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PREP ROLL OUT IN A NATIONAL PUBLIC SECTOR PROGRAM: THE KENYAN CASE STUDY

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Abstract

Background—While advances have been made in HIV prevention and treatment, new HIV infections continue to occur. The introduction of PrEP as an additional HIV prevention option for those at high risk of HIV may change the landscape of the HIV epidemic, especially in sub-Saharan Africa, which bears the greatest HIV burden.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

Approach—This paper details Kenya's experience in PrEP roll out as a national public sector program. We describe the process of national roll out of PrEP guidance, partnerships, challenges, lessons learnt and progress related to national scale-up of PrEP in Kenya, as of 2018. National roll out of PrEP was strongly lead by the government and work was executed through a multidisciplinary, multi-organization dedicated team. This required reviewing available evidence, providing guidance to health providers, integration into existing logistic and health information systems, robust communication and community engagement. Mapping of the response showed that subnational levels had existing infrastructure but required targeted resources to catalyze PrEP provision. Roll out scenarios were developed and adopted, with prioritization of 19 counties focusing on high incidence area and high potential PrEP users to maximize impact and minimize costs.

Outcomes/Impact—PrEP is now offered in over 900 facilities countrywide. There are currently over 14,000 PrEP users one year after launching PrEP.

BACKGROUND

The Joint United Nations Programme on HIV/AIDS has called for a 75% reduction in new HIV infections by 2020 and a fast track strategy to end the global epidemic by 2030[1]. In Kenya, the Kenya AIDS Strategic Framework (KASF) similarly aims at reducing HIV infections by 75% by 2020, and the Kenya HIV Prevention Revolution Roadmap defines a multipronged approach aimed at reducing new infections to zero by 2030, including geographically and population-targeted combination prevention strategies with focus on efficiencies, leveraging opportunities, and advocacy[2,3]. In 2015, there were 1.6 million Kenyans living with HIV of whom 78,000 were newly infected[4]. The largest number of new infections occurred among young people aged 15–24 years and high-risk populations including sex workers, men having sex with men, and injecting drug users; new HIV infections are not evenly distributed within the country and have significant geographic differences, overall and within subpopulations.

Pre-exposure prophylaxis (PrEP), in combination with other HIV prevention and treatment interventions, is proven to reduce new HIV infections by over 90%[5–8], with data from Kenya contributing substantially to PrEP's regulatory approval and normative guidance. Over the past two decades, Kenya has successfully implemented highly effective HIV prevention interventions at scale, including immediate antiretroviral therapy to all who are HIV infected, voluntary medical male circumcision, prevention of mother to child transmission services, and large-scale HIV testing programs. Mathematical modeling of Kenyan data has provided evidence that combinations of highly effective interventions, including PrEP, targeted to specific populations and geographical settings, could maximize effectiveness of the national prevention response[3,9]. It is with this history in mind that Kenya decided to make PrEP a part of its national program, adding to the arsenal of combination HIV prevention interventions. Here, we describe the process of the national PrEP roll out: guidance, partnerships, challenges, lessons learnt and progress related to national scale-up of PrEP in Kenya, as of 2018.

APPROACH

Development of the policy framework

The Kenya HIV Prevention Revolution Roadmap, developed in 2013, set the direction for introduction of PrEP in Kenya by proposing high-impact, evidence-based HIV prevention, including PrEP, targeted at county level with a focus on prevention for different at-risk populations. By refocusing and prioritizing key prevention interventions, including PrEP, mathematical modeling conducted in support of the Roadmap suggested Kenya could avert more the 1 million new infections by 2030[3].

In December 2015, the Kenya Pharmacy and Poisons Board (PPB), the national drug regulatory authority, approved tenofovir-disoproxil-fumarate combined with emtricitabine (TDF/FTC) for use in HIV prevention as oral PrEP. In 2016, the Kenya Ministry of Health through the National AIDS and STI Control Programme (NASCOP) led a participatory process reviewing scientific evidence generated from clinical trials and demonstration projects to inform development of national guidelines on use of antiretroviral (ARV) drugs for HIV treatment and prevention[10]. That document, in addition to recommending antiretroviral therapy at any CD4 count and other updates to HIV testing and treatment, recommended offering PrEP as a TDF-containing daily pill to HIV negative individuals at substantial ongoing risk of HIV infection (Available at https://www.nascop.or.ke/?page_id=2744).

Establishment of coordination structures

National Technical Working Group—Following inclusion of PrEP in the national ARV guidelines, the Ministry of Health set up a PrEP Technical Working Group (TWG) in October 2016, chaired by NASCOP. The TWG comprises representatives from development and implementing partners, county governments, civil society, and persons living with HIV[11]. The mandate of the TWG was to provide strategic direction and oversight for the implementation of PrEP in Kenya in line with the health sector policies and the KASF. To deliver on this mandate, six thematic subcommittees were formed: 1) Operations and Service Delivery; 2) Monitoring and Evaluation; 3) Commodity Security; 4) Communications and Advocacy; 5) Research and Impact Evaluation, and 6) Resource Mobilization and Financing. This team developed a national scale up plan with prioritized targets and operational mechanisms to guide implementation by all PrEP stakeholders. It was informed by lessons learnt from the Partners PrEP Study clinical trial and demonstration projects including LVCT Health-led Introducing PrEP into Combination Prevention (IPCP) and Partners Demonstration Project, confirming feasibility of delivering PrEP in non-research settings[12–23]. This culminated in the development and official launch of the Kenya PrEP Implementation Framework and the national PrEP program in May 2017[11]. The timeline is summarized in Figure 1.

Operations and Service Delivery Sub-Committee

Mandate: This sub-committee was mandated to operationalize the PrEP guidelines. The priorities included defining service delivery approaches and models, outlining client

management criteria (identification, initiation of PrEP, follow up and monitoring), and developing a capacity-building plan for service providers.

Action taken: To support harmonized implementation of PrEP at health facilities, the subcommittee developed a user-friendly toolkit for use by service providers (Available at https://www.nascop.or.ke/?page_id=2744). This toolkit provided the eligibility criteria for PrEP, the step-by-step procedures for risk assessment, PrEP initiation, follow-up and monitoring, and quality improvement, as well as minimum requirements for a service point to provide PrEP. To reduce stigma, PrEP was recommended for all HIV negative individuals at ongoing substantial risk of HIV and was not limited to specific populations. PrEP was offered as part of a combination and was then integrated into HIV testing, screening and treatment of sexually transmitted infections, prevention of mother-to-child transmission (PMTCT) and voluntary medical male circumcision services.

Kenya adapted both a community- and facility-based service delivery models for PrEP delivery. PrEP is initiated by a qualified and skilled health care provider and could be offered at HIV testing centers, ART clinics, outpatient or inpatient departments, drop-in centers (DICE) for key populations, maternal and child health clinics, family planning clinics, and youth friendly centers among others[10]. At the community level, support groups, peer educators, community health volunteers, prevention centers, pharmacies, stand-alone DICEs play a vital role in demand creation and linkage with health facilities and other venues where PrEP is provided.

A national case-based training curriculum was developed, relying heavily on existing materials used in demonstration and delivery projects for PrEP (IPCP; Determined, Resilient, Empowered, AIDS-free, Mentored and Safe [DREAMS]; and the Partners Scale-Up Project). To ensure a large pool of health providers providing PrEP are trained, a cascade approach was adopted, where national and county level Trainer of Trainers (TOT) were trained who in turn trained health workers and peer educators. The training is interactive and case based with a brief introductory presentation followed by facility-based case discussions, case studies, role-plays, and practical exercises. It consists of four units: 1) clinical case management of PrEP; 2) drug resistance testing for PrEP seroconverters (to support national survey on PrEP); 3) commodity management; and 4) monitoring and evaluation of PrEP services. In addition, a PrEP module was also incorporated in the existing training curricula related to HIV testing services, PMTCT, key populations, and ART delivery, to provide comprehensive reach to HIV-related health workers in all settings and provision of a combination package.

Monitoring and Evaluation (M&E) Sub-Committee

Mandate: The priority of this subcommittee was to develop the M&E plan for PrEP roll out which outlines the indicators (process, outcome, and impact), reporting requirements, data collection tools, and reporting mechanisms. Additionally, details of how PrEP data could be analyzed and utilized to provide feedback for policy, planning, quality improvement target setting, and impact evaluation at facility, county, and national level was provided. The sub-

committee was also tasked with development of the necessary components required to develop a PrEP cascade.

Acton taken: PrEP M&E presented unique challenges, key of which was the ever-changing denominator as PrEP use depends on period of risk with individuals stopping and restarting PrEP dependent on risk. Use of electronic medical records systems or a mobile platform were proposed as one action to attempt to longitudinally track this denominator.

A set of data collection tools were developed (Supplemental File 1). These included: the Risk Assessment Screening Tool (RAST), a simple checklist that serves as screening tool at HIV testing and other primary service delivery points to identify individuals potentially eligible for PrEP; a clinical encounter form to document the clinical data for PrEP initiation and follow-up; longitudinal PrEP register that allows follow-up of clients for a period of up to 4.5years; a daily activity register that helps in monthly aggregation of data; and a monthly health facility reporting tool which is uploaded into the MOH District Health Information System (DHIS 2) platform[11]. An M&E framework that outlines the targets and indicators for reporting was also developed.[11].

The key indicators selected for routine tracking include the 1)number assessed for HIV risk, 2)number eligible for PrEP, 3)number initiating PrEP, 4)number continuing PrEP, 5)number restarting PrEP, 6)number currently on PrEP, 7) number tested Positive while on PrEP, 8)number diagnosed with STI, and 9)discontinued PrEP.

Commodity Security Sub-Committee

Mandate: This sub-committee was tasked with defining the PrEP commodities supply chain that is aligned to the existing national ARV commodities quantification, procurement, and distribution system; quantifying the national commodity need for PrEP; and negotiating for affordable generic formulations.

Action taken: PrEP delivery was integrated into the existing and well-functioning system.

Product negotiation: To encourage local registration of generic products beyond the branded product Truvada®, several consultations with manufacturers of TDF/FTC were held where information regarding the PrEP demand forecast was shared. As a result, Kenya is able to procure more affordable formulations.

Forecasting and Quantification: As PrEP delivery was new, determining quantities to be procured proved challenging. Despite this, NASCOP in collaboration with stakeholders estimated the PrEP needs based on assumptions on eligible populations and a six-month use per client. These were included in the annual national quantification exercise for HIV & AIDS commodities and documented in the National Quantification Report for HIV management commodities (2016/17 to 2019/2020). KEMSA was tasked with role of procurement, warehousing and distribution of all national procurements and to receive and distribute all donations from multiple partners through the national system.

Procurement and distribution: NASCOP through the Kenya Medical Supplies Authority (KEMSA) distributes ARVs to over 3000 health facilities nationally using a hub and spoke system. Four hundred and sixty sites receive ARV medicines directly from KEMSA and in turn distribute to more than 2500 satellite health facilities. Facilities providing PrEP if not already existing ART sites were linked to existing ARV ordering sites. Existing ARV Logistics Management Information System recording and reporting tools were revised to include ARVs for PrEP. Pharmaceutical staff and health providers were trained on updated tools resulting in monthly PrEP reports to the national level to track consumption and national and facility level stocks of ARVs for PrEP.

PrEP became available beginning October 2016 through donations from DREAMS (a PEPFAR supported project) and Jilinde (a Bill and Melinda Gates Foundation funded project). Subsequent stocks were procured by the Ministry of Health through KEMSA. Other related commodities such as condoms, lubricants, and HIV testing kits are accessed within existing mechanisms. Monthly monitoring is conducted to keep track of consumption and stocks available to avoid stock outs and advice timing of procurement.

Communication and Advocacy Sub-Committee

Mandate: This sub-committee was mandated to develop a communications and advocacy plan aimed at increasing stakeholder awareness and knowledge of PrEP and promote it as part of combination prevention with a goal of increase acceptability and PrEP uptake. The committee consisted communication experts and individuals from implementing and development partners and the Ministry of Health (NASCOP and National AIDS Control Council [NACC]).

Action taken: The committee carried out a SWOT analysis, mapped stakeholders and the target audiences and assessed their influence and perceptions of PrEP. This helped prioritize communication targets and the type of messages required. A communications plan was developed recommending roll-out in three main phases. Phase 1 targeted the general population, religious leaders, community leaders, political leaders, policy makers, media and professional bodies. Phase 2 targeted health care workers, implementing partners, researchers, key population networks. Phase 3 would eventually target current and potential users. Kenya had made a strategic decision in not making PrEP specific to any population to promote uptake to all and reduce stigma that may be associated with PrEP rollout to specific populations. The immediate nationwide communication campaign was thus targeted at allowing the general population to be aware of PrEP, self-assess for risk and seek the service. Advocacy and engagement meetings were held with all county health departments, HIV serodiscordant couples, youth, key populations, religious leaders and private sector to provide information on PrEP as well as receive feedback on developed key messages.

A PrEP communications brand going by the name ***"Jipende JiPrEP"*** meaning "love yourself, PrEP yourself" was developed to improve visibility, awareness and recall. This communications campaign was rolled out targeting the general population through community radio and digital platforms including YouTube, Facebook, Twitter, and bloggers. These were a great avenue to provide messages and educate the public especially young

people. Several tweets can be found on https://twitter.com/nimejiprep?lang=en. Awareness tools targeting various audiences were developed and disseminated including posters, frequently asked questions, radio and TV spots, referral directory and visibility materials such as banners and t-shirts (Figure 2).

Media engagement was key. Over 30 journalists were trained resulting in extensive national and international coverage of PrEP both before and after the launch of PrEP. Multiple print articles and news reports were carried in local dailies, mentions and reports with PrEP being covered in over 30 radio stations and three TV stations, timed to coincide with the national launch of PrEP in May 2017. Overall, more than 11,922,211 people were reached through radio and media advertising; 351,123 people reached through social media; nine education and communication packets materials developed; more than 9256 female sex workers (FSW) and 10,000 men who have sex with men (MSM) were estimated to have been reached with information within the first four months following program launch.

Research and Implementation Science Sub-Committee

Mandate: This sub-committee was tasked with providing evidence to inform PrEP scale up nationally. This committee consisted of members from the Ministry of Health, donor community, researchers, implementing partners, and academia who worked in collaboration with the other PrEP TWG committees and target populations to i) conduct a situation analysis of PrEP research, implementation and associated challenges in Kenya and ii) develop a research framework to continually inform PrEP implementation in Kenya.

PrEP rollout in Kenya was implemented in the context of global randomized clinical trials that provided evidence on the efficacy of PrEP for HIV serodiscordant couples, MSM, persons who inject drugs (PWID) and heterosexual individuals[5–8,24,25]. The Partners Scale Up, LVCT Health-led IPCP, and the Jilinde scale up project were designed to continue generating evidence on PrEP uptake by serodiscordant couples, MSM, FSW, and young women to inform the national program.

Action taken: At baseline, NASCOP spearheaded a countrywide mapping of partners implementing PrEP projects/studies and collected data from research ethics committees countrywide, NACC, student theses and conference presentations. Based on these data, the committee iteratively outlined and prioritized PrEP implementation science research questions that were also aligned to the KASF and the Kenya HIV and AIDS Research Agenda[2,26]. High priority was given to questions crucial for initial PrEP scale up and for which funding was available. This included questions on health providers PrEP knowledge, attitudes and practice; who to target; most effective demand creation approaches; acceptability by end users and providers; appropriate packaging of PrEP according to end users; HIV risk characterization among users; appropriate dispensing models; description of uptake by different populations; description of coverage required to avert new infections per risk group; description of adherence by those enrolled; patterns of use among those who take up PrEP; documentation of drug resistance among seroconverters; population impact of oral PrEP ; costing and feasibility of integration of PrEP with existing service delivery models. Medium and low priority questions were also identified. These were integrated into the PrEP

research agenda that also defined the rationale, data sources, proposed methodologies, timelines, and funding sources[11]. Proposed approaches included mathematical modelling; costing studies; marketing surveys; routine data collection for pharmacovigilance and cohort studies; operations research; embedding priority PrEP indicators into national surveys; ecological studies; and randomized controlled studies. The committee also proposed electronic routine PrEP data collection where possible and the establishment of sentinel sites for the initial phase of data collection. To collect national level data on PrEP uptake, PrEP assessment was included in the Kenya Population-based HIV Impact Assessment (KENPHIA 2018). In addition, a national HIV drug resistance survey to test for resistance among seroconverters is ongoing. Costing and other impact modelling are also ongoing.

Resource Mobilization and Financing Sub-Committee

Mandate and priorities: This sub-committee was tasked to estimate the cost of delivering PrEP and the resources needed to provide a comprehensive package of PrEP services in addition to identifying innovative strategies of mobilizing additional resources for scale up.

Action taken: Using data from costing studies including the IPCP, the estimated resources needed over five years was about 300 million USD with commodities contributing 85% of this budget. The estimated cost of delivering PrEP per person per year is USD 300–600 depending on the geographical location and population targeted for a target of 100,000[27]. This target was calculated using the national HIV incidence, the estimated population sizes for serodiscordant couples, key populations and estimated risk in the general population including adolescents. We then adjusted for a slow rise in PrEP uptake per year. Future targeting will incorporate data on proportion of partners in serodiscordant relationships who are virally suppressed. Further data is being sought on the number of undiagnosed HIV positive persons with negative partners and risk profiles in the general population to support target setting.

Important funding gaps were identified which formed the basis of resource mobilization through PEPFAR, Global Fund, and other donors and plans. Kenya included PrEP as a priority in the national and county budgets and plans. NASCOP made applications to the Global Fund and negotiated inclusion of PrEP in the PEPFAR Country Operations Plan 2017, both of which were successful. In addition, continued advocacy requests were made to increase government allocation at both county and national level.

Planning for implementation

Field Situational Analysis—NASCOP in collaboration with partners conducted a situational analysis to identify gaps and opportunities for PrEP implementation across a five-factor value chain: planning and budgeting, supply chain management, delivery platforms, individual uptake, and effective use and monitoring. Mapping of PrEP implementing projects, partners, objectives, targets, funding sources, target populations, geographical coverage, indicators and tools was conducted. The mapping highlighted underserved regions and populations for consideration in PrEP rollout. Given the subnational delivery of health services in 47 counties, a SWOT analysis and readiness assessment conducted at national and subnational levels identified the gaps, opportunities and areas needing immediate action

and investment for successful PrEP uptake. It revealed that while all counties have AIDS strategic plans in place, less than 40% had included PrEP as a HIV prevention strategy. However, given the existence of a mature HIV care and treatment program in Kenya, there was ready infrastructure at both facility and community level for introduction of PrEP. This includes communication and community engagement structures, presence of national reporting tools for commodities and routine commodity quantification for ARVs and HIV test kits. Limited HIV funding at county level, availability of laboratory testing of creatinine clearance and surveillance of HIV drug resistance among seroconverters were common challenges for all counties. The assessments provided a baseline to measure system performance and improvement following roll out of PrEP.

To target PrEP delivery, the OPTIONS consortium under the leadership of NASCOP conducted a PrEP rollout scenario analysis with the goal of informing population and geographical targeting of PrEP (Figure 3). Key factors considered in these rollout scenarios included determining which counties and populations in Kenya would benefit most from PrEP; how these populations differed by county; what delivery approach (e.g., generalized for full population or targeted to key populations) were most appropriate for each county; and what were the cost and impact implications of different scenarios for national PrEP rollout.

In brief, this analysis revealed a tradeoff between impact and cost (greater access would stem more new infections but would also cost more). A focus on key populations (i.e., MSM, FSW, and PWID) but also on serodiscordant couples and adolescent girls and young women, and high incidence/burden counties would be the most cost-effective approach of scale-up[11,28–30]. These scenarios helped in producing PrEP targets that considered the HIV incidence rate, serodiscordance rates, and population size estimates of key populations, serodiscordant couples, and young people.

Challenges—Despite the successful scale up, following operational challenges remained. First, measurement of adherence and retention are a challenge. Structural issues such as long waiting time, frequent visits, stigma and gender based violence affect HIV prevention services. Innovative individualized and client centered approaches may be required to address these challenges. Second, the multiplicity of data reporting tools by implementers created delays in national harmonization of data, costing assumptions and integration of PrEP key indicators into national MIS. Third, the lag in well-developed M&E and surveillance mechanisms for HIV drug resistance and related complications was a missed opportunity for an integrated M&E and surveillance alongside the scale up. Fourth, the lack of domestic financing posed a key challenge in sustainability of the PrEP program and hence resource mobilization across all 47 counties with different level of incidence and epidemic required significant negotiations and a differentiated approach.

The Role of Partnerships—Partnership was key in the success of PrEP roll out. The government, through NASCOP, collaborated with partners, county governments, PrEP funded projects, communities of people living with HIV and potential PrEP users to ensure coordination and inclusion in planning. The government provided overall coordination while partners provided technical and financial support as well as experience from pre-existing

projects. The active involvement and leadership by county-level health management expedited integration of PrEP into routine service provision. The collaboration between implementers allowed harmonized implementation of guidelines, training and service provision. Key stakeholders supported the launch of PrEP and the development of training materials and operational materials to ensure delivery of PrEP was successful. Partnering with PrEP users and communities created strong advocacy and ownership that was key to increasing awareness on PrEP. The World Health Organization, PEPFAR and UNAIDS provided normative guidance to this process in addition to technical and financial support.

Operational lessons learnt—Several important lessons have been learnt to date. First, strategic trainings of service providers focusing on Knowledge Attitudes and Perceptions (KAP) on PrEP, efficient integration within existing processes, and quality assurance were important to successful initial scale up of PrEP in Kenya. Second, demand creation and social marketing strategies involving different target communities in the design, implementation, and championing of PrEP is key to myth and misconception management. A PrEP brochure with frequently asked questions on PrEP was developed, key media personnel were trained, and a consistent social media management was done. Third, partner testing and community-led based PrEP programs can be efficient in reaching those at high risk of HIV. Fourth, integration of PrEP into routine ART commodity management system and PrEP indicators (biomedical, behavioral and structural determinants) into national information systems (such as KENPHIA) are key into building a long-term and strategic public health approach to ARV based prevention tools into the comprehensive HIV program. Fifth, a coordinated and nationally-led PrEP program provides more synergy and national ownership. Focus should be on engaging the Ministry of Health right from the pilot projects and in harmonizing assumptions (e.g. Costing and cost-effectiveness), surveillance, and M&E. Finally, M & E should be integral part of planning with national program data on retention to develop a PrEP cascade.

PROGRESS/OUTCOMES/IMPACT

Since the launch in May 2017, PrEP is offered in more than 900 facilities nationally with an estimated 14,000 users on PrEP (52% serodiscordant relations, 21% Key populations, 9% adolescents and 17% general population) as of March 2018. It is offered in diverse settings including HIV treatment sites, testing/prevention centers, STI clinics, drop in centers for key populations, and safe spaces for adolescents. To strengthen human resource for PrEP delivery, over 60 Master trainers, 240 country trainers and 3000 service providers have been trained countrywide. Implementation research has been incorporated into routine programming to collect critical information that can inform programming. Table 1 summarizes selected projects that are delivering PrEP in public health facilities as per national guidelines, provide feedback to the national program, and have been catalytic to PrEP delivery in Kenya. Further data on outcomes and impact will be provided through the Kenya Population and Impact Assessment 2018/19.

CONCLUSION/ RECOMMENDATIONS

Roll out of PrEP in Kenya was catalyzed by the strong government leadership; partnerships between government, partners, communities, and potential PrEP users; granular knowledge of the HIV epidemic and response, robust social marketing and communication campaign; integration of PrEP into existing logistics and health information systems; incorporation of implementation research into the routine program and resource mobilization to sustain PrEP programming. While PrEP was successfully launched in Kenya but substantial work remains to sustain the gains made. From the challenges encountered and lessons learnt, the country is now focusing on collecting evidence to improve program targeting as well as innovative approaches to increase PrEP uptake, improve adherence to PrEP and assessing for the impact of introducing PrEP on the HIV epidemic.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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References

1. UNAIDS. 90–90–90. An ambitious treatment target to help end the AIDS epidemic. 2014.
2. Ministry of Health. Kenya AIDS Strategic Framework 2014/2015 – 2018/2019. Nairobi, Kenya.
3. Ministry of Health. Kenya HIV Prevention Revolution Roadmap. Nairobi, Kenya: Ministry of Health;2013.
4. Ministry of Health. Kenya HIV Estimates. Nairobi, Kenya 2015.
5. Grant RM, Lama JR, Anderson PL, et al. Preexposure chemoprophylaxis for HIV prevention in men who have sex with men. N Engl J Med. 2010;363(27):2587–2599. [PubMed: 21091279]
6. Thigpen MC, Kebaabetswe PM, Paxton LA, et al. Antiretroviral preexposure prophylaxis for heterosexual HIV transmission in Botswana. N Engl J Med. 2012;367(5):423–434. [PubMed: 22784038]
7. Baeten JM, Donnell D, Ndase P, et al. Antiretroviral prophylaxis for HIV prevention in heterosexual men and women. N Engl J Med. 2012;367(5):399–410. [PubMed: 22784037]
8. Choopanya K, Martin M, Suntharasamai P, et al. Antiretroviral prophylaxis for HIV infection in injecting drug users in Bangkok, Thailand (the Bangkok Tenofovir Study): a randomised, double-blind, placebo-controlled phase 3 trial. Lancet (London, England). 2013;381(9883):2083–2090.
9. Anderson SJ, Cherutich P, Kilonzo N, et al. Maximising the effect of combination HIV prevention through prioritisation of the people and places in greatest need: a modelling study. Lancet (London, England). 2014;384(9939):249–256.
10. Ministry of Health. Guidelines on Use of Antiretroviral Drugs for Treating and Preventing HIV Infection in Kenya 2016. . Nairoi, Kenya: National AIDS & STI Control Programme (NASCOP), Ministry of Health;7 2016.
11. National AIDS & STI Control Programme (NASCOP) MoH. Framework for the Implementation of Pre-exposure Prophylaxis of HIV in Kenya. Nairobi, Kenya: NASCOP;2017.
12. Ying R, Sharma M, Heffron R, et al. Cost-effectiveness of pre-exposure prophylaxis targeted to high-risk serodiscordant couples as a bridge to sustained ART use in Kampala, Uganda. Journal of the International AIDS Society 2015;18(4 Suppl 3):20013. [PubMed: 26198348]

13. Ngure K, Heffron R, Curran K, et al. I Knew I Would Be Safer. Experiences of Kenyan HIV Serodiscordant Couples Soon After Pre-Exposure Prophylaxis (PrEP) Initiation. AIDS Patient Care STDS. 2016;30(2):78–83. [PubMed: 26836236]
14. Baeten JM, Heffron R, Kidoguchi L, et al. Integrated Delivery of Antiretroviral Treatment and Pre-exposure Prophylaxis to HIV-1-Serodiscordant Couples: A Prospective Implementation Study in Kenya and Uganda. PLoS Med. 2016;13(8):e1002099. [PubMed: 27552090]
15. Irungu EM, Heffron R, Mugo N, et al. Use of a risk scoring tool to identify higher-risk HIV-1 serodiscordant couples for an antiretroviral-based HIV-1 prevention intervention. BMC Infect Dis. 2016;16(1):571. [PubMed: 27751179]
16. Patel RC, Stanford-Moore G, Odoyo J, et al. "Since both of us are using antiretrovirals, we have been supportive to each other": facilitators and barriers of pre-exposure prophylaxis use in heterosexual HIV serodiscordant couples in Kisumu, Kenya. Journal of the International AIDS Society. 2016;19(1):21134. [PubMed: 27964776]
17. Ngure K, Kimemia G, Dew K, et al. Delivering safer conception services to HIV serodiscordant couples in Kenya: perspectives from healthcare providers and HIV serodiscordant couples. Journal of the International AIDS Society. 2017;20(Suppl 1):21309. [PubMed: 28361508]
18. Haberer JE, Kidoguchi L, Heffron R, et al. Alignment of adherence and risk for HIV acquisition in a demonstration project of pre-exposure prophylaxis among HIV serodiscordant couples in Kenya and Uganda: a prospective analysis of prevention-effective adherence. Journal of the International AIDS Society. 2017;20(1):21842. [PubMed: 28741331]
19. Mugwanya KK, Baeten JM, Wyatt C, et al. Brief Report: Frequency of Monitoring Kidney Function in HIV-Uninfected Persons Using Daily Oral Tenofovir Disoproxil Fumarate Pre-exposure Prophylaxis. J Acquir Immune Defic Syndr. 2018;77(2):206–211. [PubMed: 29135656]
20. Heffron R, Ngure K, Odoyo J, et al. Pre-exposure prophylaxis for HIV-negative persons with partners living with HIV: uptake, use, and effectiveness in an open-label demonstration project in East Africa. Gates open research. 2017;1:3. [PubMed: 29355231]
21. Hancuch K, Baeten J, Ngure K, et al. Safer conception among HIV-1 serodiscordant couples in East Africa: understanding knowledge, attitudes, and experiences. AIDS care. 2018:1–9.
22. Karuga RN, Njenga SN, Mulwa R, et al. "How I Wish This Thing Was Initiated 100 Years Ago!" Willingness to Take Daily Oral Pre-Exposure Prophylaxis among Men Who Have Sex with Men in Kenya. PLoS One. 2016;11(4):e0151716. [PubMed: 27073896]
23. OPTIONS consortium. Early Lessons from Kenya's Oral PrEP Rollout Planning. https://www.prepwatch.org/early-lessons-from-kenya-rollout/. Accessed 1st April, 2018.
24. Gafos M, Brodnicki E, Desai M, et al. Acceptability of an open-label wait-listed trial design: Experiences from the PROUD PrEP study. PLoS One. 2017;12(4):e0175596. [PubMed: 28426834]
25. Sagaon-Teyssier L, Suzan-Monti M, Demoulin B, et al. Uptake of PrEP and condom and sexual risk behavior among MSM during the ANRS IPERGAY trial. AIDS care. 2016;28 Suppl 1:48–55. [PubMed: 26883400]
26. Ministry of Health. Kenya HIV and AIDS Research Agenda 2014/15–2018/19, . Nairobi, Kenya: National AIDS Control Council (NACC).
27. Phanitsiri MK S, Nnakabonge I, Wachihi C, Tagar E, Kimani P, Kyongo J, Mukoma W. The Unit Cost of Delivering Oral PrEP as Part of a Combination HIV Prevention Package: Results from the IPCP-Kenya Demonstration Project. Nairobi,Kenya: Clinton Health Access Initiative , LVCT Health; 2017.
28. Bhavaraju KM N, Kiragu M, Jeckonia P, Mukoma W, Kripke K, Bershteyn A, Larson M, Gardiner E, Masyuko S. Who, where, and how? Developing scenarios for the rollout of oral PrEP in Kenya. 2017.
29. OPTIONS consortium. Providing Oral PrEP Video Series: Lessons from the Field. https://www.prepwatch.org/providing-oral-prep/. Accessed 1st April, 2018.
30. OPTIONS consortium. Early Insights from PrEP Demo Projects: Lessons from the frontlines of PrEP demonstration projects and implementation in Kenya, South Africa and Zimbabwe. https://www.prepwatch.org/early-insights-prep-demo/. Accessed 1st April, 2018.

Significance/Innovation

Kenya becomes the first African country to roll out PrEP as a national program, in the public sector. Our case study will provide guidance for low- and middle-income countries planning the roll out of PrEP in both generalized and concentrated epidemics.

Figure 1.

Timeline for pre-exposure prophylaxis (PrEP) implementation in Kenya. ART, antiretroviral treatment; PrEP, pre-exposure prophylaxis; TWG, technical working group; NASCOP, National AIDS & STI Control Programme; TDF, Tenofovir disoproxil fumarate

Figure 2.
Sample messaging posters for pre-exposure prophylaxis (PrEP).

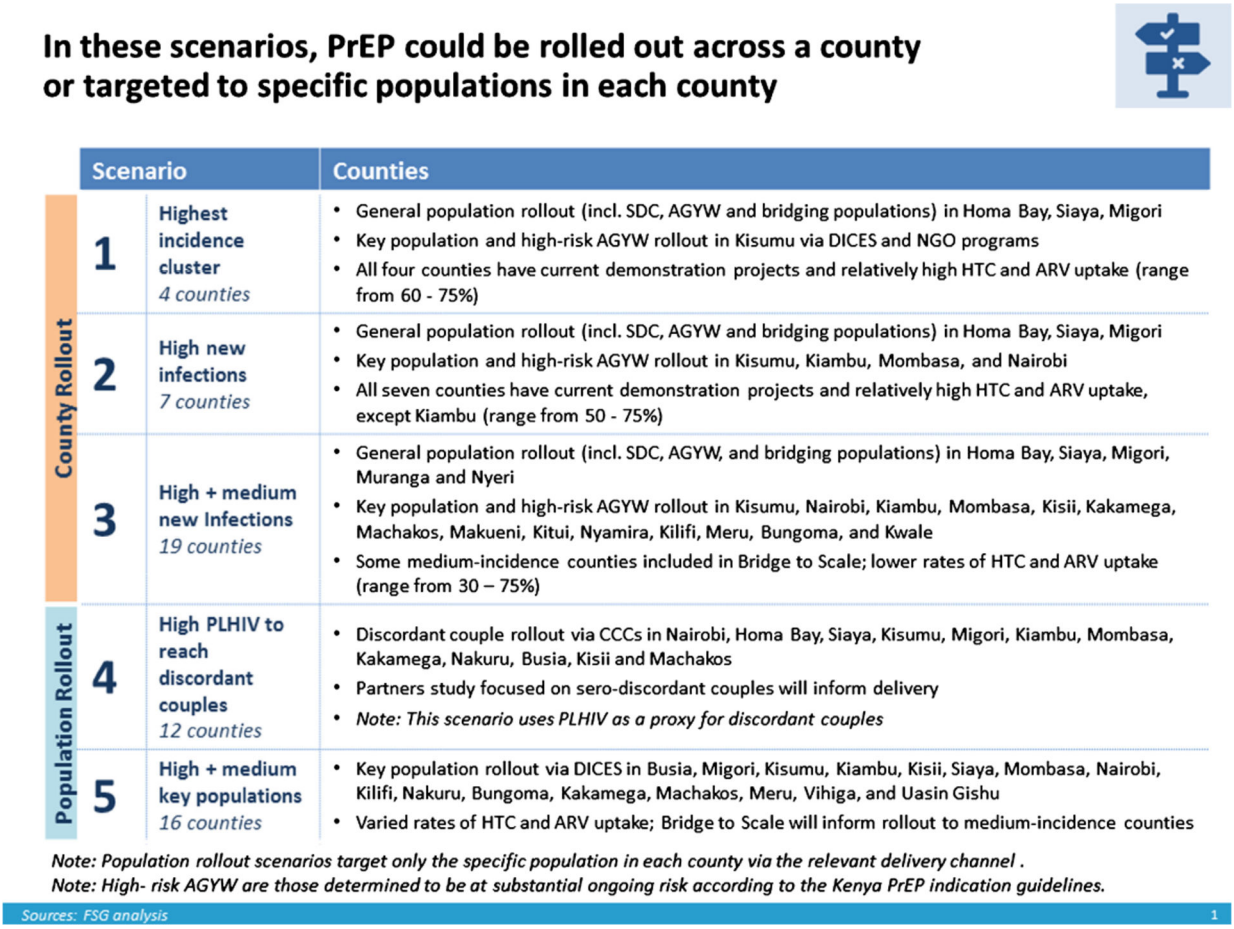

Figure 3.

Rollout scenarios considered for population and geographic targeting of oral pre-exposure prophylaxis (PrEP) scale up in Kenya. SDC, serodiscordant couples; AGYW, adolescent girls and young women; DICEs, drop-in centres; NGO, non-governmental organisation; HTC, HIV testing and counselling; ARV, antiretroviral; CCC, comprehensive care clinic; PLHIV, people living with HIV.

Table 1.

Summary of selected pre-exposure prophylaxis programs and delivery approaches in Kenya PrEP, pre-exposure prophylaxis; ART, antiretroviral treatment

	Population targeted	Delivery model
Partners Scale Up Project	HIV serodiscordant couples	PrEP as a bridge to ART in HIV care centres. Delivers PrEP in HIV clinics
Jilinde – Bridge to Scale	Female sex workers (FSW), men who have sex with men (MSM) and adolescent girls and young women (AGYW)	Scale up and research implementation project. Delivers PrEP in drop-in centres
Introducing PrEP into Combination Prevention (IPCP)	Young women at high HIV risk, female sex workers (FSWs) and men who have sex with men (MSM)	Demonstration project
Determined, resilient, empowered, AIDS-free mentored and safe (DREAMS)	Adolescent girls and young women aged 10–24 years	Integrated model offering four broad components targeted at empowering girls and young women, strengthening families, mobilising communities for change and reduction of risk among sex partners. Uniquely delivers PrEP in safe spaces located in communities