Using PrEP-it to Inform Commodity Forecasting for HIV Prevention Products: Lessons Learned from Kenya

I. Introduction

This document demonstrates how the PrEP Implementation planning, monitoring, and evaluation Tool (PrEP-it) can be used to inform forecasting for HIV prevention commodities, with lessons learned from Kenya's experiences using PrEP-it during national commodity forecasting exercises. PrEP-it is a web-based tool that helps users set targets, estimate costs and impact associated with targets, identify priority subnational areas for pre-exposure prophylaxis (PrEP) based on HIV incidence, and forecast needed commodities. It is available at https://prepitweb.org/ and includes context-specific help documentation.[1]

The use of PrEP-it in forecasting for HIV prevention commodities is especially timely because it can accommodate forecasting for oral PrEP as well as newer PrEP commodities such as the dapivirine ring (also called the PrEP ring) and injectable long-acting cabotegravir (also called CAB PrEP) that are currently being introduced in many countries.

The intended audience for this technical brief includes those involved in PrEP commodity forecasting processes. They may include national and subnational HIV program managers or pharmaceutical supply managers, donors, staff of nongovernmental organizations or other service delivery partners, and any other stakeholders involved in PrEP commodity forecasting. This document can also be used to increase understanding of PrEP-it among those engaged in allocating funding for PrEP commodity procurement, such as donors and country-level decision-makers.

II. Background

Commodity forecasting exercises are needed to ensure clients receive the health products they need. These exercises are intended to help avoid shortages or stock-outs that affect uptake, continuation, and overall

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[1]Additional PrEP-it resources are available at https://www.prepwatch.org/resources/prep-it/, and users can join the PrEP-it Community of Practice to ask questions and share lessons and resources related to use of the tool at https://prep-it-community-of-practice.mn.co.

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demand for products. The exercises also inform budgeting and guide advocacy for and allocation of scarce resources for HIV prevention programming. Forecasting for new products can also help provide manufacturers and suppliers with the information they need to scale up production and ensure adequate supply.

In many countries, processes and tools are in place for HIV commodity forecasting. However, PrEP commodity forecasting has specific challenges, such as:

- Data used for forecasting, such as client population size estimates, programmatic/service delivery capacity, and/or consumption data (e.g., logistics data) may be lacking.
- Complete, timely, and accurate data are needed to inform accurate estimates.
- PrEP rollout is fairly new, and implementation is evolving, so data may not be available to estimate expected continuation rates and uptake of event-driven or routine PrEP regimens.

These challenges are especially significant as new HIV prevention products are introduced, when little is known about expected uptake and patterns of use. Although research such as the MOSAIC-led CATALYST study[2] and other implementation studies will provide data on product preferences, uptake, and patterns of use, activities such as rollout planning and funding allocation exercises can also inform estimates for PrEP commodity forecasting. It should be noted that national monitoring and evaluation (M&E) systems for PrEP are evolving in many countries; data quality is affected by inconsistencies in reporting, confusion over indicators, and incomplete data.

Existing forecasting processes for HIV prevention commodities could benefit from PrEP-it for the following reasons:
- PrEP-it is designed to mirror PrEP implementation: PrEP-it utilizes user-entered continuation and re-initiation rates, visit schedules, and scale-up trends in estimating commodity needs, which can provide better forecasts associated with targets.
- Over the next several years, PrEP programs will be expanding and changing, including introduction of new HIV prevention products, making it difficult to project future needs based on past trends.
- Estimates of PrEP product need based on targets prior to the use of PrEP-it have often used incorrect assumptions about patterns of PrEP use within populations, calling into question the accuracy of forecast results.

III. PrEP-it Approach to Commodity Forecasting

General organization of the PrEP-it tool
PrEP-it provides an organizational framework that guides users systematically through the steps they will need to enter data and assumptions and configure their target-setting exercise.

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[2]Catalyzing access to new prevention products to stop HIV (CATALYST) is a multi-component study to deliver informed PrEP choice across multiple PrEP products for women in public health service delivery sites supported by the President's Emergency Plan for AIDS Relief/U.S. Agency for International Development (PEPFAR/USAID) in five countries (Kenya, Lesotho, South Africa, Uganda, and Zimbabwe). The study aims to implement an enhanced service delivery package that supports the implementation of informed choice among approved PrEP products in each country.

First, users configure their exercise by:

- Defining the populations for which they are setting targets
- Specifying the PrEP methods that will be included
- Entering data or assumptions about user continuation rates by population and PrEP method
- Defining PrEP visit schedules by population and PrEP method
- Entering historical program data, including data on PrEP initiations and optional data on PrEP reinitiation after discontinuation if those data are available

If users require outputs related to program costs and impact, they configure those modules of the tool as appropriate based on local data and conditions.

Next, users proceed to the target-setting module. In this module, they must specify the size of each population indicated for PrEP. Then they define scale-up curves and assign them to populations and methods based on their plans for the target-setting period.

Finally, users must set targets for the desired coverage of each population indicated for PrEP by population and method. These targets may be constrained by the availability of funds or PrEP products. Alternatively, users may enter the number of initiations for each population that are derived from some other methodology. Once all of these inputs have been completed, the targets results are available, providing users with numbers of initiations for each PrEP population and method, along with estimated impacts, costs, and other relevant indicators.

PrEP-it and commodity forecasting

Once targets are set, the user can proceed to the commodity forecasting module of the tool. This module utilizes all the prior inputs to the tool and provides, for each PrEP method and each month of the target-setting period, the projected number of initiation visits, reinitiation visits, and continuation visits; the number of units of PrEP product required; and the PrEP product cost (see example below). Users can easily export this table into Microsoft Excel and subsequently import any of the projections into a supply-planning tool.

IV. Kenya's Experience Using PrEP-it

Country context for HIV prevention

Kenya's AIDS Strategic Framework (KASF II) 2020/21–2024/25[3] includes HIV prevention among its primary objectives and specifically aims to reduce new HIV infections by 75%. While new HIV infections were reduced by 44% from 2010 to 2019, additional focus is needed to achieve the 75% reduction by 2024/2025. PrEP is included as a primary intervention.

Eligible populations for PrEP are those at substantial risk of acquiring HIV. In Kenya, these populations include men who have sex with men (MSM), female sex workers (FSWs), serodifferent couples, people who inject drugs (PWID), transgender people, vulnerable populations (including fisherfolk, truckers, prisoners, and pregnant and breastfeeding people), and members of the general population who are older than 15.

In Kenya, tenofovir disoproxil fumarate/emtricitabine (TDF/FTC) (300mg/200mg) is recommended for daily and event-driven PrEP.[4] The PrEP ring is registered in Kenya, and CAB PrEP, while not yet approved by the Pharmacy and Poisons Board as of November 2023, has been incorporated into national prevention and treatment guidelines. The PrEP ring is not yet widely available.

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[3]Ministry of Health. Kenya AIDS Strategic Framework II 2020/21-2024/25: sustain gains, bridge gaps and accelerate progress. Nairobi, Kenya: National AIDS Control Council [cited 2023 Oct 21]. Available from: https://nsdcc.go.ke/wp-content/uploads/2021/01/KASFII_Web22.pdf.

[4]Ministry of Health, National AIDS & STI Control Program (NASCOP). Kenya HIV prevention and treatment guidelines, 2022 edition. Nairobi, Kenya: NASCOP; Aug 2022 [cited 2023 Oct 21]. Available from: https://www.differentiatedservicedelivery.org/wp-content/uploads/Kenya-ARV-Guidelines-2022-Final-1.pdf.

Using PrEP-it in Kenya

PrEP-it was introduced in Kenya for the first time in 2019 by Avenir Health and LVCT Health under the USAID-funded OPTIONS consortium. In 2020, Avenir Health and LVCT Health led a national workshop to train National AIDS & STI Control Program (NASCOP) officers and implementing partners on PrEP-it. The online version of PrEP-it was made available in 2021.

In 2021, the Monitoring and Evaluation and Research Committee of NASCOP's PrEP Technical Working Group approved PrEP-it for use in Kenya for PrEP target-setting and commodity forecasting and quantification. In the same year and in 2022, it was used for the quantification exercise on a trial basis. In 2023, PrEP-it was included in NASCOP's national quantification report as one of the tools used in the PrEP target-setting and commodity quantification. By February 2023, a total of 18 trainers (13 national and 5 from counties) and about 134 staff (drawn from NASCOP, counties, and implementing partners) had been trained to use PrEP-it.

Overview of Kenya's quantification processes for HIV prevention

Kenya's annual quantification for HIV prevention products, led by the NASCOP commodity program manager and supported by MOSAIC through LVCT Health, produces a three-year quantification, including a review of the current year. Annual quantifications are usually conducted in March so results can be used to inform annual budgeting cycles that run from July 1 to June 30 of the following year. Donors also use the results in commodity procurement plans. For example, the most recent forecast was used to inform procurement of HIV prevention commodities in Kenya's Global Fund application.

The annual forecasting exercise is conducted over two weeks. In the first week, data are reviewed and discussed with a broader stakeholder group, including program managers and officers from NASCOP, the National Syndemic Disease Control Council, and the Kenya Medical Supplies Agency; county representatives such as county health pharmacists, county AIDS & STI control officers, and county health records and information officers; and M&E officers, as well as representatives from development and implementing partners such as PEPFAR, USAID, the U.S. Centers for Disease Control and Prevention, LVCT Health, and the Clinton Health Access Initiative (CHAI), among others. In the second week a smaller working group drawn from the same team convenes to review the data more closely and finalize the forecasting and quantification report.

A Microsoft Excel-based PrEP commodity forecasting tool developed by CHAI has been used since 2017. Since 2020, NASCOP has led the use of the tool, rather than CHAI, to complete the annual forecasting exercise. In 2022 and 2023, PrEP-it was used alongside the CHAI tool to compare the outcomes of each tool. The oral PrEP commodity forecasts produced using the two tools in 2023 were comparable, even though the tools use very different approaches to target-setting. The fact that the results were similar across the two tools suggests that the tools were harmonized with respect to the most important inputs.

According to Kenya's 2023 Quantification Report,[5] forecasting assumptions are informed by programmatic data from Kenya's Health Information System as well as data from the country's logistics management and

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[5] NASCOP, Ministry of Health, Kenya. *National quantification report for HIV commodities for FY 2023/24 to 2026/27*. Nairobi, Kenya; NASCOP; May 2023.

information system. Survey data such as the Key Population Size Estimate (KPSE II 2020) and results from Integrated HIV Bio-behavioral Surveillance surveys, which estimate HIV prevalence, are used to estimate eligible population size for PrEP priority populations such as FSWs, PWID, MSM, and transgender people. Eligible population sizes for serodifferent couples, fisherfolk, truckers, pregnant and breastfeeding people, prisoners, and general population older than 15 are also estimated using various sources of programmatic, survey, mathematical modeling, and logistics data. In 2023, PrEP client-level data were used in the CHAI tool to estimate that PrEP clients use PrEP for an average of 4.63 months, or 139 days, per year. For the PrEP-it exercise, the tool's default continuation curves for each population were used.

V. Lessons Learned

Benefits of PrEP-it functionality

PrEP-it was described as an easy-to-use and versatile tool. An informant from NASCOP reported he was able to teach himself to use PrEP-it. It can be used for target-setting and quantification, and it also provides estimates of impact (i.e., number of infections averted) based on planned targets. The PrEP program team in Kenya also appreciated that PrEP-it is structured around the PrEP program, with an intuitive understanding of and alignment with their own thinking about the program.

PrEP-it was acknowledged for its ability to estimate both cost and impact alongside the main functions of target-setting and commodity forecasting. Cost and impact estimates (e.g., number of HIV infections averted) are significant outputs that enable an HIV prevention program to develop costed supply plans and advocate for procurement funding. While PrEP-it does forecast and cost commodity needs, additional data about existing stock on hand and/or planned future orders are needed to calculate the estimated amount needed for procurement.

Integrating PrEP-it into commodity forecasting processes

PrEP-it is being adopted and formally institutionalized within existing national quantification processes through a gradual process that applies stakeholder engagement and sensitization approaches. LVCT Health has been a resource partner to NASCOP in using the tool since 2019, and this continued support has facilitated adoption of the tool. The online version released in 2021 further facilitated use of the tool at subnational levels and led to intentional capacity-strengthening efforts to establish a cadre of PrEP-it trainers within NASCOP and at the county level. Stakeholder engagement in the PrEP-it target-setting process has been critical to ensure that people understand how the targets have been developed.

Potential for use at subnational levels

The functionality of PrEP-it makes it easy for a user to aggregate and/or disaggregate data at different levels of the health system (i.e., national and subnational) and/or to complete commodity forecasts for targeted geographic areas. This means that subnational entities or specific geographic areas, such as counties in Kenya where staff from all 47 counties have been trained on PrEP-it, could use the tool themselves to set targets and estimate commodity needs, which could then be aggregated to the national level. Geographic disaggregation of targets set at the national level, compared with targets set at the county level, allows users of PrEP-it to review and verify data for particular geographic areas. To date, Kenya's national forecasting exercises have set targets at the national level and engaged counties in completing the annual forecasting

exercises, but if desired, a tool such as PrEP-it could be used to develop bottom-up targets and commodity forecasts at the county level that could then be aggregated to the national level.

Future use of PrEP-it in Kenya

Kenya will continue to work toward institutionalizing use of PrEP-it. This will require maintaining the visibility of the tool, because PrEP-it can easily be used to quantify new PrEP products alongside oral PrEP. Existing forecasting tools are not currently configured to include these products. Refresher trainings are needed to maintain skills in using the tools. In Kenya, this has been done through virtual trainings, but these refresher trainings are not routinely funded.

The Quantification Analytics Tool (QAT)[6] is being introduced in Kenya and will likely be used in the next commodity forecasting cycle. Given that PrEP-it has already been used to set national PrEP targets, PrEP-it forecasting outputs can easily be linked with QAT's supply planning module to develop a procurement plan. Funded by USAID, QAT is an online tool that can be used to actively manage procurements funded by different sources (e.g., government or donor) as well as monitor stock status in the near and long term to inform commodity needs and establish procurement plans. Month-by-month estimates of commodity needs (e.g., numbers of injections or bottles of PrEP pills) produced by PrEP-it can be copied and pasted into QAT's supply planning tool. The quantity to order would be driven by inventory control levels set within QAT. These levels define how much more stock to order, based on what is available and already on order, to maintain sufficient stocks in country. QAT also helps with determining both the quantity and timing of the orders, e.g., order X units to arrive in July to maintain sufficient stock levels. QAT has a forecasting module and includes templates for standardizing forecasts for programs that may be useful in validating the commodity need estimates produced by PrEP-it or other HIV prevention commodity forecasting tools.

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[6] https://www.ghsupplychain.org/quantificationanalyticstool