays caused by the pandemic and depending on the capacity of the RMU team, GHSC-TA anticipates that the follow-on assessments, building on the initial PST-supported PTC baseline assessments in Northern Cape, Eastern Cape, Free State, and KwaZulu-Natal, will occur in FY21. The program is planning with the Department to support completion of the outstanding baseline assessments and follow-on assessments in the remaining provinces in this period.

DEMAND AND SUPPLY PLANNING

In the Free State and North West provinces, the PST continues to support implementation of the informed push replenishment model. This work includes providing on-site support to RxSolution and SVS end users. Closely linked to the informed push work is the min-max stock levels project being rolled out in Gauteng, Free State, and Mpumalanga provinces. The PST played a key role in stakeholder engagement and driving key activities across the provinces involved. Other key activities during Quarter 1 included supporting the implementation of RxSolution at informed push sites in Fezile Dabi district in the Free State, as well as supporting SVS users using the eOrdering module at PHC clinics included in the informed push.

The PST also played a key role in supporting the routine demand planning review meetings held across the various provinces.

SPECIAL REPORT: SUPPORTING THE GOVERNMENT OF SOUTH AFRICA IN THE RESPONSE TO COVID-19

GHSC-TA provides technical assistance to the South African government to strengthen public health systems and supply chains to advance an AIDS-free generation, increase medicine availability, and contribute to the achievement of universal health coverage.

A consistent and uninterrupted supply of medicines to meet patient demand is key to an effective health supply chain. Supply and demand planning practices forecast potential disruptions to the supply chain to avoid negative impacts on patients. However, rapidly evolving global pandemics can be difficult to forecast, giving them the potential to negatively impact health outcomes, quality of life, and a nation's economy. The global Covid-19 pandemic may challenge the availability of medicines used to fight HIV/AIDS, TB, and other diseases in South Africa.

Over and above medicines, it is critical to limit the spread of the disease and protect both patients and health care workers. To this end, the need for a reliable supply of PPE is also of paramount importance.

OBJECTIVES

Across the globe, countries are responding to the Covid-19 pandemic by tasking their national departments of health and other relevant bodies with tracking and controlling its spread. The rapid outbreak of Covid-19 presents a challenge to containing it, as does the lack of information on exactly how the virus spreads from person to person and how best it can be treated. South Africa detected its first case of Covid-19 on March 5, 2020. Within two weeks, there were more than one thousand confirmed cases in the country. President Ramaphosa declared a national lockdown on March 27. By December 31, 2020, a total of 1,057,161 confirmed cases of Covid-19 had been recorded in South Africa with the country still under adjusted lockdown.

APPROACH AND KEY ACTIVITIES

GHSC-TA is assisting the NDoH in mitigating the impact of the Covid-19 outbreak in South Africa on the medicine and related medical products supply chain and assisting them in responding to the demand for medicines to manage the disease. Patients who are most at-risk of complications from the virus due to comorbidities like HIV, TB, and other chronic conditions must be able to receive the treatment they need. GHSC-TA has been working closely with AMD and other implementing partners, including CHAI and ARC, to implement Covid-19 related response plans.

In addition to working with AMD, GHSC-TA also provided support to the MAC on Covid-19 - a non-statutory advisory committee appointed by the Minister of Health to provide high-level strategic advice to the Minister and the Director-General of Health on the management of the Covid-19 outbreak in South Africa. As of March 25, 2020, GHSC-TA began providing **secretariat** support to the MAC on Covid-19 and its sub-committees. Assistance was provided in convening over **120 meetings**, documenting proceedings, and drafting advisories on Covid-19 related decisions. At the end of September 2020, the MAC on Covid-19 was restructured to include additional expertise. GHSC-TA assisted with revising the **terms of reference** and **conflict of interest policy** for the restructured committee. During the quarter, the program worked with AMD to provide continued support to the MAC on Covid-19 in convening meetings, providing technical support on ministerial advisories, and collaborating with other Covid-19 technical working groups.

In response to the pandemic, AMD assembled a national and provincial Covid-19 response team. During this period, GHSC-TA continued to support AMD in meetings, twice a week with AMD and once a week with provincial stakeholders, reviewing the demand and supply of Covid-19 medicines.

GHSC-TA also supported the EDP to continually review a list of items required for the management of patients presenting with Covid-19 and additional priority items for which supply security was required. Critical care specialists provided input regarding trends and insight into the selection of medicines. A national Covid-19 EPI modelling team established in the country, provided data about expected patient projections. The demand plan is published every two weeks, and is based on anticipated medicine requirements, patient projections, and baseline demand forecasts. Figure 14 depicts the Covid-19 timeline and the activities undertaken.

Figure 14: Timeline of COVID-19 Events and Response
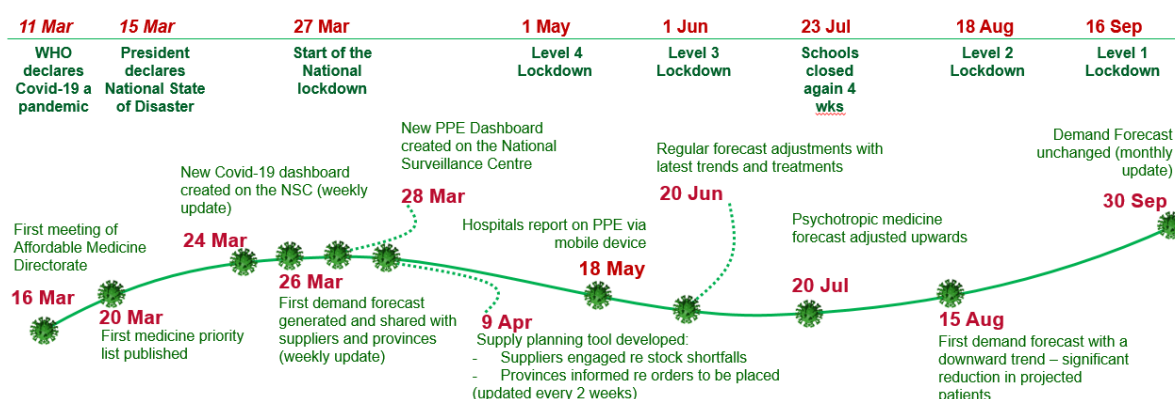
The diagram below (Figure 15) illustrates the demand planning process from when the priority list is developed until the demand forecast is published

Figure 15: Covid-19 Demand Planning Process
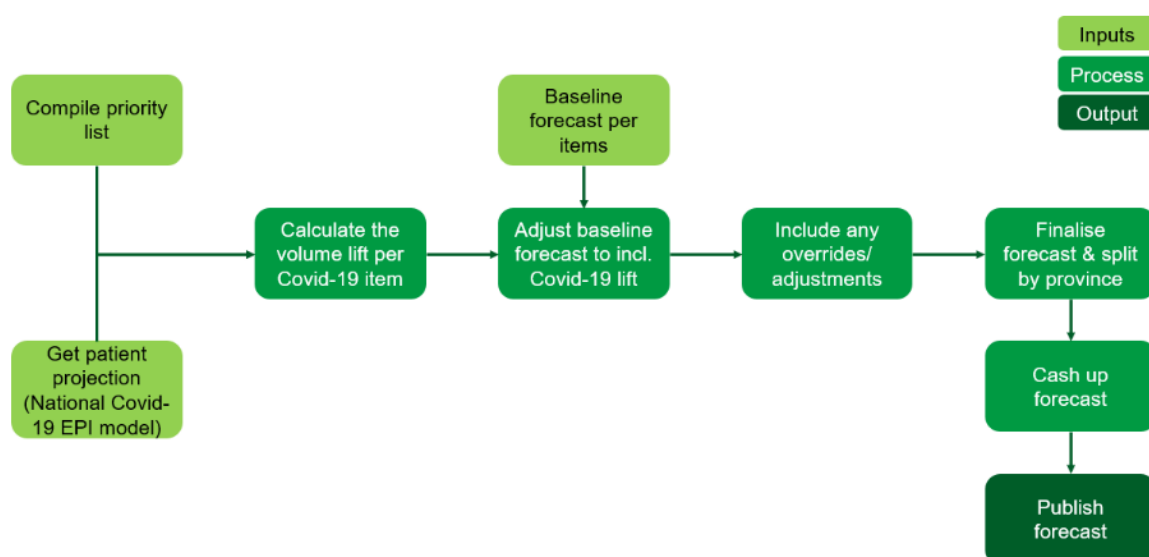
The program supported AMD to present the demand planning work at the Global Health Supply Chain Summit in November 2020.

GHSC-TA continued to support the review of the **replenishment plan** to determine the shortfall in supply of Covid-19 priority and chronic items based on the updated demand forecasts. The plan is used to inform the CMU about the volumes that should be sourced to fulfil the forecasted demand, taking the current opening stock position and supplier pipeline into account. The recommended orders were shared by AMD with the provinces.

The program finalized the **guideline for inter-provincial transfers** of medicines and medical devices, based on comments received from the provinces. The purpose of this guideline is to provide guidance on the principles and processes for the interprovincial transfer of medicines and medical devices, and aims to facilitate equitable distribution of commodities across the country.

GHSC-TA continued to support the national and provincial departments of health with the daily refreshing of the Covid-19 dashboards. The Covid-19 dashboards provide medicine availability and reporting compliance information using product categorization as determined by the Covid-19 response team; that is, Covid-19 priority list items, Covid-19 treatment items, chronic medicines, and non-Covid-19 medicines—the program assisted with query resolution and the monitoring of reporting compliance and medicine availability which was presented to provincial and national stakeholders on a weekly basis during the quarter.

GHSC-TA continued to support the development of the technical content of the **AMD newsletter**. The newsletter is a communication tool used by the AMD to update stakeholders on the progress and development of the work done in relation to Covid-19, as well as other activities of AMD and the provinces. Through the newsletter, stakeholders are also kept informed of the latest updates and developments regarding policies and regulations related to medicines and pharmaceutical services.

PERSONAL PROTECTIVE EQUIPMENT

GHSC-TA continued to provide dedicated support to overcome PPE supply and distribution challenges, acting as a link between the NDoH and provinces with the goal of improving PPE availability for health care workers and patients.

GHSC-TA collaborated with other partners to maintain an updated PPE **forecast**. Forecasts are shared via the NSC. The team also developed a new forecasting model for PPE that takes the forecast down to a health establishment level (the previous forecast only went down to the district level). The new forecast is expected to be visualised on the NSC in the next quarter.

The team continued to work closely with the Department of Trade, Industry and Competition, and the National Institute of Communicable Diseases to train provinces regarding specifications and testing standards for PPE and fit testing. Product quality training was conducted with the provinces' supply chain and quality representatives in December 2020. A quality checklist was also developed to assist supplier evaluation on quality in the procurement process.

GHSC-TA continued to compile a weekly presentation, providing an overview of PPE availability, highlighting gaps in supply, and providing information on actions to mitigate items out of stock at the depot and health establishment levels in the provinces for review and discussion with the Project Management Office. In addition, GHSC-TA continued to coordinate bi-monthly provincial PPE coordinator meetings. These sessions are used to share challenges and find collective solutions.

GHSC-TA engaged the National Treasury to add a field on the **Central Supplier Database (CSD) to** incorporate the PPE manufacturers' SAHPRA registration number; this exercise is still ongoing. The team also worked with the National Treasury to review and quantify Bid RT32 for PPE. The team also assisted the National Treasury with reviewing the updated pricing on Treasury Instruction Note 11.

MEDICAL CONSUMABLES

GHSC-TA worked with clinicians and other stakeholders on a forecasting model for medical consumable items. The exercise was completed during the last quarter. However, the forecasting model has been held up in the approval process.

OUTCOME LEVEL RESULTS

To monitor the performance of the PPE supply chain, GHSC-TA developed PPE-specific indicators, including the percentage availability of PPE at health establishments and the percentage of health establishments complying with PPE reporting requirements.

The first indicator reflects the **availability of PPE** in all health establishments (primary health care clinics, community health centers, hospitals [district, regional, national, central, specialized, and tertiary hospitals], and PPE distribution centers) on a weekly basis. This information assists stakeholders to identify current stock-on-hand quantities and to proactively reduce shortages and stock outs of PPE by looking at stockholding vs. the forecast. This indicator is intended to monitor inventory (PPE) across different levels of the national supply chain (facilities, districts, provinces, and national) and is shown in Figure 16.

Figure 16: Screenshot of Stockouts and Availability by Province as of December 31, 2020

Stockouts and Availability by Province

Province	Total Facilities Submitting PPE Data	Total Available Stock Items	% Availability
Eastern Cape	266	1430	84.3%
Free State	53	333	89.5%
Gauteng	61	94	94.0%
KwaZulu Natal	186	1272	82.1%
Limpopo	121	461	81.3%
Mpumalanga	102	473	89.8%
North West	16	34	79.1%
Northern Cape	74	465	84.5%
Western Cape	26	37	78.7%

By the end of Quarter 1, PPE availability was reported at 84.3 percent, against a target of 90 percent. Factors that continued to contribute to this achievement included the refinement and adoption of the PPE NSC tool, which improved visibility at health establishments and depots; weekly PPE team meetings; and bi-monthly meetings with the provincial PPE coordinators to discuss and assist in unblocking procurement and supply obstacles. Collaboration with the National Treasury and Business for South Africa (an organization which represents South African private sector businesses and actively collaborates with the government to use business resources and capacity to support public sector initiatives) has facilitated refinement of the CSD, which will enable provinces to access quality suppliers and products. The adoption of the demand forecast on the NSC by provinces to perform proactive planning contributed to increased PPE availability. Key challenges remaining include a focus on local and global PPE shortages and unreliable suppliers.

The second indicator, **PPE reporting compliance**, is designed to show how many health establishments and distribution centers report PPE data to the NSC. The overall reporting compliance was reported at 82 percent (refer to Figure 17) up from 79 percent reporting at the end of Year 4. However, performance remained below the target of 90 percent.

Figure 17: Screenshot of Reporting Compliance Dashboard[3]

	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	North West	Northern Cape	Western Cape	Total Facilities
Facilities Submitting Data	845	242	376	571	489	315	326	181	41	3,386
Total Facilities	878	257	442	720	528	331	357	234	361	4,108
% Facilities	96%	94%	85%	79%	93%	95%	91%	77%	11%	82%

Clinic	Community Health Centre	District Hospital	National Central Hospital	Regional Hospital	Specialised Hospital	Tertiary Hospital	WC Rehabilitation Centre	Grand Total
81%	92%	96%	100%	100%	74%	94%	33%	82%

PPE reporting continues to be a platform of significant priority. Reporting compliance is still increasing month by month. Provinces not using SVS as a data capturing tool, such as Gauteng and the Western Cape, implemented in-house systems to support and coordinate reporting on PPE. GHSC-TA continued to support the NDoH to ensure improved performance against this indicator by working with provincial PPE appointed coordinators and other key stakeholders.

Figure 18: Total Cumulative Number of Sites Reporting PPE

Total cumulative number of sites reporting PPE data - 31.12.2020

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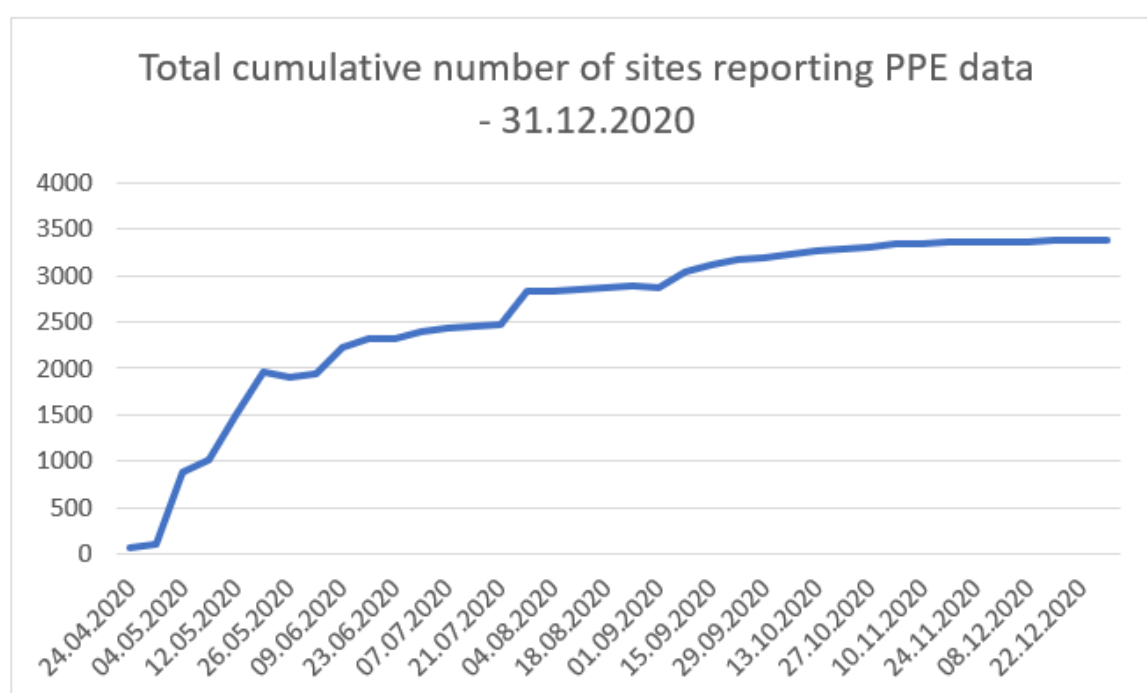
[3] Data as at the end of September 2020. Note: The Western Cape only reports at the hospital level, which brings down overall performance. KwaZulu-Natal had a slow start due to the non-availability of SVS devices at the hospital level, which was subsequently resolved.

LESSONS LEARNED

Adaptability to response to immediate challenges. Supporting efforts to combat the Covid-19 pandemic require the GHSC-TA team to continue to work in a dynamic, flexible and agile fashion. As the country moves towards developing solutions to address this challenge, the team's focus and activities will need to be aligned accordingly, often within short turnaround times. In doing so, GHSC-TA will play a small but critical role in moving the country forward to support the achievement of universal health coverage.

Approval of documentation Timely approval of critical documents and the establishment and/or strengthening of the necessary governance structures is key to the implementation of the identified interventions.

Importance of engaging and managing stakeholders. Successful implementation of the informed push approach is reliant on participation of stakeholders. This engagement is critical during the pre-implementation, implementation, and post-implementation phases. The change team has been integral in designing the change strategy and pro-actively supporting the team to ensure all stakeholders remain engaged throughout the lifecycle of the project.

Leveraging off DSPs (district support partners) to ensure sustainability. The process of implementing informed push has always been that the project team will assist the provinces to scale the work to Phase 1. In order to get buy-in from the sub-district, DSPs become critical in supporting provinces as they roll out informed push further across the provinces. To this end, the project team has started engaging and involving DSPs in a pro-active manner.

Ensuring agility. The successful implementation of the projects at the health establishment level assumes product flow between the health establishment and the depot is reliable, predictable, and has limited issues. In some of the provinces, this has been found not been the case, necessitating secondary focus areas. Agility is required to address these challenges, reach agreement on plans to optimise product flow between depot and facilities to facilitate deliver against the objectives.

FINANCIAL MANAGEMENT

ANNEX 1. PROGRESS SUMMARY

Table 3: Key Performance Indicator Progress Summary

INDICATOR	REPORTING YEAR	BASELINE VALUE	YEAR 5 PROPOSED TARGET	YEAR 5, ACHIEVEMENT	% YEAR 5 ACHIEVEMENT
PROJECT PURPOSE – STRENGTHEN THE CAPACITY OF THE AFFORDABLE MEDICINE DIRECTORATE AND PROVINCIAL PHARMACEUTICAL SERVICES ACROSS THE MEDICINES SUPPLY VALUE CHAIN TO RESULT IN IMPROVED MEDICINE AVAILABILITY					
KPI 1: Percentage availability of medicines at health establishments	FY21	78%	90%	88%	98%
OBJECTIVE 1 – IMPROVE SELECTION AND USE OF MEDICINE					
KPI 2: Number of medicine selection decisions made utilizing health technology assessments	FY21	0	2	0	0
KPI 3: Percentage of assisted Pharmaceutical and Therapeutics Committees with improved operational capacity.	FY21	N/A	25%	NA	NA
OBJECTIVE 2- SUPPORT OPTIMIZATION OF THE SUPPLY CHAIN					
KPI 4: Percentage of antiretroviral units delivered by suppliers within contractual lead-time (supplier performance reliability – on time).	FY21	79%	90%	45%	50%
KPI 5: Percentage of Master Health Produce List items on transversal contracts excluding antiretroviral units delivered by suppliers within contractual lead-time (supplier performance reliability – on time).	FY21	75%	85%	53%	62%
KPI 6: Supplier performance reliability – Perfect order fulfilment for orders placed on suppliers (in-full).	FY21	73%	80%	51%	64%
KPI 7: Percentage of master health product list items on transversal contracts delivered via direct delivery to the hospitals designed by the provinces to receive direct delivery.	FY21	N/A	70%	NA	NA
KPI 8: Min/Max level reporting – Number of health establishments and warehouses with configured minimum and maximum (min/max) stock levels for stocked medicines being reported to the National Surveillance Centre.	FY21	0	1,500	1,595	105%
KPI 9: Demand forecast accuracy for provinces using the demand forecasting process.	FY21	N/A	45%	NA	NA

INDICATOR	REPORTING YEAR	BASELINE VALUE	YEAR 5 PROPOSED TARGET	YEAR 5, ACHIEVEMENT	% YEAR 5 ACHIEVEMENT
KPI 10: Forecast bias for pharmaceutical forecasts in provinces using the demand forecasting process.	FY21	TBD	<10%	NA	NA
KPI 11: Percentage of eligible patients transitioned from Tenofovir/Emtricitabine/Efavirenz to Tenofovir/Lamivudine/Dolutegravir.	FY21	0%	100%	60%	60%

OBJECTIVE 3 – STRENGTHEN GOVERNANCE

No KPIs scheduled to be reported quarterly.

OBJECTIVE 4 – IMPROVE WORKFORCE MANAGEMENT

No KPIs scheduled to be reported quarterly.

OBJECTIVE 5 – STRENGTHEN INFORMATION SYSTEMS AND INFORMATION MANAGEMENT

KPI 12: Percentage of users utilizing the National Surveillance Centre to review medicine availability trends and reports.	FY21	N/A	80%	53%	66%
KPI 13: Number of health establishments and warehouses utilizing the Medicine Master Data Systems as a source of master data.	FY21	0	3,000	N/A	N/A
KPI 14: Number of health establishments using core supply chain information systems to order and/or receive stock.	FY21	0	2600	701	27%
KPI 15: Reporting compliance – Percentage of health establishments reporting stock availability to the National Surveillance Centre	FY21	N/A	100%	102%	102%

OBJECTIVE 6 – IMPROVE FINANCIAL MANAGEMENT

KPI 16: Number of provinces who review their budget vs. actual as defined in the new budgeting process to support the ring-fenced budget.	FY21	0	4	3	75%
KPI 17: Percentage of expenditures on non-Essential Medicine List items.	FY21	1.60%	<10%	NA	NA

ANNEX 2. SUCCESS STORIES

Embracing Change by Adopting Technology

Using the National Surveillance Center as a More Accurate and Reliable Source of Data about Medicine Availability in Free State Province

GHSC-TA

Pharmacists across South Africa strive to ensure that the appropriate medicines are always available for patients when they visit their hospital, community health center or clinic. To do this, pharmacy staff employ various methods to track which medicines need to be restocked at any given time.

In the Free State province, the methods for tracking medicine availability varied. For many years, pharmacy personnel and nurses in the Free State used two types of manual reports to capture medicine availability at primary health care (PHC) health establishments: Excel spreadsheets ('drug' availability reports) and tick sheets (clinic availability reports). The Excel spreadsheet was used to capture the availability of medicines at a health establishment while the tick sheet was used as a binary measure to indicate if an item was out of stock at the health establishment. Neither report showed the quantities available in real-time and required manual consolidation at a district and provincial level.

By the time the information was consolidated and ready to be used, the health establishment's stock situation may have changed, meaning the reports did not provide an accurate medicine availability view. Furthermore, this data was only collected twice a month.

Once feedback from the facilities was received, the district pharmacists would consolidate the information and share the reports with the provincial pharmaceutical services office. The tick sheet was often considered the 'go-to' report for many facilities since compiling the Excel-based report was a tedious process. As a result, stakeholders only had a partial view of the overall picture and, even then, it was a view which did not show the actual quantities for those items which were available.

The United States Agency for International Development (USAID)-funded Global Health Supply Chain Program – Technical Assistance (GHSC-TA) worked with the National Department of Health and provincial departments of health on the development and implementation of the Stock Visibility System (SVS) and the rollout of RxSolution in South Africa, including the Free State. SVS is a mobile application and web-based management tool that provides an innovative solution for identifying and addressing stockouts in the health care system. RxSolution is an electronic stock management system that captures and records medicine transactions including stock movement in a pharmacy. It allows for easy tracking and management of medicine stock, can be used to record the dispensing of medicines, and supports reporting of medicine availability. Health

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practitioners use both systems at PHC facilities to manage and monitor medicine availability, supporting improved access to medicines and helping to ensure that the supply of medicines in PHC facilities meets patient demand. Both SVS and RxSolution feed data into the National Surveillance Center (NSC) for improved visibility of medicine availability across all levels of care.

The NSC is a web-based performance monitoring and evaluation tool. Using nationally agreed key performance indicators, medicine availability data from health establishments, pharmaceutical depots, and suppliers of medicine is visualized on dashboards, providing a holistic view of medicine availability throughout the South African public health medicine supply chain. With the introduction of RxSolution mostly in hospitals and SVS in PHCs, most health establishments demonstrated improved inventory management.

As is the case with any new system, users and viewers of the NSC's dashboard reports were skeptical about the tool's accuracy. Manual reports were still being used in the province in parallel with the electronic data collection tools. The manual reports were mostly used to assist with redistribution of medicines. When it came to technology, health care providers created WhatsApp groups to circulate some of the information from these reports and facilitate the redistribution of medicines between clinics with surplus stock and those with shortages. Despite the availability of this information on the NSC, district pharmacists seemed slow to adopt the new technology, regardless of its ability to provide visibility of medicine across all levels of care. The introduction of the NSC in the Free State in 2019 enabled the monitoring and visibility of medicines across the province, paving the way for evidence-based and timeous interventions, but only if health care providers adopted the use of the system.

To increase utilization of the new technology, GHSC-TA through its Provincial Support Team provided on-the-job support to licensed users to improve the NSC's use and institutionalization. Through this support, NSC users improved their knowledge of the tool and began to enjoy the benefits of having full visibility across the supply chain when managing medicines in their health establishments. As a result, the use of the historic manual spreadsheets and tick sheets and resultant consolidated reports lost traction, as these were shown to be less accurate and reliable when compared to the data provided by SVS and RxSolution presented on dashboards on the NSC.

During one of the Free State Pharmacist Forum meetings, the Pharmaceutical Services Deputy Manager, Mr. Patrick Kgapola, highlighted that health establishments do not have any reason to continue manual reporting, as all the information is already consolidated and is available at their fingertips in a user-friendly manner.

The use of the NSC has provided district pharmacists with accurate and up-to-date information to monitor medicine availability. The information drawn from the dashboards provides information to support decision making and supports improved inventory management at all levels of care. With this new technology, fewer stockouts have been reported and rapid remedial actions can now be taken to avoid stock availability issues.

"The medicine availability dashboard is useful in monitoring consumption of items; it helps to identify surpluses and shortages, thus facilitating redistribution of stock. You can zoom into specific items at a click of a button without having to contact the facility or get the same report telephonically, especially in cases of far-off facilities."
— *Charlotte Moatlhodi, District Pharmacist, Lejweleputswa*

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FORECASTING IN A CRISIS

Using Demand Planning to Prevent Medicine Stock Outs in South Africa's Public Health Supply Chain During the Covid-19 Pandemic

Fauxels from Pexels

"Plan for the Worst – Hope for the Best!"

On March 5, 2020, South Africa recorded its first Covid-19 case. The number of cases escalated rapidly; by September 16, more than 663,000 Covid-19 cases had been diagnosed and more than 16,000 fatalities recorded. By January 5, 2021, there were 1,127,759 positive cases registered in the country and 30,524 deaths.[1]

Faced with such a crisis, it was essential for South Africa to ensure its health system was up to the challenge. One of the most important components the country put into action was an enhanced demand planning process.

Demand planning is a supply chain management system of forecasting, or predicting, the future demand for products to ensure that plans can be made to meet the demand. It combines statistical forecasting techniques and judgment to construct demand estimates for health products or services across the supply chain from the suppliers' stocks to patients' needs.

The South African National Department of Health (NDoH), with the support of the United States Agency for International Development (USAID)-funded Global Health Supply Chain Program –

Technical Assistance (GHSC-TA), undertook the task of forecasting the country's medicine requirements during the Covid-19 pandemic.

South Africa has a two-tiered health system. Most of the population makes use of public health services. Medicines to treat most conditions are selected at a national level and form part of the Essential Medicines List. Standard Treatment Guidelines are developed and continually reviewed to support the appropriate use of these medicines. The public sector awards contracts for medicines and other consumables at a national level, leveraging off economies of scale to bring costs down. These items are procured off contract by public hospitals and clinics. The NDoH's Affordable Medicine Directorate (AMD) executes processes relating to selection and contracting.

To prevent medicine shortages during the pandemic, the AMD undertook several important steps. First, AMD **set up a team of experts** to advise on medicine selection, rational medicine use, demand forecasting, procurement, and logistics. These experts **engaged with a broad group of stakeholders including critical care specialists** to determine the challenges on the

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[1] Covid-19 Corona Virus South African Resource Portal

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ground. Then, the AMD **established an engagement platform** to share information and enhance communication, **with regular meetings** to ensure all stakeholders were aligned. The AMD **received constant updates with new data, insights, and feedback from the field** to make planning more accurate. Through these efforts Covid-19 priority medicines were selected and demand forecasts developed.

Medicine Selection for Covid-19

At the beginning of the pandemic, not much was known about how to treat Covid-19 patients, nor what additional medical complications could arise from this infection. The AMD reviewed the STGs for possible disease states and complications that could be of potential concern during the Covid-19 outbreak and the medicines used to treat these conditions. A list of potential medicines was drawn up and refined through expert reviews.

The NDoH drafted a Covid-19 guideline for South Africa, which was updated through a rapid review process. All documents were published on the NDoH website for easy access and transparency. Other critical items were added to the list where security of supply was at risk, especially from products that had to be imported. This added 367 items to the list that was managed by the Covid-19 task team, and dubbed the "Covid-19 Priority List".

Establishment of the Covid-19 demand forecast

The AMD and GHSC-TA team was fortunate to be able to work from existing demand planning processes that have been implemented over the last three years. The key question was to determine the additional volume of medicine that was going to be required to treat patients presenting with Covid-19. Baseline forecasts were available for each product at every health establishment across the country. This baseline provided an excellent starting point to which the Covid-19 volume lift was added. Constraints that would limit treatment, such as the number of beds, supplier shortages, and availability of medical staff, also had to be considered.

The second component of the demand planning process was a patient level forecast. The National Covid-19 EPI Modelling Consortium made up of statisticians, epidemiologists, virologists, and other experts was established by the NDoH to produce this forecast. They generated a model considering elements such as transmissibility, infection severity, treatment pathways, and public compliance to lock down measures, which resulted in mapping of multiple scenarios of patient numbers that would require treatment in primary health care clinics and hospitals, including intensive care units.

With input from the Covid-19 Priority List and the patient level forecast, the AMD and GHSC-TA team could establish the Covid-19 volume lift. The estimated additional items required to treat Covid-19 patients were added to the baseline forecasts to establish a **Covid-19 forecast**. Provincial and national role players would add input to adjust the forecast which was broken down per province in volume and value terms. This information was shared with the provincial pharmaceutical services teams, finance teams and other key role players to help make sure that medicines were available where needed. Several months into the pandemic, the World Health Organization shared a forecasting tool to help countries forecast their Covid-19 medicine requirements. This aligned with the NDoH forecasting process, confirming that the project team was on the right track.

The demand planning team generated forecasts which were updated based on input from experts, provinces, and national and international research. Suppliers could use these forecasts to drive increase in their stock availability and provinces could make sure they ordered enough stock. All this was achieved because of a reliable forecast. GHSC-TA's demand planning support ensured that AMD had a high level of stock availability throughout the Covid-19 peak period and that lifesaving medicines were available for patients at the right place at the right time.

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WHEN TECHNOLOGY MEETS TEAMWORK

uMzinyathi District's Purposeful Drive Towards Improved Medicine Availability

KwaZulu-Natal Department of Health

uMzinyathi is a district located in the west of South Africa's KwaZulu-Natal province. It has a population of 571,650, of which 93 percent (531,634) are uninsured and depend heavily on state health services to treat the most prevalent diseases in the district: HIV/AIDS, respiratory conditions, gastroenteritis, and hypertension.[1] The district's state health services include 53 clinics that offer primary health care (PHC) services; one community health care center that offers PHC services, short hospital stay facilities, and outreach programs; four general hospitals; and one hospital that specializes in treating TB.[2] For each of these facilities, the availability and accessibility of essential medicines are integral to achieving positive health outcomes for patients.

uMyzinyathi district's health facilities track medicine availability using the National Surveillance Centre (NSC)[3]. Apart from displaying overall aggregated medicine availability and reporting compliance per province, the NSC also provides a view of disaggregated medicine availability and reporting compliance rates per district and health establishment, allowing

managers to make evidence-based decisions to manage the supply of medicines and prevent stock outs. However, in early 2020, several factors resulted in decreased medicine availability being shown on the NSC dashboard for uMzinyathi district.

Ms. Sineziwe Mazibuko, the district pharmacy manager, was determined to improve her district's use of the NSC to increase medicine availability. Under her strategic leadership, combined with her foresight, organizational skills, and an added dose of positivity, the district's health facilities increased their knowledge and skills in medicine availability to improve the district's use of the NSC to improve medicine availability within the district.

Through the support of the United States Agency for International Development (USAID)-funded Global Health Supply Chain Program – Technical Assistance (GHSC-TA)'s provincial support team (PST), Ms. Mazibuko and other provincial and district managers were mentored

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[1] KwaZulu-Natal Health
[2] KwaZulu-Natal Health

[3] The NSC is a web-based performance monitoring and evaluation tool used to provide visibility of medicine stock levels and improve medicine availability across all provinces.

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in the use of the NSC to optimize pharmaceutical services.

As part of this support, the PST provided user-friendly district and facility medicine availability and reporting compliance reports to the managers on a weekly basis so that they could review and do a comparative analysis to practice using the NSC to make important decisions related to medicine availability.

Having strong systems in place is only half the battle, though. The real impact is realized when teams adopt and utilize the systems effectively. Fortunately for uMzinyathi, the District Pharmacy Manager, was up to the challenge. She evaluated her district's NSC reports to identify facilities with low medicine availability and engaged with them to improve their performance. Furthermore, she consistently reviewed the NSC data and engaged with the PST to undertake a structured root cause analysis with facility managers to provide recommendations to address decreased medicine availability.

In February 2020, the uMzinyathi district recorded an average medicine availability of **86 percent**. This number increased significantly over time, jumping from **90 percen**t on March 27, 2020 to **95,2 percent** on December 27, 2020.

Ms. Mazibuko ensured that her staff were adequately trained in medicine supply management (and the use of appropriate standard operating procedures) to promote good practice and adherence to the required standards. Through her regular check-ins, she was able to identify any gaps in skills and address them effectively. She also utilized WhatsApp groups to communicate challenges and express appreciation to managers who were committed to implementing quality improvement plans to minimize medicine stock outs.

While the NSC serves as a valuable source of medicine availability and reporting compliance data, district pharmacy managers, like Ms. Mazibuko, need to be constantly engaging with their facilities to ensure efficient and effective medicine supply management. The key ingredient for uMzinyathi has been the adoption of technology combined with continuous teamwork. Continuous monitoring and evaluation are of paramount importance to monitor adherence to standard operating procedures designed to increase medicine availability. All these ingredients combined have aided in realizing uMzinyathi district's success.

Ms. Sineziwe Mazibuko, uMzinyathi's District Pharmacy Manager

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LAYING SOLID FOUNDATIONS

The Importance of Governance Tools to Underpin a Medicine Master Data System

Aliaksandr Zadoryn

South Africa has a unique HIV and tuberculosis (TB) burden. It is at the center of the global AIDS epidemic and has one of the highest burdens of TB in the world. An efficient and effective health supply chain that improves medicine availability is critical to addressing that disease burden. South Africa's unique disease burden shapes the country's national health priorities, health system design, and health funding structures. Limited funds must be allocated according to an evidence-based approach to provide the best quality health care to all South Africans. Strengthening of medicine selection and rational medicine use provides an accountable mechanism to support decision making related to the funding, cost, and use of medicines and health technologies in the country.

The National Department of Health (NDoH)'s Affordable Medicine Directorate (AMD)[1], through the relevant governance bodies, is responsible for supporting the selection of essential medicines for patients nationally, as well as making sure these medicines are accessible

and available when and where they are required. Some of the key challenges faced by the department in recent years include the use of stand-alone electronic medicine management systems with a lack of integration or interfacing of these systems. This situation makes managing processes and reporting on the medicine supply chain difficult because of different naming conventions of products. There was also a lack of agreement on policy principles relating to medicine master data. In addition, as is the case worldwide, limited funds need to be allocated according to an evidence-based approach to provide the best quality health care to all.

Through the support of the United States Agency for International Development (USAID)-funded Global Health Supply Chain Program – Technical Assistance (GHSC-TA), the AMD developed governance documents to inform a Medicine Master Data System (MMDS). The system provides a set of master data for use in stock management, dispensing, and reporting systems. This includes formularies which provide information about the medicines available in a

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[1] AMD is responsible for developing systems to ensure access to essential pharmaceutical commodities. It includes the Essential Drugs Program responsible for selection and rational use of medicine, the National Contracting Unit responsible for establishing centrally administered contracts, the Contract Management Unit responsible for post-award contract management and performance monitoring, and the Licensing Unit responsible for the administration of certain licenses and permits.

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province, district, and health establishment and are managed by the relevant Pharmaceutical and Therapeutics Committees (PTCs).

Governance documents were developed to define the principles on which rational selection, management, and use of medicines should take place, as well as to inform the basis on which medicine management systems should be built. Initial scoping documents were developed and circulated to key internal and external stakeholders to help ensure that the guidelines address stakeholder needs, and thus support effective implementation.

Through this process, three key documents were developed - the National Formulary Guideline, the Medicine Master Data Policy, and the National PTC Guideline. The PTC policy had already been developed to provide standards for the establishment of a non-statutory, multidisciplinary, advisory committee, PTCs.

To encourage stakeholder participation, drafts of the documents were developed following literature review, brainstorming, and alignment with existing policies and international best practice. Once drafts had been prepared, rigorous stakeholder consultation took place, involving invitations for comment, presentations, and one-on-one feedback sessions. Governance documents were then refined and signed off by the relevant level within the NDoH.

Firstly, the **National Formulary Guideline** was developed to define the concept of a formulary; give guidance on the development, management, and use of formularies at all levels of care; and emphasize the importance of formularies as the basis for the procurement and management of medicine to support medicine availability and rational use.

The **Medicine Master Data Policy** was then developed to define the concept of medicine master data in the context of the public sector and provide guidance on its development,

management, and use. Lastly, the **National PTC Guideline** was developed to give guidance and corresponding tools for use by PTCs, as well as an outcomes-based approach for good governance and rational selection and medicine use. It also standardizes functions, roles, and objectives for all PTCs at different levels based on generic terms of refence.

The process is far from over, and ongoing gap analysis ensures that the policies continue to be refined to ensure that they address existing challenges in real time.

Documenting and gaining agreement on the policy principles was a fundamental input to successful design, development, and introduction of the MMDS. Stakeholder consultation ensured that practical implications and considerations are considered, enhancing the acceptability and effectiveness of policy interventions.

These interventions will enable the integration of medicine selection, contracting and contract management, supply chain, and use, as well as easier analysis, alignment, and visibility of formularies. In addition, the supply chain will be informed through medicine-use evaluations, with more efficient procurement and increased medicine availability.

Electronic systems based on strong governance are key drivers of improved access to medicines. Governance tools including polices and guidelines, with implementation through electronic systems, enable the right dose of the right medicine to be given to the right patient at the right time, and promote sustained improvement in clinical outcomes.

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