TECHNICAL BRIEF:
MEDICINE MASTER DATA SYSTEM

GLOBAL HEALTH SUPPLY CHAIN PROGRAM – TECHNICAL ASSISTANCE

The United States Agency for International Development (USAID) funded Global Health Supply Chain Program – Technical Assistance (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.

The Affordable Medicines Directorate (AMD) within the South African National Department of Health (NDOH) is working towards ensuring that medicine master data can be exchanged and processed between different devices and across networks within the public health medicine supply chain. The development of the Medicine Master Data System (MMDS) will provide a centralized, uniform set of master data relating to medicine. 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 National Surveillance Center (NSC), ultimately contributing to improvements in medicine availability.

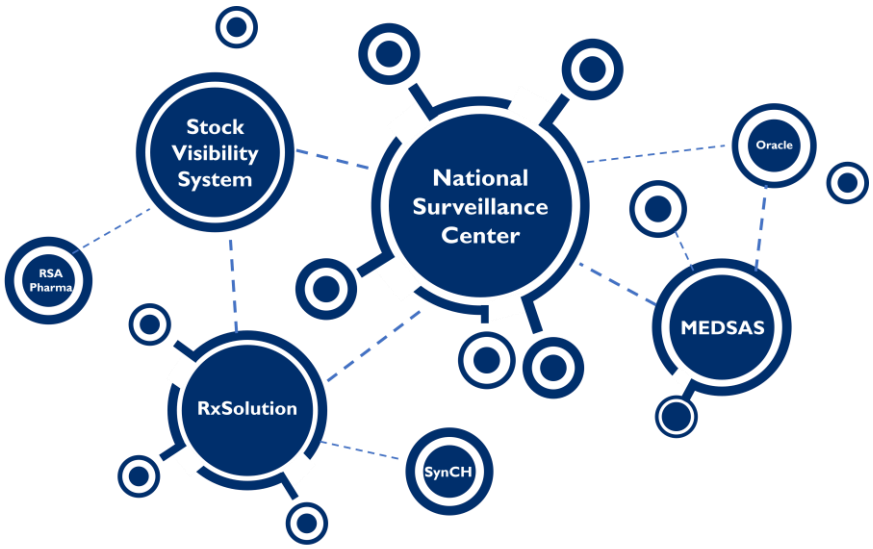
OBJECTIVES

Health establishments in South Africa have historically faced challenges around internet connectivity. Limited internet access has prevented the use of centralized systems such as cloud-based solutions and internet applications for the management and sharing of medicine master data, hindering visibility of medicine availability at the national and provincial level. Although many public health care facilities now have access to information technology systems, they are often configured independently of each other, resulting in data relating to the same medicine being described and recorded differently on different systems and in different facilities (even when the same system is used). This situation makes data comparison and analytics across the supply chain challenging, thereby negatively impacting visibility of medicine availability and medicine usage.

Reduced visibility of medicine availability and use has contributed to inefficient stock monitoring and poor demand and supply planning, with often sub-optimal medicine procurement and management processes in place across the supply chain.

The AMD is developing the MMDS to centralize the management of medicine master data in South Africa into a central pool. The goal is for information systems to read medicine master data from this pool via system interfaces (connectivity permitting) to achieve seamless interoperability across systems, so that the central data pool informs the various inventory management, dispensing, and reporting processes.

Furthermore, the lack of clean, centralized data means that there is limited transparency regarding which medicines are available and used in the different provinces. A formulary tool is being developed within the MMDS to address challenges related to the development and management of the formularies used by Pharmaceutical and Therapeutics Committees (PTCs) to describe which medicines should be available for the treatment of patients, aiming to improve oversight of medicine use. Procurement systems will ultimately reference formularies when making buying decisions, leading to improved procurement processes.



The current manual spreadsheet-based national Master Procurement Catalogue (MPC), which the MMDS replaces, includes information on medicines for which a national transversal contract has been

awarded, but does not hold data on products procured off-contract at a provincial level. The MMDS will extend the specification of medicines to include all medicines used in the public health system.

By improving the capacity for data comparison and analytics, the MMDS will support improved data analysis for the purposes of demand and supply planning in the supply chain, as well as better forecasting for budgeting purposes in the financial arena.

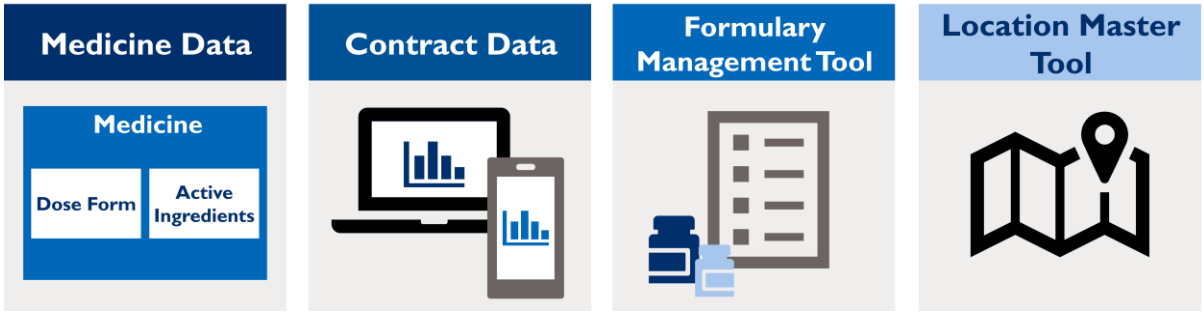
APPROACH AND KEY ACTIVITIES

GHSC-TA is working with the AMD to support the development and implementation of the MMDS. The program provides input into the design and technical specifications for each module and assists with user acceptance testing and the creation of policies and standard operating procedures to guide effective implementation and use of the system.

The MMDS will consist of:

- Medicine Data and Contract Data: List of all medicines that are procured in the public health sector through a national transversal or provincial contract or on a quotation basis. Where contracts exist, the system will provide the details required by provincial buyers to draw down on the contract. This will replace the MPC as the master list of all medicines used in the public sector.
- The Formulary Management Tool and related Location Master Tool: Will support the development, management, and use of standard formularies for all provinces, districts, sub-districts, and public health facilities. These formularies inform which medicines should be stocked by hospitals and clinics, aiding the management of medicine supply and ultimately medicine use.

As of September 2019, the medicine and contract data components had been successfully developed and GHSC-TA was assisting with the upload and quality checking of legacy MPC data. The Formulary Tool was in the design phase. The entire MMDS system will be completely developed, with data loaded and checked for quality, by mid-2021. It will be managed by AMD and will be interoperable with other electronic systems via an application programming interface.



EXPECTED OUTCOMES

GHSC-TA's MMDS technical assistance will result in the following improvements, strengthening the health supply chain in South Africa:

- The establishment of a centralized medicine master data system with a relatively static collection of identical master data available at national, provincial, district, and facility levels, enabling data integrity and consistency.
- Improved opportunities for integration and system interoperability across medicine

management systems at all levels of the supply chain.

- Increased transparency across the medicine value chain.
- Opportunities for better monitoring of medicine expenditure, more efficient demand and supply planning, and better oversight of medicine use to ensure patients receive medicines appropriate to their clinical needs.

LESSONS LEARNED

Clear, agreed-upon policy principles and a well-defined scope are key to the development of any electronic system. Building an electronic system on principles that are not finalized and documented in a formal policy could result in less effective development, with longer timelines to completion. In addition, the scope of a project should clearly be defined to ensure alignment of expectations by all stakeholders. GHSC-TA worked with AMD to develop the Medicine Master Data Policy prior to development and design of the system. A concept note was also developed to clearly define the scope of the project, emphasizing the value of conceptualization at the onset of an IT development project.