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REPUBLIC OF KENYA
NATIONAL SYNDEMIC DISEASES CONTROL COUNCIL

University of Manitoba

HIV PREVENTION PROGRAMME SCIENCE WORKSHOP REPORT

MAANZONI LODGE, MACHAKOS | 27–29 JANUARY 2025

National Syndemic Diseases Control Council (NSDCC), Partners for Health and Development in Africa (PHDA), University of Manitoba (UoM). HIV Prevention Programme Science Workshop Report. Nairobi, Kenya. 2025

HIV PREVENTION PROGRAMME SCIENCE WORKSHOP REPORT

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ABBREVIATIONS

ABYM	Adolescent Boys and Young Men
AGYW	Adolescent Girls and Young Women
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ART	Antiretroviral Therapy
ASAL	Arid and Semi-Arid Land
AYP	Adolescents and Young People
BBS	Biological and Behavioural Survey
CD4	Cluster of Differentiation 4
DIC	Drop-In Centre
EID	Early Infant Diagnosis
FSW	Female Sex Worker
FY	Fiscal Year
GBV	Gender-Based Violence
HAART	Highly Active Antiretroviral Therapy
HEI	HIV-Exposed Infant
HF	Health Facility
HIV	Human Immunodeficiency Virus
HTS	HIV Testing Services
KAP	Knowledge, Attitude, Practice
KHIS	Kenya Health Information System
KP	Key Population
KPLHIV	Key Population Living with HIV
L&D	Labour & Delivery

MAT	Methadone-Assisted Therapy
MSM	Men Who Have Sex with Men
MoH	Ministry of Health
NASCOP	National AIDS & STI Control Programme
NSDCC	National Syndemic Diseases Control Council
NSP	Needle and Syringe Programme
OST	Opioid Substitution Therapy
PCR	Polymerase Chain Reaction
PHDA	Partners for Health and Development in Africa
PMTCT	Prevention of Mother-to-Child Transmission
PNC	Postnatal Care
PrEP	Pre-Exposure Prophylaxis
PS	Programme Science
PVT	Prevention of Vertical Transmission
PWID	People Who Inject Drugs
STI	Sexually Transmitted Infection
TG	Transgender
tPAF	Transmission Population Attributable Fraction
TSU	Technical Support Unit
UNAIDS	Joint United Nations Programme on HIV/AIDS
VMMC	Voluntary Medical Male Circumcision
VT	Vertical Transmission
WHO	World Health Organization
3PS	Population, Programme Components, and Programme Platforms

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EXECUTIVE SUMMARY

The HIV Prevention Programme Science Workshop convened January 27–29, 2025, at Maanzoni Lodge, Machakos, brought together senior government officials, academic researchers, and development partners to advance the integration of Programme Science into Kenya's HIV prevention strategy. The workshop was a key step in supporting the Ministry of Health in developing a data-driven approach for 2025 to 2030, aligned with the national goal of ending AIDS as a public health threat by 2030.

Kenya's HIV epidemic remains geographically and demographically heterogeneous. While progress has been made, new infections, particularly among key populations (i.e., female sex workers, men who have sex with men, people who inject drugs, and transgender people), adolescents, and young people remain unacceptably high. Structural barriers, service coverage gaps, and limitations in data utilisation continue to constrain programme effectiveness.

The workshop focused on operationalising Programme Science, an approach that integrates empirical research within programme implementation to inform prioritisation, resource allocation, and adaptive programming. Central to this was the application of the effective programme coverage framework, enabling stakeholders to identify and address critical service coverage gaps across the HIV prevention response.

Key findings

Strategic prioritisation: Participants reaffirmed the need to focus tailored, evidence-based interventions on high-burden populations and geographies.

Coverage gap identification: Data analysis through the effective programme coverage framework revealed substantial service coverage gaps in HIV testing, PrEP uptake, condom distribution, ART access, and harm reduction services across key and vulnerable populations.

Youth focus: In 2023, adolescents and young people aged 15–24 years contributed 39% of new infections in Kenya, highlighting urgent needs in testing, prevention literacy, and access to services.[1] The workshop revealed limited data availability from programmes for adolescents and young people to conduct meaningful coverage analysis.

[1] National Syndemic Diseases Control Council. 2024. Kenya Modes of Transmission Study, 2024.

Mother-to-child transmission (MTCT)[2] challenges: Persistent gaps in maternal ART coverage, early infant diagnosis, and infant prophylaxis continue to drive MTCT rates in Kenya above the global MTCT target of below 5%.[3]

Recommendations and next steps

- Institutionalise the routine use of the effective programme coverage framework at national and subnational levels.
- Embed real-time service coverage gap analysis and adaptive learning into routine programme cycles.
- Strengthen data systems, particularly for underserved groups such as key and vulnerable populations, adolescent boys and young men, and adolescent girls and young women.
- Incorporate the Programme Science approach within the Kenya Syndemic Diseases Strategic Framework and its County Syndemic Diseases Operational Plans to ensure science is embedded within programmes.
- Foster multisectoral collaboration and prioritise building local capacity in embedded Programme Science approach and strategic information utilisation stewardship for improved programme response.

The workshop underscored the critical role of Programme Science in achieving a high-impact, equitable, and sustainable HIV response in Kenya. This workshop report serves as a blueprint for integrating science into programmes to accelerate progress toward national and global HIV targets and optimise population-level impact of programmes.

[2] In this document, mother-to-child transmission is also referred to as vertical transmission, the term recommended by UNAIDS's 2024 Terminology Guidelines.
[3] World Health Organization. 2021. Global guidance on criteria and processes for validation: elimination of mother-to-child transmission of HIV, syphilis and hepatitis B virus. Geneva: World Health Organization.

01

BACKGROUND

Programme Science is an approach that aims to improve the design, implementation, and monitoring of public health programmes through the systematic application of theoretical and empirical scientific knowledge generated through programme-embedded research and learning processes.[4] A framework for both programming and research, Programme Science is defined as an iterative process in which empirical and situated programme-derived knowledge drives scientific inquiry, which then produces new evidence that is incorporated into programming for service optimisation and population-level impact. The Programme Science approach is equity-focused; it embraces complexity in public health programmes, centres communities most affected in programme-embedded research and practice, and informs resource allocation decisions to ensure that programme activities accommodate the needs of prioritised populations.

Kenya has committed to ending AIDS as a public health threat by 2030. The HIV epidemic in Kenya is heterogeneous, with significant variation in the burden of HIV across geographic areas and population groups. Despite notable progress, new HIV infections remain unacceptably high, imposing unsustainable treatment costs on the nation's health system. The *National Multisectoral HIV Prevention Acceleration Plan 2023–2030* has been developed to provide guidance for accelerating the reduction of new HIV infections. Strategy 8 of the HIV prevention acceleration plan prioritises the adoption of Programme Science and the use of data to enhance HIV prevention programme effectiveness.[5]

[4] Becker, M.L. et al. 2018. The contributions and future direction of Programme Science in HIV/STI prevention. *Emerg Themes Epidemiol.* 15:7 https://doi.org/10.1186/s12982-018-0076-8
[5] National Syndemic Diseases Control Council. 2023. National Multisectoral HIV Prevention Acceleration Plan 2023–2030. Nairobi: National Syndemic Diseases Control Council.

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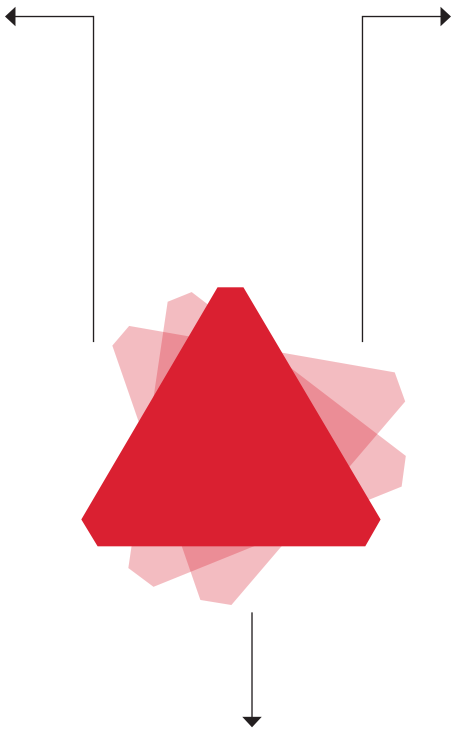
WORKSHOP GOAL AND OBJECTIVES

The workshop brought together participants representing NSDCC and NASCOP, academic institutions, development partners, and implementing partners. The workshop was facilitated by the University of Manitoba and Partners for Health and Development in Africa. The goal of the workshop was to orient the participants to the Programme Science approach and apply the effective programme coverage framework as a tool to embed science into programming in Kenya.

The workshop had three objectives:

1. Develop a shared understanding of how Programme Science can be used to optimise Kenya's HIV prevention strategy and programming.
   a) Establish programme strategies by prioritising populations, programme components, and programme platforms.
   b) Identify gaps in HIV prevention programme coverage using the effective programme coverage framework.



2. Establish research and learning priorities to address programme gaps and to optimise impact and equity in Kenya's HIV prevention programme outcomes.
   a) Explore relevant and feasible methods and approaches for research and learning to generate programme-relevant data.
   b) Identify strategies to efficiently use data for programmatic decision-making.

3. Support NSDCC to incorporate Programme Science in the national Syndemic Diseases Strategic Framework 2025–2030 and identify required technical support.

03 DAY ONE

3.1 INTRODUCTIONS AND OPENING REMARKS BY PARTICIPATING INSTITUTIONS

3.1.1 Marissa Becker expressed the university's pleasure in partnering with Kenya on its HIV response. She noted that the university's President, Dean, and Chancellor were visiting Kenya to learn about the impactful work being done and affirmed the university's commitment to continued support.

3.1.2 Margaret Ndubi expressed gratitude for involvement in the Programme Science initiative that focused on HIV prevention, particularly for key populations, who experience higher infection rates. She posed the question of how best to address the specific needs of these populations to effectively reduce new infections. UNAIDS reaffirmed its commitment to continued collaboration and support of the response.

3.1.3 Helgar Musyoki affirmed Kenya's leadership in strategic decision-making for Global Fund programmes. Kenya's best practices in key population and other prevention programmes were highlighted as valuable models regionally and internationally. She expressed satisfaction with Kenya's development of a sustainability framework, emphasising the timely opportunity to ensure programme and health systems sustainability, and suggested exploring Zimbabwe's approach. The utilisation of the workshop report to inform national discussions was reiterated.

3.1.4 Sharmistha Mishra cited the role of researchers and academics in training, theoretical frameworks, and scholarly work to inform HIV response programmes. She emphasised the importance of programme results being grounded in theory and research. She cited the implementation of Kenya's Key Populations Programme in Sierra Leone as an example of successful knowledge transfer. She also highlighted the need for strategies and policies focused on sustainability, noting that the Transmission Population Attributable Fraction (tPAF) work was informed by academic research.

3.1.5 Betner Nyamota noted that performance against the 95-95-95 targets was suboptimal—particularly for the second and third 95s—among children, adolescents, and men. She emphasised the need for a shared understanding of how to achieve the common goal of HIV prevention and treatment.

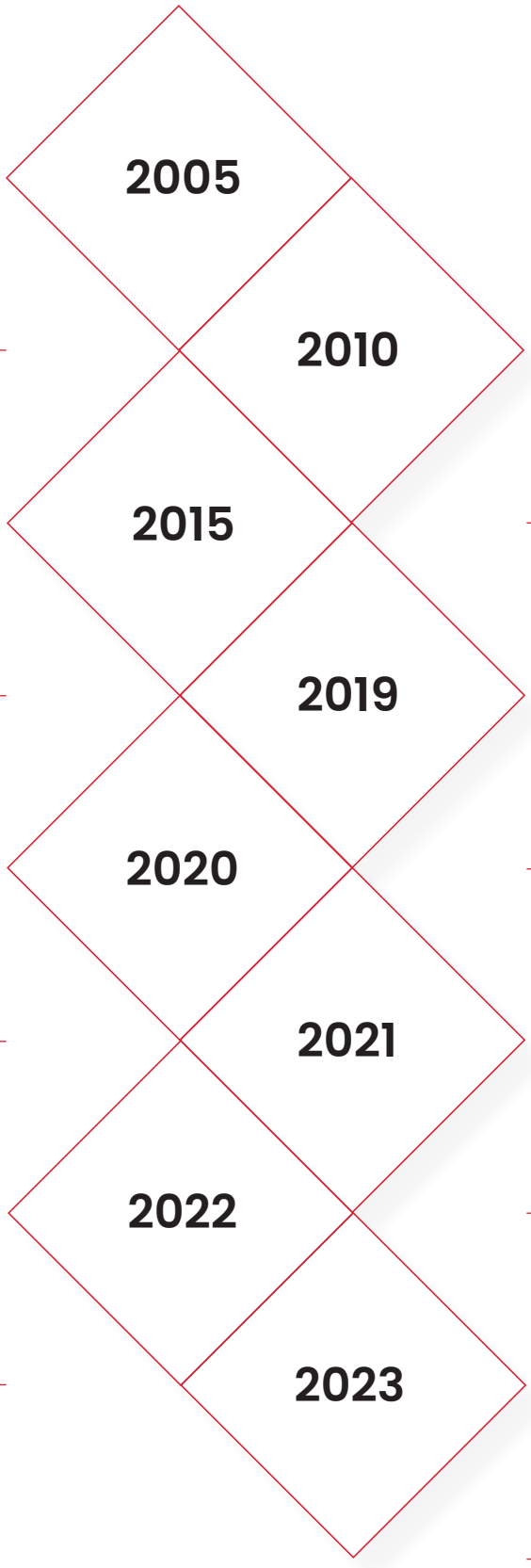
3.2 PARTICIPANT EXPECTATIONS

- A Programme Science operational plan developed to guide the next phase of Kenya's HIV programme.
- Given anticipated reductions in donor funding, including the US Government Executive Order on international development funding, the time has come for using embedded research to inform programme planning.
- Embed the Programme Science approach into Kenya's Syndemic Diseases Strategic Framework and its associated county operational plans.

3.3 DAY ONE PRESENTATIONS

3.3.1 Kenya's 10-year HIV Prevention Progress: Dr. Murugi Micheni, NSDCC

Figure 1: HIV milestones in Kenya 2005–2023



2005
HIV Prevalence **6.8%**
Incidence **0.40%**
Mortality **110,000**
MTCT Rate **35%**
PLHIV **1,400,000**
HIV Infections **94,000**

2010
HIV Prevalence **6.4%**
Incidence **0.31%**
Mortality **53,000**
MTCT Rate **21%**
PLHIV **1,493,165**
HIV Infections **67,000**

2015
HIV Prevalence **5.91%**
Incidence **0.0.27%**
Mortality **35,821**
MTCT Rate **8.3%**
PLHIV **1,517,707**
HIV Infections **77,647**

2019
HIV Prevalence **4.5%**
Incidence **0.11%**
Mortality **20,997**
MTCT Rate **10.8%**
PLHIV **1,508,405**
HIV Infections **41,416**

2020
HIV Prevalence **4.3%**
Incidence **0.09%**
Mortality **19,486**
MTCT Rate **9.7%**
PLHIV **1,435,271**
HIV Infections **32,027**

2021
HIV Prevalence **4.0%**
Incidence **0.098%**
Mortality **22,373**
MTCT Rate **8.9%**
PLHIV **1,437,267**
HIV Infections **34,540**

2022
HIV Prevalence **3.7%**
Incidence **0.059%**
Mortality **18,473**
MTCT Rate **8.6%**
PLHIV **1,377,784**
HIV Infections **22,154**

2023
HIV Prevalence **3.3%**
Incidence **0.039%**
Mortality **20,480**
MTCT Rate **7.3%**
PLHIV **1,378,458**
HIV Infections **16,752**

Kenya has demonstrated significant progress in its HIV response over the past 10 years. Despite efforts, 16,752 new infections were reported in 2023, falling short of the ambitious 2030 target of zero new infections.

A critical concern was the high national vertical transmission rate of 7.3%, significantly exceeding the 5% target, with higher rates particularly in arid and semi-arid land (ASAL) counties. Notably, 38% of new HIV infections among children occur when mothers discontinue antiretroviral therapy (ART) during pregnancy or breastfeeding. A thorough investigation was recommended to understand the characteristics of these mothers and identify the social factors contributing to treatment interruptions.

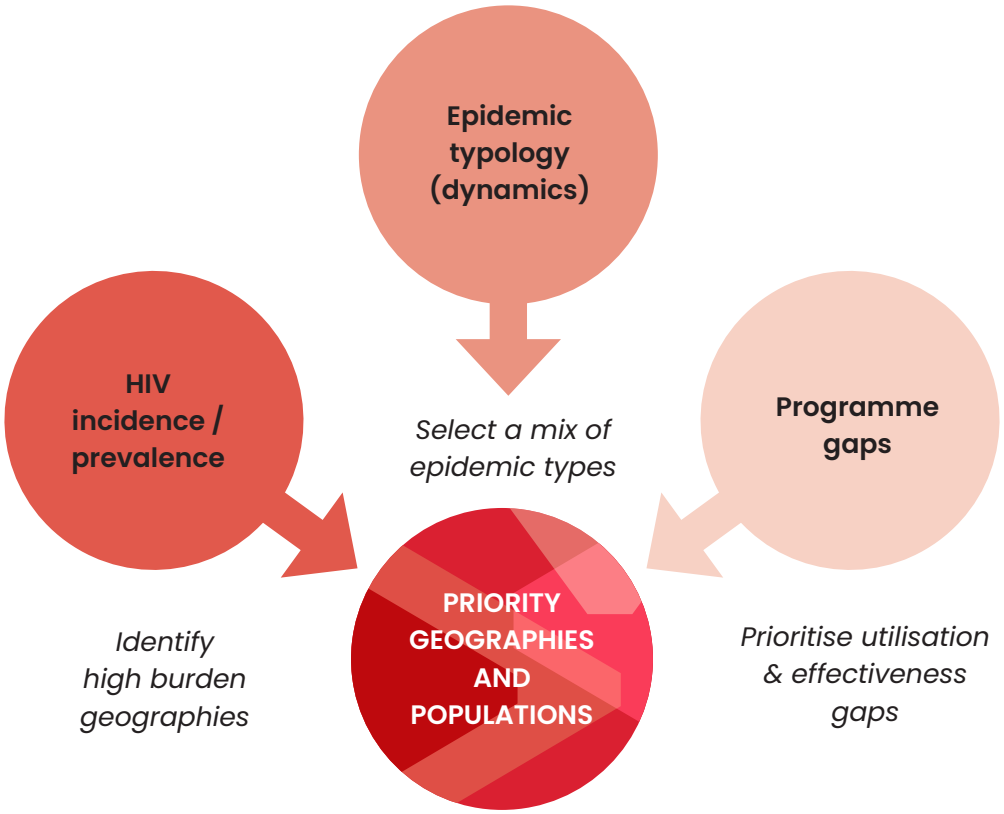
While women exhibit a higher prevalence of HIV infection, men experience higher mortality rates from HIV-related illnesses. Further research is needed to understand the factors contributing to this disparity and develop strategies to reverse this trend.

The 10-year HIV prevention progress report emphasised the critical need to address the "triple threat" facing adolescents: new HIV infections, adolescent pregnancies, and gender-based violence (GBV). Strengthening the continuum of care for sexual and gender-based violence survivors is paramount. It was also noted that men experience GBV, and programmes should not overlook this reality. Men demonstrated lower uptake of HIV prevention services, engage in risky behaviours, and present for care at later stages. Risk factors for men included injecting drug use—with men and boys accounting for 89% of people who inject drugs—low school transition rates, increased involvement in criminal activities, and a high burden of tuberculosis.

3.3.2 Understanding Kenya's HIV Landscape through the HIV Estimates Process: Joshua Gitonga, NSDCC

Joshua presented the process used to generate HIV estimates, which required the integration of demographic data, programme statistics, epidemic patterns, surveillance data, survey data, and routine testing data. The presentation emphasised the importance of national prevention policies that are informed by local epidemiological dynamics. Such an approach supports programmes that address the unique local transmission dynamics and drivers of the epidemic in different geographic regions, leading to more efficient and effective responses. Approaches that provide accurate and timely insights into the current drivers of local transmission, including epidemic heterogeneity, were identified as crucial. The epidemic appraisal approach (Figure 2), which incorporates county-level variations in HIV incidence/prevalence, epidemic typology, and programme coverage gaps, was discussed as a key component of this strategy.

Figure 2: Epidemic appraisal approach



3.3.3 tPAF Modelling: Dr. Sharmistha Mishra, University of Toronto

Dr. Mishra presented on the application of tPAF modelling in HIV/STI assessments. "tPAF" stands for "transmission population attributable fraction," which is a measure in epidemiology that estimates the proportion of new infections in a population that can be attributed to transmission occurring within a specific high-risk group, considering the cascading effect of onward transmission through their partners and beyond. Her presentation highlighted the following key points:

- Quantifying programme gaps: tPAF modelling can provide quantitative insights into the contribution of programme gaps to the epidemic.
- Estimating the unseen: tPAF helps estimate factors influencing transmission that are not readily apparent in standard surveillance methods and offers a predictive capacity, projecting future transmission patterns based on current data. Critically, it identifies at-risk populations and the conditions that contribute to onward transmission.
- Projecting long-term consequences: tPAF modelling provides insights into the medium- to long-term transmission consequences of unmet needs, demonstrating that a more targeted response can yield greater impact for the same resource investment.
- Measuring preventable infections: tPAF modelling quantifies the impact of programme gaps by estimating the proportion of future HIV infections that could be prevented if those gaps were addressed. tPAF modelling can assess the potential impact of existing programme gaps on future transmission dynamics.

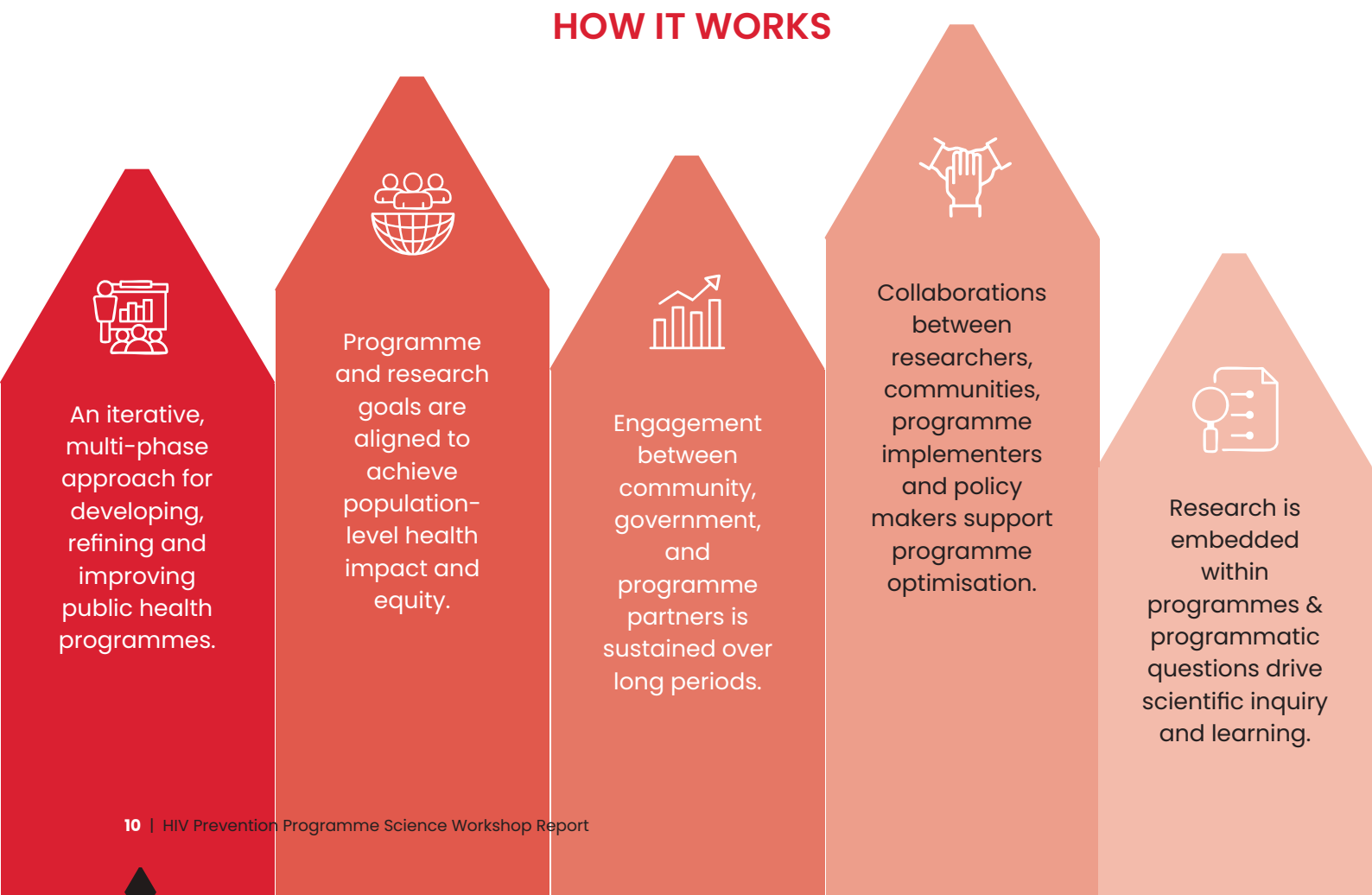
3.3.4 Overview of Programme Science: Dr. Marissa Becker, University of Manitoba

Dr. Becker defined Programme Science, how it works, and its rationale (Figure 3), highlighting the following:

Integration of research & programmes: Ensures that a programme's key knowledge gaps are driving embedded research and learning agenda, which then generates evidence to inform and optimise programme operations.

Figure 3: Programme science: How it works

Programme Science is the systematic application of theoretical & empirical scientific knowledge to improve the design, implementation & evaluation of public health programmes.



Enhanced programme responsiveness: Allows programmes to be flexible, nimble, and adaptable to identify, evaluate, and respond to programmatic complexities as they emerge.
Synergistic collaboration: Requires multidisciplinary teams working together to build upon their diverse strengths to create synergies.

Long-term partnerships: Builds intersectoral partnerships that last beyond single projects, creating a sustainable foundation for further work to improve population-level outcomes.

Reactions to the presentation

- How do we balance continuing what we are currently doing and incorporating changes to programming informed by findings from embedded research?
- How do we prioritise the Programme Science components in the face of limited budget resources?
- How do we undertake a strategic planning process informed by the Programme Science approach?
- What is the role of programme staff who are not scientists in a programme adopting the Programme Science approach?
- Decision-makers understand the place of pilot programmes to inform programme scaling up. Where does Programme Science fit in, and what is the best approach to market Programme Science to policymakers?
- How does Programme Science get into the country's strategic framework?

Response

- Programme Science is the science of scale-up. It helps address the challenges identified in pilot programmes to inform best approaches during scale-up.
- Programme Science is an embedded process that collaborates with programme implementers and policy makers along the programme cycle as an iteration process, reflecting learning along the entire implementation process.
- Programme Science implemented through multidisciplinary teams (researchers, programme implementers, policy makers and beneficiary representatives) is key to Programme Science success.

3.3.5 Key Populations Bio-Behavioural Survey: Dr. Lilly Nyagah, NASCOP

Dr. Nyagah presented findings from a bio-behavioural survey (BBS) conducted in 2024 among key populations (i.e., female sex workers, men who have sex with men, people who inject drugs, and transgender people).

The survey's primary objectives were to:
- estimate HIV prevalence;
- estimate HIV incidence;
- examine HIV service uptake (prevention and treatment) and serostatus knowledge; and
- estimate the proportions of key population members who know their HIV status, are on treatment, and are virally suppressed (UNAIDS 95-95-95 targets).

The secondary objectives were to:
- estimate STI prevalence,
- identify risk factors associated with HIV infection, and
- estimate key population size.

Nine counties with high key population size estimates and existing key populations programmes were selected. The total sample size was 12,136, distributed as follows: 3,605 female sex workers (FSWs), 5,363 men who have sex with men (MSM), 2,130 people who inject drugs (PWID), and 1,038 transgender people (TG).

Table 1: HIV prevalence, viral suppression, and population size estimates for key populations in nine counties in Kenya, 2024[6]

Key Population	HIV Prevalence % (95%CI)[1]	Viral Suppression, % <200 copies/ml (95% CI)[1]	Population Size Estimate (95% CI)[2,3]
FSWs	27.5 (25.1-30)	80.1 (76.7-83.4)	100,903 (83,867-119,812)
MSM	19.1 (17.1-21.1)	76.1 (72.3-79.1)	34,980 (29,687-40,745)
PWID	9.1 (6-12.2)	84.5 (76.8-92.3)	14,290 (11,660-17,180)
TG	22.0 (18.6-25.4)	82.5 (76.6-88.3)	4,058 (3,313-4,887)

[1] CI: 95% Confidence Interval
[2] CI: 95% Credible Interval
[3] Viral suppression is among all individuals who are HIV positive regardless of knowledge of HIV status or use of ART.

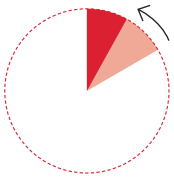
[6] Ministry of Health. 2024. Biobehavioural Survey among Key Populations in 9 Counties in Kenya, 2024. Nairobi: Ministry of Health, Republic of Kenya.

Preliminary results included:

- HIV prevalence was 27.5% among female sex workers, 19.1% among men who have sex with men, 9.1% among people who inject drugs, and 22% among transgender people (Table 1).
- County-level HIV prevalence was presented for each of the nine survey counties and the four key population groups. The highest prevalence rates by key population group and county were: female sex workers in Kisumu (44.2%), men who have sex with men in Nairobi (36%), people who inject drugs in Kilifi (11.6%), and transgender people in Mombasa (19.9%).
- Progress toward the 95-95-95 targets was presented, showing the percentage aware of HIV status among HIV-positive individuals (95% CI), the percentage on ART among those aware of their status (95% CI), and the percentage virally suppressed among those on ART (95% CI).
- Other indicators presented included STI prevalence, key population-related stigma, PrEP knowledge and use, condom use, HIV testing history, and contact with peer educators.
- Population size estimates for the nine counties were also shared.

Summary observations

HIV prevalence among people who inject drugs

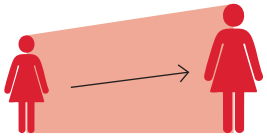


reduced to 9% from 18% in 10 years.

HIV prevalence among men who have sex with men in Nairobi County

is higher than it was 10 years ago.

HIV prevalence among female sex workers



increased with age.

3.3.6 The Effective Programme Coverage Framework: Dr. Leigh McClarty, University of Manitoba

Drawing on her work on Programme Science,[7] Dr. McClarty emphasised the need to tailor programmes to specific local contexts by aligning programme strategies with the "3Ps": population, programme components, and programme platforms, to optimise population level impact through iterative prioritisation of resource allocation. She introduced the effective coverage cascade, comprising the following domains:

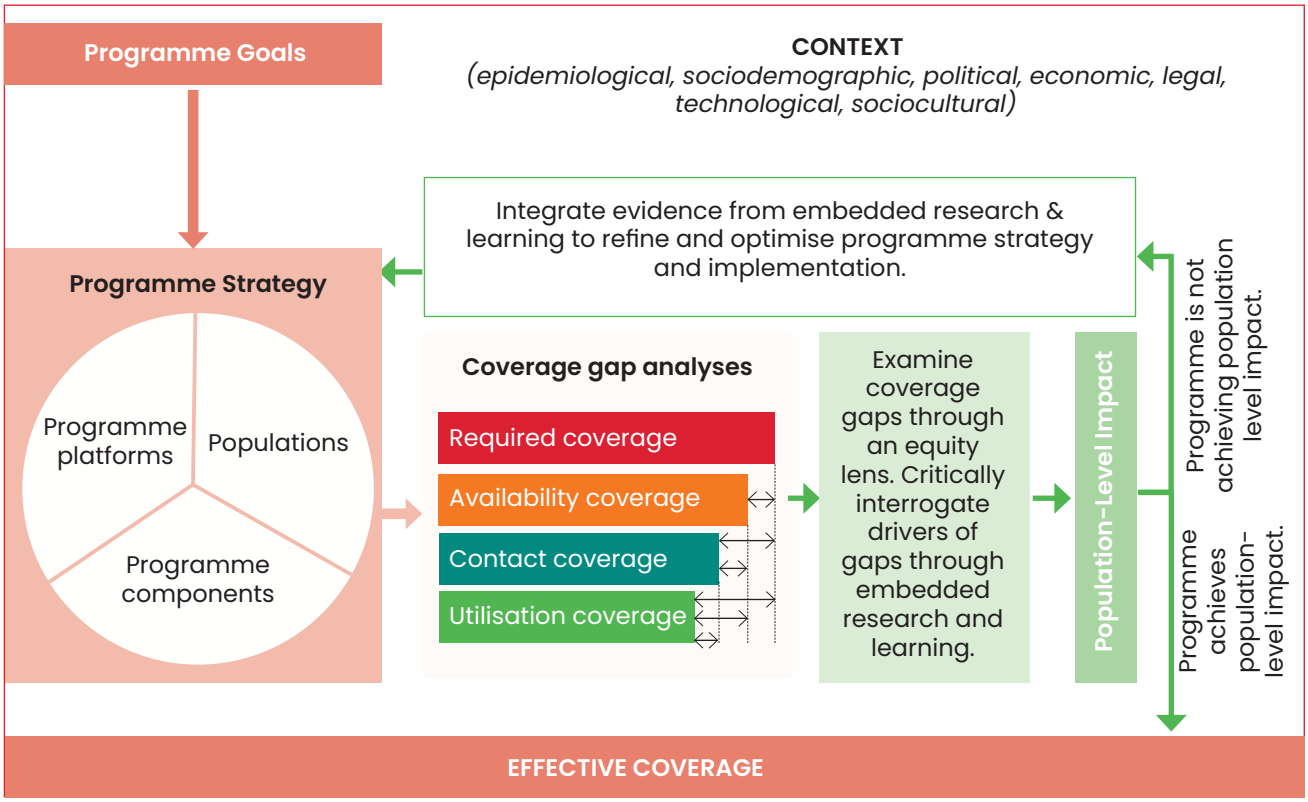
Required coverage: defines the estimated subpopulations that will benefit most from specific programme services, within a given context; establishes the target for programme outputs and outcomes that are monitored during implementation; and typically acts as denominator for subsequent coverage cascade steps.

Availability coverage: measures a programme's capacity to provide specific programme services to the specific subpopulations who require programme coverage; proportion of the specific programme services available to specific subpopulations within prioritised geographies to meet required coverage targets; and availability coverage targets set separately for different programme services (e.g., condom distribution, provision of PrEP or ART) for different subpopulations and geographies.

[7] McClarty LM, Becker ML, García PJ, Garnett GP, Dallabetta GA, Ward H, Aral SO, Blanchard JF. 2023. Programme science: a route to effective coverage and population-level impact for HIV and sexually transmitted infection prevention. *Lancet HIV*. 10(12):e825-e834. doi: 10.1016/S2352-3018(23)00224-2.

Contact coverage: measures contact between the programmes providing specific services and specific subpopulations relative to the required coverage targets.

Utilisation coverage: measures uptake of specific programme services by specific subpopulations in relation to the established required coverage target; compared to contact coverage, utilisation coverage is more directly related to observed changes in monitored programme outcomes.



She stressed the importance of embedded research and learning that includes programme analysis to identify and quantify coverage gaps and devise approaches to address the identified gaps through an equity lens, with the ultimate goal of population-level impact. The framework emphasises integrating learnings to refine programme strategy, enabling adjustments based on evidence generated through embedded research. The crucial role of local context, influencing all framework elements in the embedded research agenda, was emphasised.

04 DAY TWO

4.1 DAY TWO PRESENTATIONS

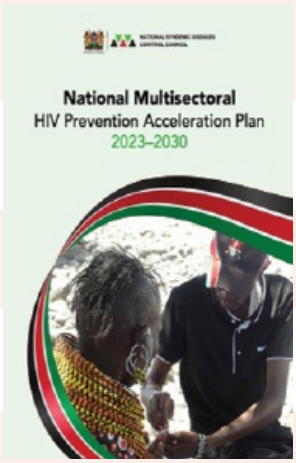
4.1.1 Programme Strategies for the National HIV Prevention Programme: Dr. Celestine Mugambi, NSDCC

The presentation highlighted the strategies in the National Multisectoral HIV Prevention Acceleration Plan 2023–2030 (Fig. 4) that are aligned with Global HIV Prevention Coalition targets.

Figure 4: Strategic directions for the National HIV Prevention Programme

Strategic directions: Based on the lessons learnt and the objectives of this HIV Prevention Acceleration Plan, the following strategies will be adopted:

- Strengthen the HIV prevention programme monitoring and evalutation system.
- Adopt Programme Science and use data to enhance HIV prevention programme effectiveness.
- Strengthen national and subnational coordination and management of HIV response through multisectoral collaboration and accountability of all stakeholders.
- Develop and implement innovative country investment and financing approaches for a sustainable HIV prevention response.
- Institute mechanisms for rapid introduction of new HIV prevention technologies and programme innovations.
- Promote integration of HIV prevention into essential related services to improve HIV outcomes.
- Strengthen and expand community centred HIV prevention services.
- Scale up provision of effective comprehensive combination prevention interventions, tailored to meet the specific needs and contexts of subpopulations.
- Apply a precision and differentiated prevention approach based on current evidence, geographic prioritisation, subpopulation groups and epidemic typology.



The nine strategies of the National Multisectoral HIV Prevention Acceleration Plan 2023–2030 were discussed, which are

- precision programming based on current evidence,
- scaling up combination prevention interventions to address coverage and utilisation gaps,
- strengthening and expanding community-centred HIV prevention services,
- integration of HIV prevention into health services,
- the rapid introduction of new HIV prevention technologies and innovations,
- implementing innovative financing approaches,
- strengthening programme governance coordination structures,
- embedding Programme Science research to enhance programme effectiveness, and
- strengthening programme monitoring and evaluation systems.

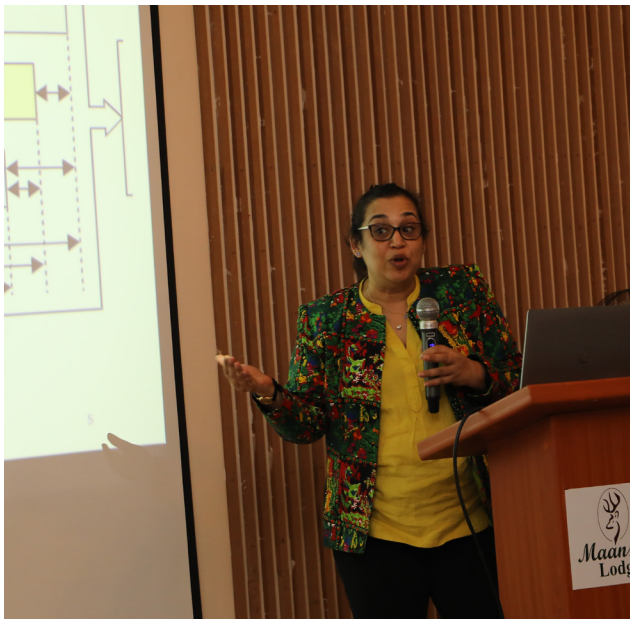
4.1.2 Manitoba Population Data Repository System: Dr. Souradet Shaw, University of Manitoba

Dr. Shaw presented the model of how the University of Manitoba successfully collaborated with government agencies and other stakeholders to develop a high-quality data repository system that extends beyond traditional health data. The Manitoba Population Research Data Repository is a rich resource comprising interlinked data from multiple sectors, including healthcare, social services, education, justice, and vital registries. This interconnectedness provides a holistic and nuanced understanding of individuals, moving beyond isolated data points to create a comprehensive client profile. He emphasised that establishing strong data stewardship practices, built on trust and collaborative relationships, has been fundamental to the repository's success.

Currently, Kenya's data is fragmented and dispersed, hindering its effective use. Dr. Shaw underscored the critical need for Kenya to develop its own robust data repository to support evidence-based decision-making. This required meticulous data curation, reorganisation, and standardisation to ensure data quality, accessibility, and usability for meaningful analysis and programme improvement. He highlighted that such a repository would not only serve the health sector but also contribute to broader societal understanding and policy development across multiple domains.

4.1.3 Understanding Effective Programme Coverage Cascades and Programme Science Research: Parinita Bhattacharjee, UoM/PHDA

Parinita introduced case study scenarios (Annex 2) for participants to work in groups to build coverage cascades using available case scenario data, understand coverage gaps, and develop research agendas around identified coverage gaps. Three groups were formed and allocated case studies from three countries highlighting different HIV prevention scenarios. The groups applied the four domains of the effective programme coverage framework to answer questions in the case studies and presented their work.



4.1.4 Developing Kenya's HIV Prevention Programme Gaps and Research Priorities Using the Effective Programme Coverage Framework: Dr. Peter Arimi, PHDA

HIV programme data are crucial for informed decision-making, providing critical insights into epidemic trends, demographics, prevention services, and treatment effectiveness. This information enables programme implementers to efficiently allocate resources, prioritise interventions towards populations at the highest transmission risk, monitor progress, identify service delivery gaps, and ultimately design more effective, evidence-based HIV programme interventions. The data reveal programme successes and areas needing improvement, guiding interventions and solutions. Furthermore, the data assist in reviewing challenges and successes in both national and subnational programmes.

Group work

Before the workshop, the NSDCC and PHDA TSU teams reviewed the programme data (generated by Kenya Health Information System) for key and vulnerable populations, adolescent girls and young women, adolescent boys and young men, pregnant women, and children. They identified the indicators that best define required coverage, availability coverage, contact coverage, and utilisation coverage for HIV testing, condom programming, PrEP programming, needle and syringe programmes, MAT programme, and treatment programmes. Dr. Arimi divided the participants into three working groups:

1. key and vulnerable populations,
2. pregnant women and children, and
3. adolescents and young people (further divided into adolescent girls and young women, and adolescent boys and young men).

He provided the indicators defining each domain of the cascade for each subpopulation and intervention. The participants were tasked with applying the effective programme coverage framework to identify coverage gaps in each prevention intervention and propose research questions to address these gaps.

05 DAY THREE

5.1 WORKING GROUP EXERCISES AND PLENARY PRESENTATIONS

The groups continued to work on the previous day's assignment. Each group reviewed the indicators for each coverage domain for each prevention intervention for their subpopulation. Then they developed coverage cascades, analysed the programme gaps, and formulated research questions to address the gaps. The groups presented their work in the plenary for discussion by all participants. The following are outcomes from the group work:

5.1.1 Key and vulnerable populations

The HIV epidemic in Kenya with HIV prevalence of 3.3% among people between the ages of 15 and 49 years,[8] is highly heterogeneous, with key populations disproportionately bearing the burden of HIV. According to 2024 bio-behavioural survey (BBS) findings, HIV prevalence is 27.5% among female sex workers, 19.1% among men who have sex with men, 9.1% among people who inject drugs, and 22% among transgender people. Although these subpopulations represent less than 2% of the general population, they contribute 14.3% of new HIV infections,[9] thus confirming the importance of strategically focussing on interventions with them. To successfully establish the existing gaps, the workshop's Key and Vulnerable Populations Working Group assessed performance across the respective key population typologies using key population size estimates mapping (2020) and KHIS data for the July 2023 to June 2024 reporting period. According to the key population size estimation in 2020, Kenya had 240,270 female sex workers, 66,732 men who have sex with men, 26,673 people who inject drugs, and 4,370 transgender people. The group could not focus on the vulnerable populations (fisher folk, truckers, people in prisons, and discordant couples), as KHIS had limited data in relation to the vulnerable populations.

5.1.1.1 HIV testing programming among key populations

Target under the HIV testing domain: To calculate the HIV testing target, the HIV prevalence and knowledge of HIV status among key populations living with HIV reported by the BBS were used. For example, HIV prevalence among female sex workers was 27.5%, which means that out of an estimated 240,270 female sex workers, 66,074 were living with HIV and 174,196 were HIV negative. The BBS found that their knowledge of their HIV status was 94.5%, which means that out of those 66,074 female sex workers living with HIV, 62,440 were aware of their HIV status, and 3,634 were unaware. Hence, the HIV testing target comprised those estimated female sex workers who were not living with HIV (174,196) and those who were not aware of their HIV status (3,634), which comes to a total of 177,830 in need of HIV testing.

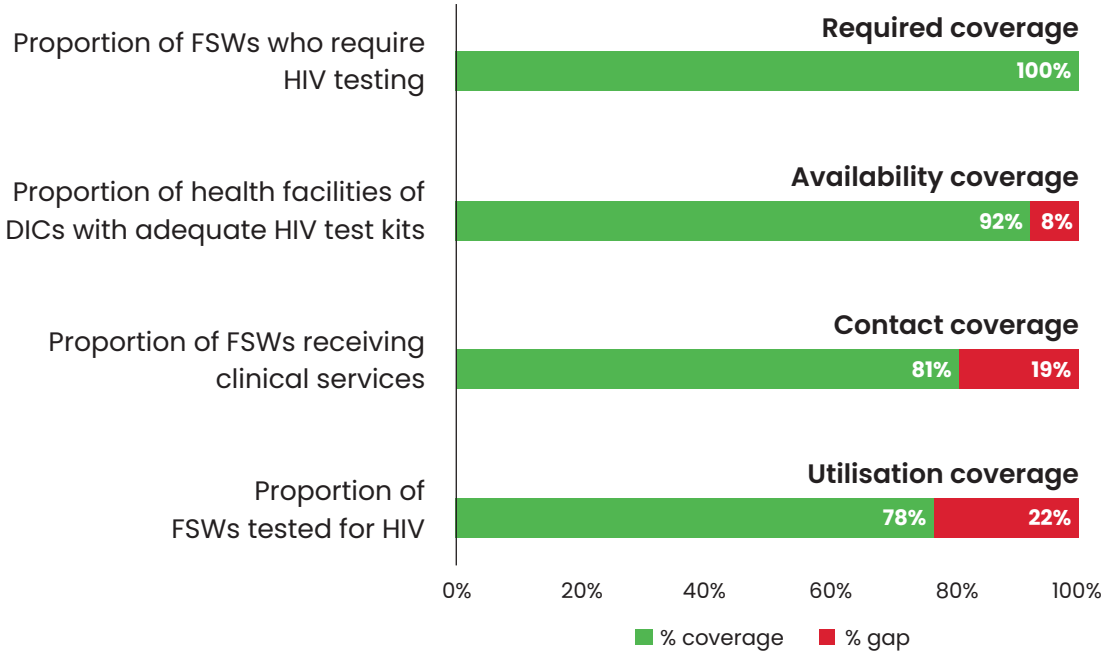
[8] HIV estimates, 2024
[9] Kenya Modes of Transmission Study, 2024

Similarly the required coverage for HIV testing for all key population groups was calculated.

Target: The national key population programme recommends that all key populations with unknown HIV status must be tested at enrolment. All those who test negative at enrolment must be tested every three months.

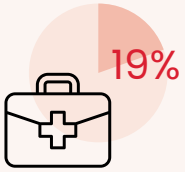
HIV TESTING COVERAGE CASCADE AMONG FEMALE SEX WORKERS

Figure 5: HIV testing coverage cascade among female sex workers, FY 2023/24

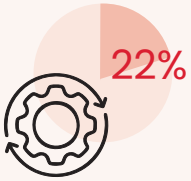


Major gaps identified:

of facilities offering services to female sex workers did not have adequate availability of HIV testing commodities.



of female sex workers did not receive clinical services and missed the opportunity to be contacted by the programme and tested for HIV.



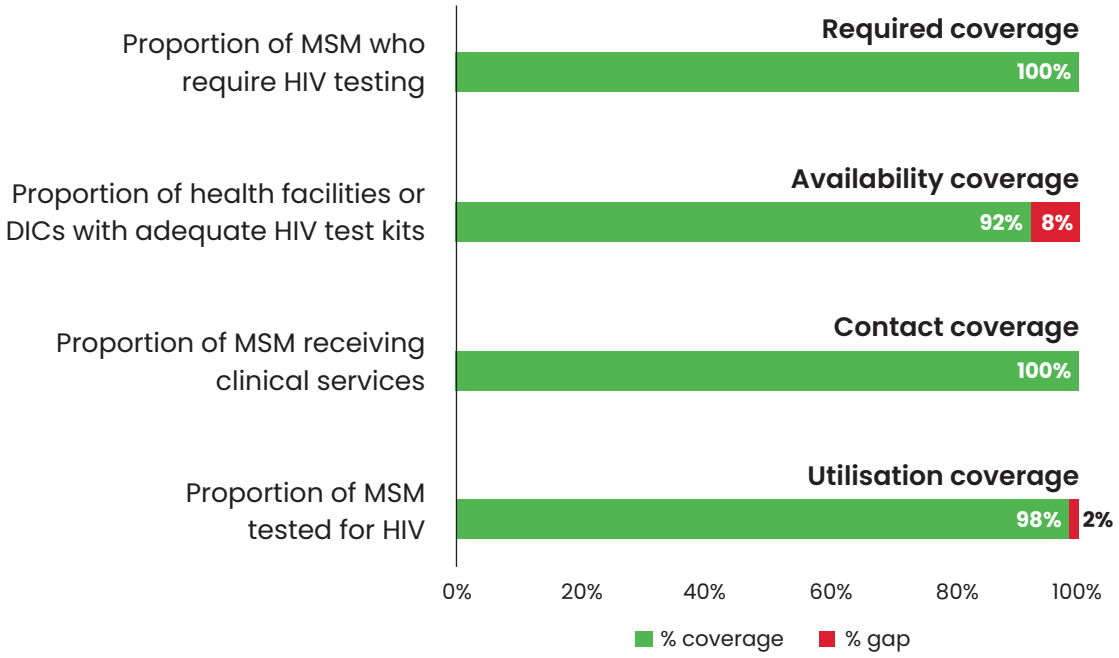
of female sex workers did not utilise HIV testing services.

Even though availability coverage for HIV testing was high, the programmes with female sex workers saw higher gaps in contact and utilisation coverage.

Programmes need to focus on these coverage gaps.

HIV TESTING COVERAGE CASCADE AMONG MEN WHO HAVE SEX WITH MEN

Figure 6: HIV testing coverage cascade among men who have sex with men, FY 2023/24



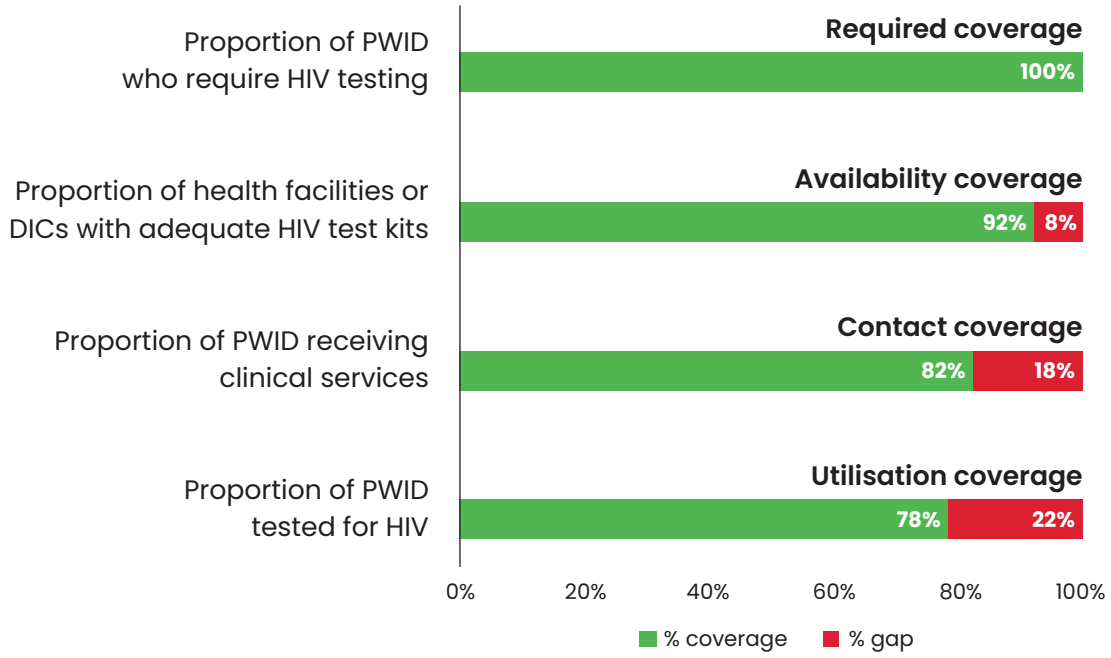
Major gaps identified:

of DICs/facilities offering services to men who have sex with men did not have adequate HIV test kits, causing availability coverage gaps.

Even though there was an availability gap, almost all men who have sex with men came in contact with clinical services and utilised HIV testing services.

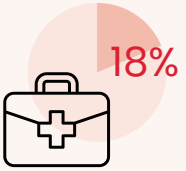
HIV TESTING COVERAGE CASCADE AMONG PEOPLE WHO INJECT DRUGS

Figure 7: HIV testing coverage cascade among people who inject drugs, FY 2023/24

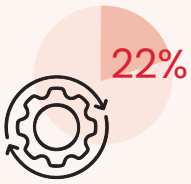


Major gaps identified:

of DICs/facilities offering services to people who inject drugs did not have adequate availability of HIV testing commodities.



of people who inject drugs did not come in contact with the clinics.

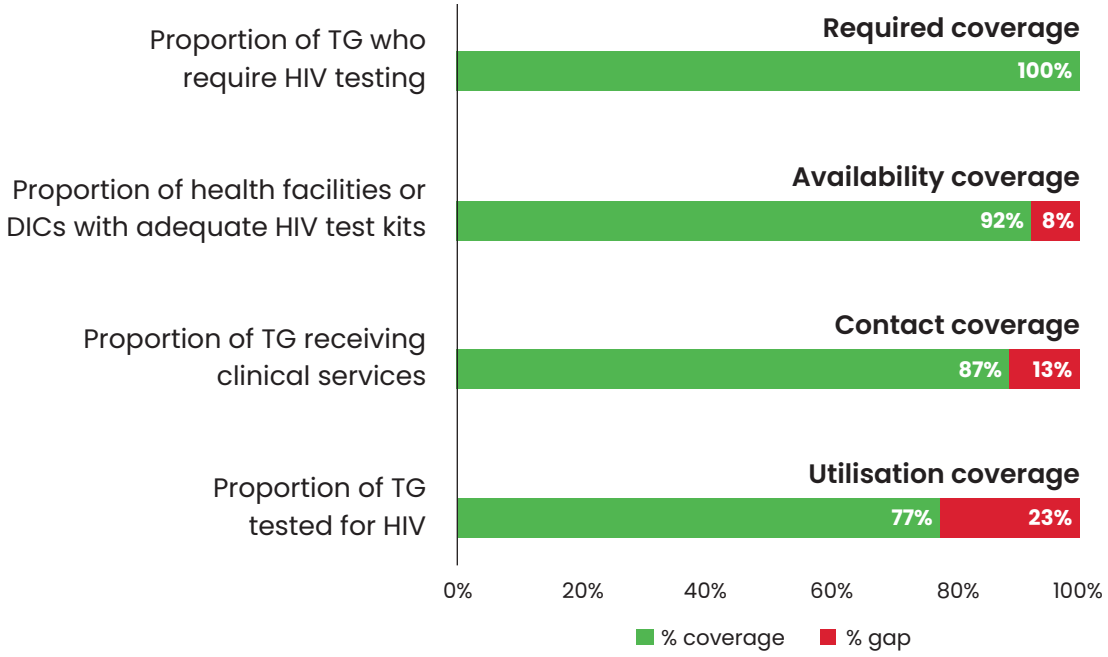


of people who inject drugs did not utilise HIV testing services.

Even though availability coverage for HIV testing was high, the programmes with people who inject drugs saw higher gaps in contact and utilisation coverage.
Programmes need to focus on these coverage gaps.

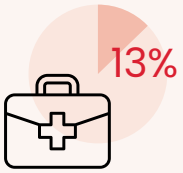
HIV TESTING COVERAGE CASCADE AMONG TRANSGENDER PEOPLE

Figure 8: HIV testing coverage cascade among transgender people, FY 2023/24

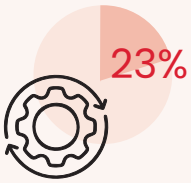


Major gaps identified:

of DICs/facilities offering services to transgender people did not have adequate availability of HIV testing commodities.



of transgender people did not come in contact with a clinic and hence did not receive clinical services.



of transgender people did not utilise HIV testing services.

Even though availability coverage for HIV testing was high, the programmes with transgender people saw higher gaps in contact and utilisation coverage.

Programmes need to focus on these coverage gaps.

Research questions

The following research questions were suggested to help find solutions to the identified gaps:

1. What factors contribute to the identified HIV testing contact and utilisation coverage gap among key population members?
2. What role do stigma and discrimination play in the willingness of key population members to access clinical services and utilise HIV testing services?
3. What changes in service delivery approaches, such as effective integration models and improved counselling, would ensure key population members have consistent contact with clinics and utilise HIV testing services?
4. What lessons can be learned from facilities with high HIV testing contact and utilisation coverage among key population members to improve service delivery in other locations?

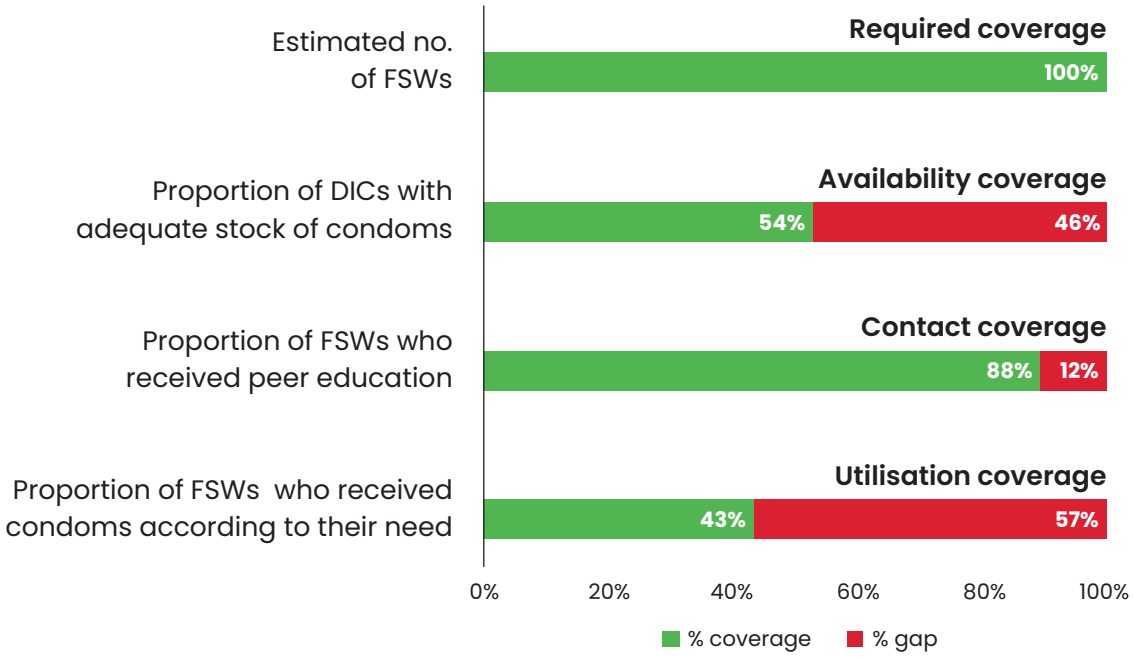
5.1.1.2 Condom programming among key populations

Kenya's condom programme is a targeted HIV prevention initiative designed to address the unique risks faced by communities with higher risk and vulnerability to HIV and other sexually transmitted infections. The programme distributes free public-sector condoms through outreach initiatives and facility-based distribution points. A large proportion of key population members receive condoms through peer educators during outreach.

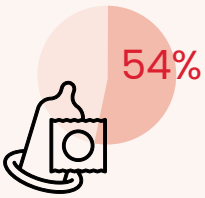
Target: The Key Populations Programme recommends that all key population members use condoms consistently, irrespective of the HIV status. Hence the cascade coverage analysis assumes that 100% of the estimated key population members require condoms.

CONDOM COVERAGE CASCADE AMONG FEMALE SEX WORKERS

Figure 9: Condom coverage cascade among female sex workers, FY 2023/24

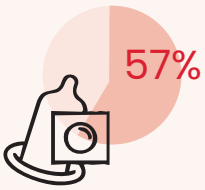


Major gaps identified:



of facilities used by female sex workers had inadequate supply of condoms and hence low availability.

of female sex workers did not come in contact with a peer educator and hence did not receive peer education and condoms through the peer educators.

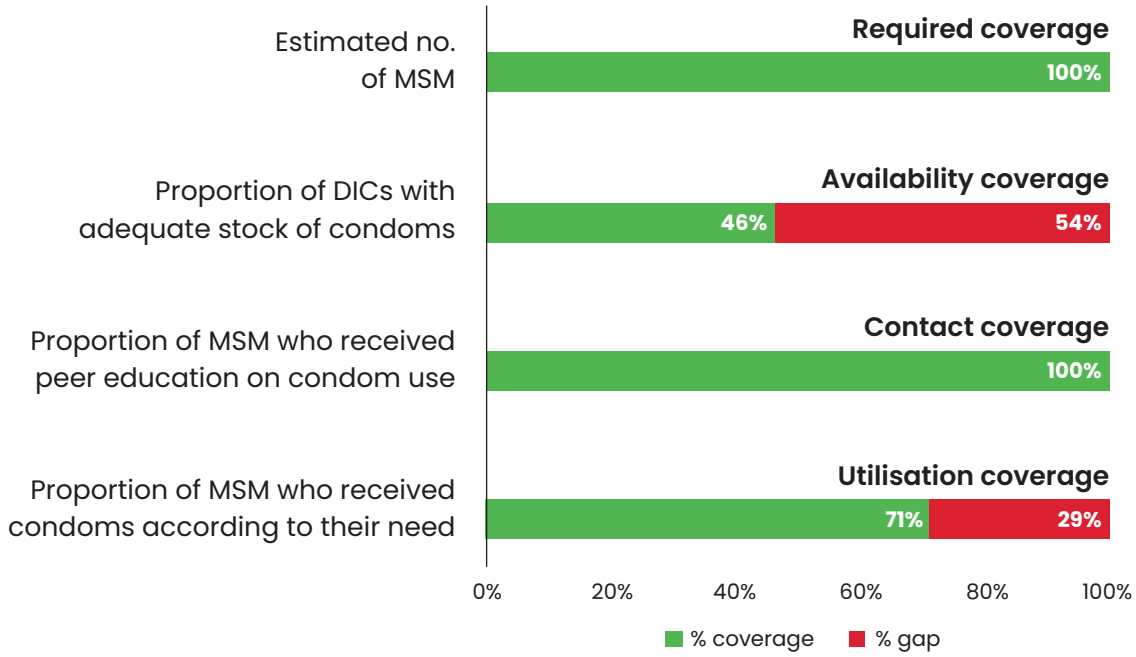


of female sex workers did not receive condoms according to their need, and hence it is assumed that they did not utilise condoms effectively.

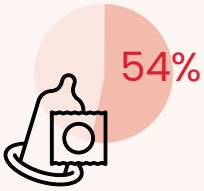
The challenge with the condom programme lies in large gaps in availability and utilisation of condoms, which need to be addressed.

CONDOM COVERAGE CASCADE AMONG MEN WHO HAVE SEX WITH MEN

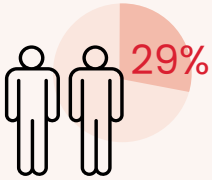
Figure 10: Condom coverage cascade among men who have sex with men, FY 2023/24



Major gaps identified:



of DICs for men who have sex with men had condom stockouts, causing low availability.

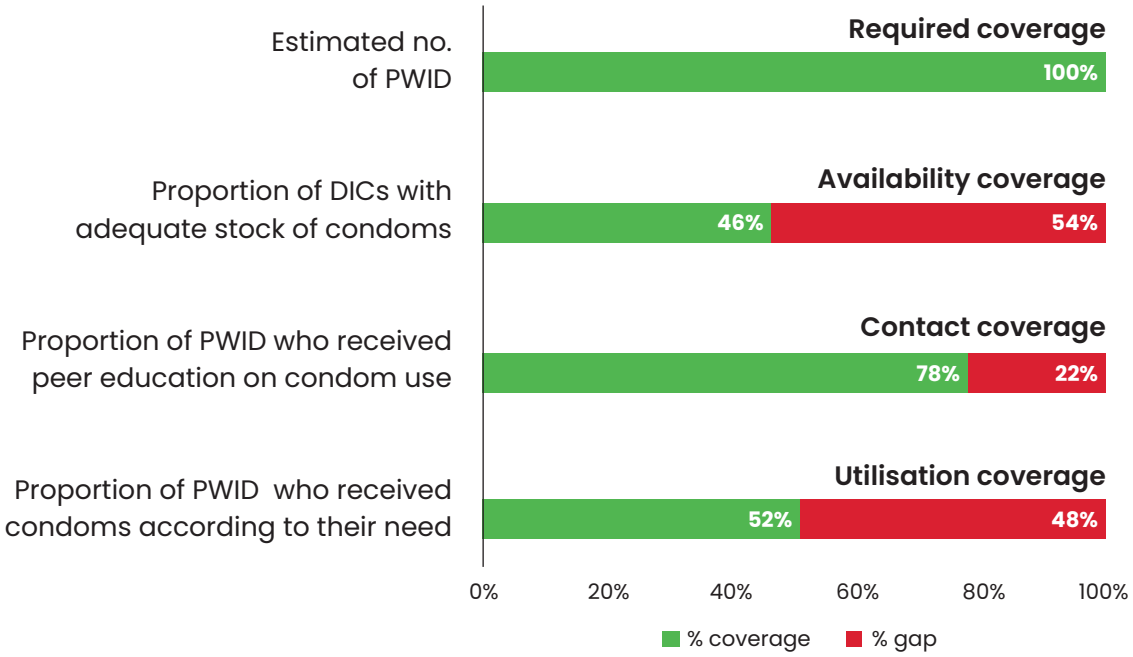


of men who have sex with men did not receive condoms according to their need, hence causing a utilisation gap.

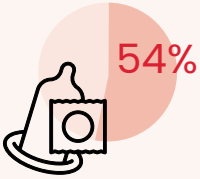
The focus of the programme with men who have sex with men should be addressing availability and utilisation coverage gaps.

CONDOM COVERAGE CASCADE AMONG PEOPLE WHO INJECT DRUGS

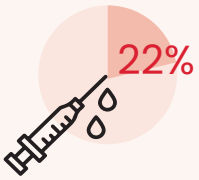
Figure 11: Condom coverage cascade among people who inject drugs, FY 2023/24



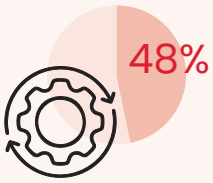
Major gaps identified:



of DICs for people who inject drugs had condom stockouts, hence causing an availability gap.



of people who inject drugs did not come in contact with a peer educator and hence may not have received condoms.

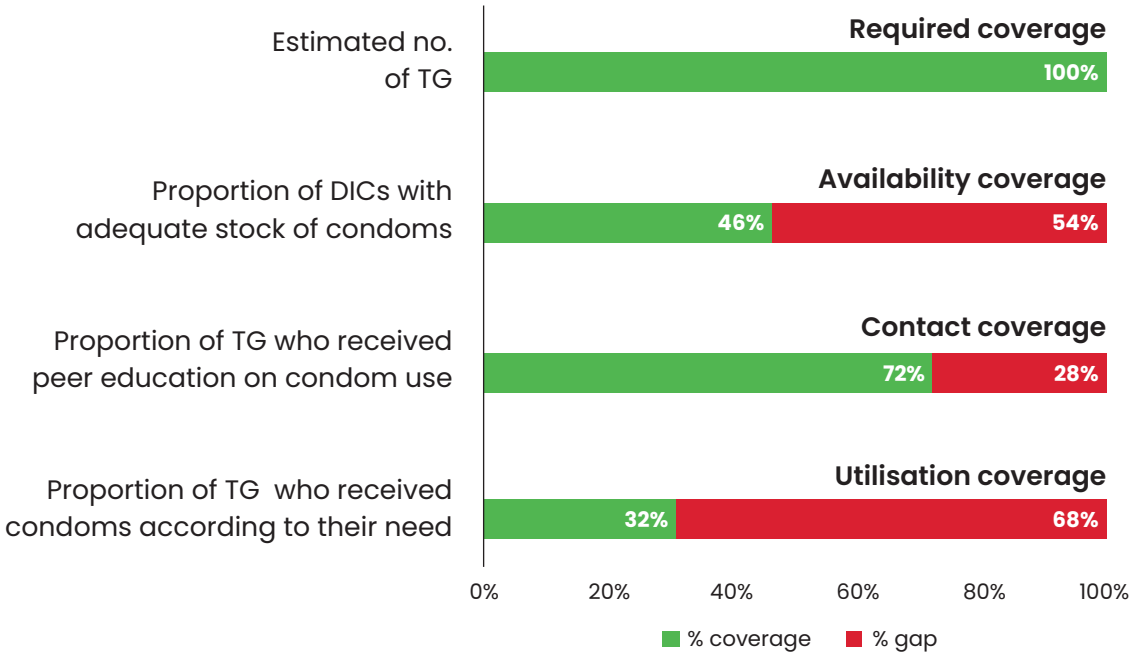


of people who inject drugs did not receive condoms according to their need, hence causing a utilisation gap.

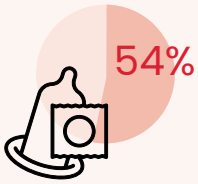
The programme with people who inject drugs needs to address availability, contact and utilisation coverage gaps immediately.

CONDOM COVERAGE CASCADE AMONG TRANSGENDER PEOPLE

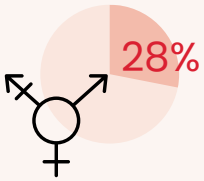
Figure 12: Condom coverage cascade among transgender people, FY 2023/24



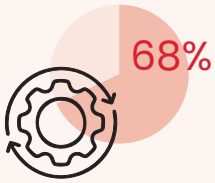
Major gaps identified:



of DICs for transgender people experienced condom stockouts, thus reducing availability of condoms.



of transgender people did not come in contact with a peer educator and hence may not have received condoms.



of transgender people did not receive condoms according to their need, thus impacting utilisation of condoms.

The programme with transgender people needs to focus on improving availability, contact and utilisation coverage for condoms.

Research questions

The following research questions were suggested to help find solutions to the identified gaps:

1. What factors are contributing to unreliable supply of condoms?
2. What programmatic changes will improve accessibility to adequate condoms among key population members?
3. What alternative to free distribution of condoms would be cost-effective and sustainable?
4. What can be done to improve the access of key population members to regular contact with peer educators?
5. What programmatic changes need to be made to accurately estimate the condom need for key population members and ensure adequate supply of condoms as per their need?

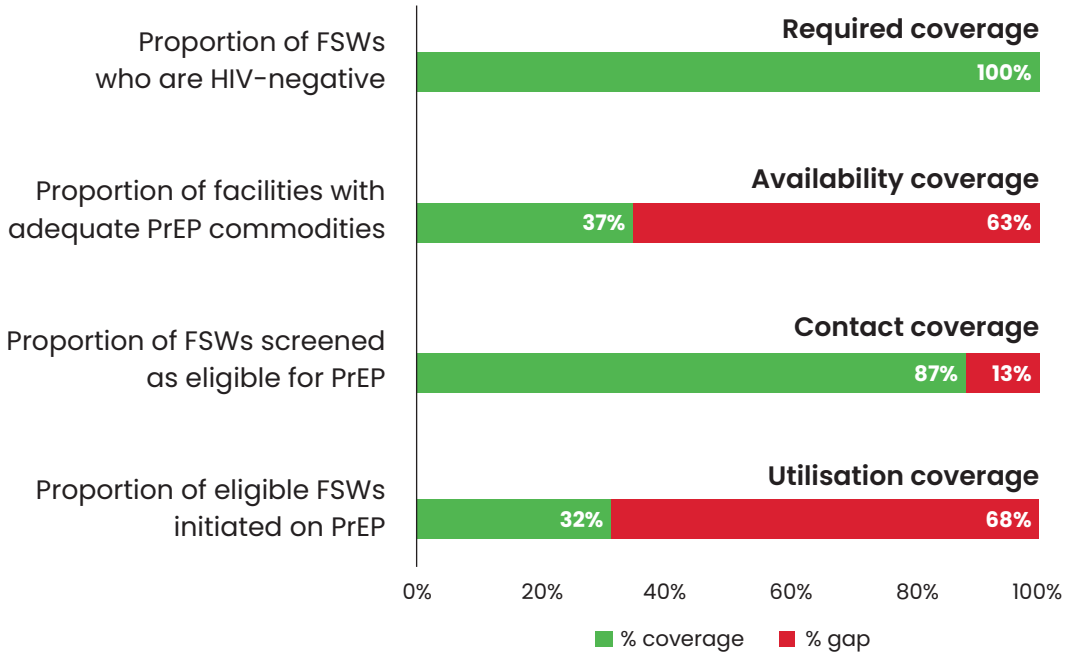
5.1.1.3 Pre-exposure prophylaxis programming among key populations

Pre-exposure prophylaxis (PrEP) is a form of HIV prevention in which an HIV-negative person at high risk of HIV infection takes antiretroviral medication to prevent HIV infection. Since PrEP's rollout in 2017, its implementation among key populations has been a critical component of the national HIV prevention strategy. However, adherence issues persist, with factors like stigma, side effects, and accessibility complicating consistent use. Ongoing efforts continue to focus on addressing these barriers to enhance PrEP adherence and overall effectiveness among key and vulnerable populations in Kenya.

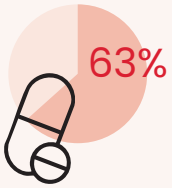
Target: All key population members with confirmed HIV-negative status are eligible for PrEP.

PrEP COVERAGE CASCADE AMONG FEMALE SEX WORKERS

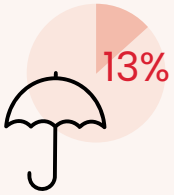
Figure 13: PrEP coverage cascade among female sex workers, FY 2023/24



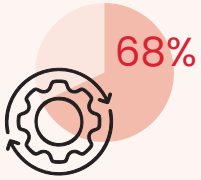
Major gaps identified:



of health facilities used by female sex workers did not have adequate availability of PrEP commodities.



of female sex workers who came to the clinic were not screened for PrEP eligibility by healthcare workers.

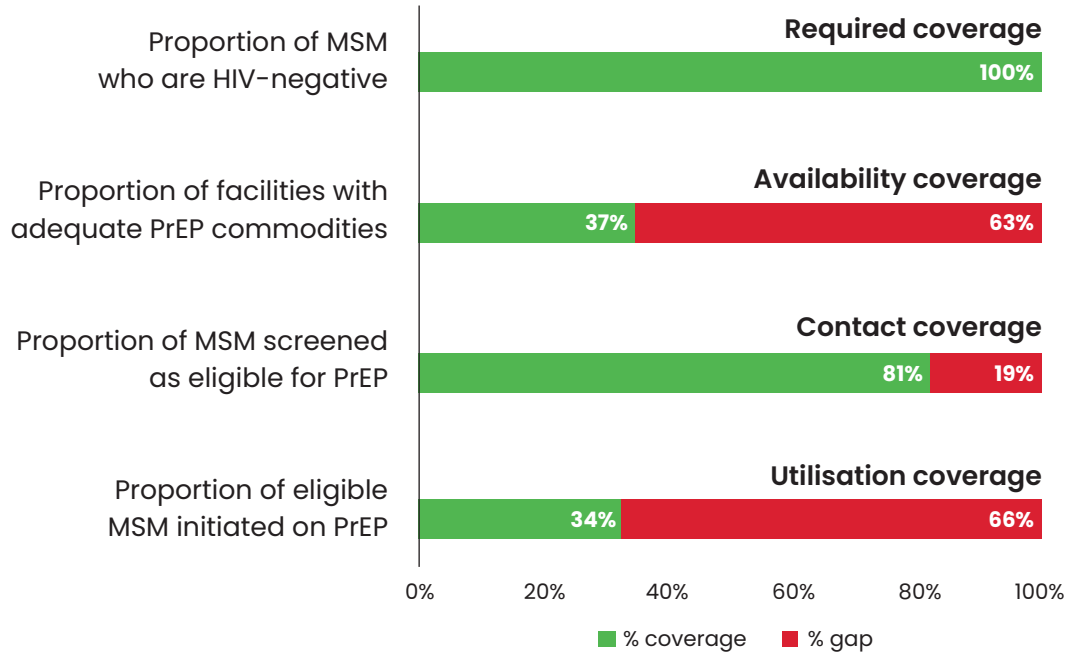


of eligible female sex workers were not initiated on PrEP, leading to a utilisation gap.

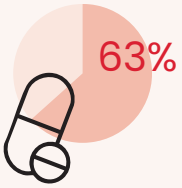
The programme for female sex workers needs to focus on addressing the availability and utilisation coverage gaps for PrEP.

PrEP COVERAGE CASCADE AMONG MEN WHO HAVE SEX WITH MEN

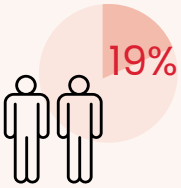
Figure 14: PrEP coverage cascade among men who have sex with men, FY 2023/24



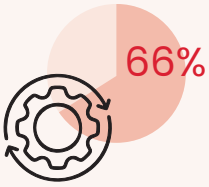
Major gaps identified:



of facilities did not have adequate availability of PrEP commodities.



of men who have sex with men who came to the clinic were not screened for PrEP eligibility by healthcare workers.

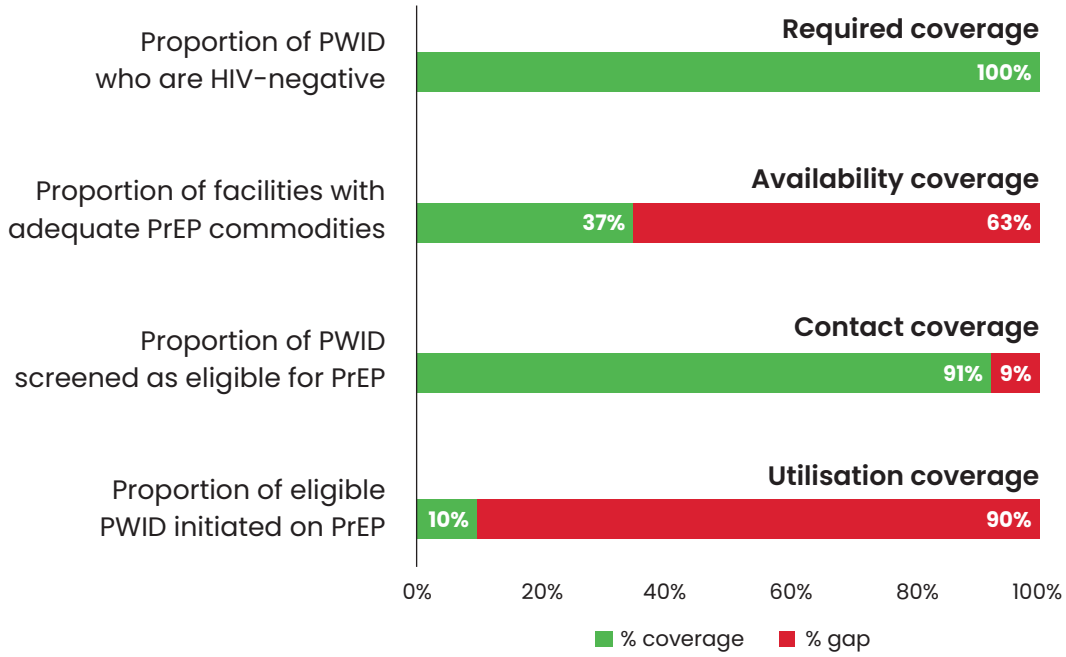


of eligible men who have sex with men were not initiated on PrEP, causing a utilisation gap.

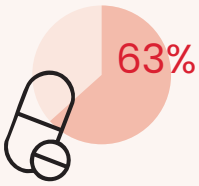
The programme for men who have sex with men should focus on addressing availability and utilisation coverage gaps for PrEP.

PrEP COVERAGE CASCADE AMONG PEOPLE WHO INJECT DRUGS

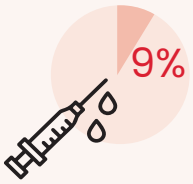
Figure 15: PrEP coverage cascade among people who inject drugs, FY 2023/24



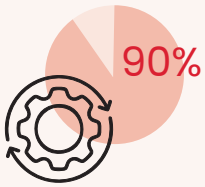
Major gaps identified:



of health facilities used by people who inject drugs did not have adequate availability of PrEP commodities.



of people who inject drugs who came to the clinic were not screened for PrEP eligibility by healthcare workers.



of eligible people who inject drugs were not initiated on PrEP, causing a utilisation coverage gap.

The programme for people who inject drugs should focus on addressing availability and utilisation coverage gaps for PrEP.

Research questions

The following research questions were suggested to help find solutions to the identified gaps:

1. What programmatic innovations would ensure access to adequate supply of PrEP for key population members?
2. What are the perceptions of key population members about PrEP effectiveness?
3. How do economic constraints and mobility impact PrEP uptake among key population members?
4. What are the most effective strategies to increase PrEP initiation and utilisation among key population members?

5.1.1.4 ART programming among key populations

In Kenya, identification of key population members living with HIV and ART coverage for key populations is suboptimal. However, as of June 2024, all of the identified key population members living with HIV had started on ART, and nearly all of them were virally suppressed, as shown in Table 2.

Table 2: Percentages of the estimated number of key population members living with HIV who have been identified, who are on ART, and who were virally suppressed, Kenya, June 2024

	% of the estimated KPLHIV identified	% of identified KPLHIV started on ART	% of those on ART virally suppressed
FSW	50%	100%	98%
MSM	52%	100%	98%
PWID	19%	100%	99%
TG	17%	100%	98%

Target: The Kenya key population guidance documents recommend that 100% of key populations living with HIV should be enrolled and initiated on ART. Hence the required ART coverage is the estimated number of key population members living with HIV.

In the case of Kenya, the estimated numbers of key population members living with HIV are

66,074 female sex workers	**12,746** men who have sex with men	**2,427** people who inject drugs	**961** transgender people

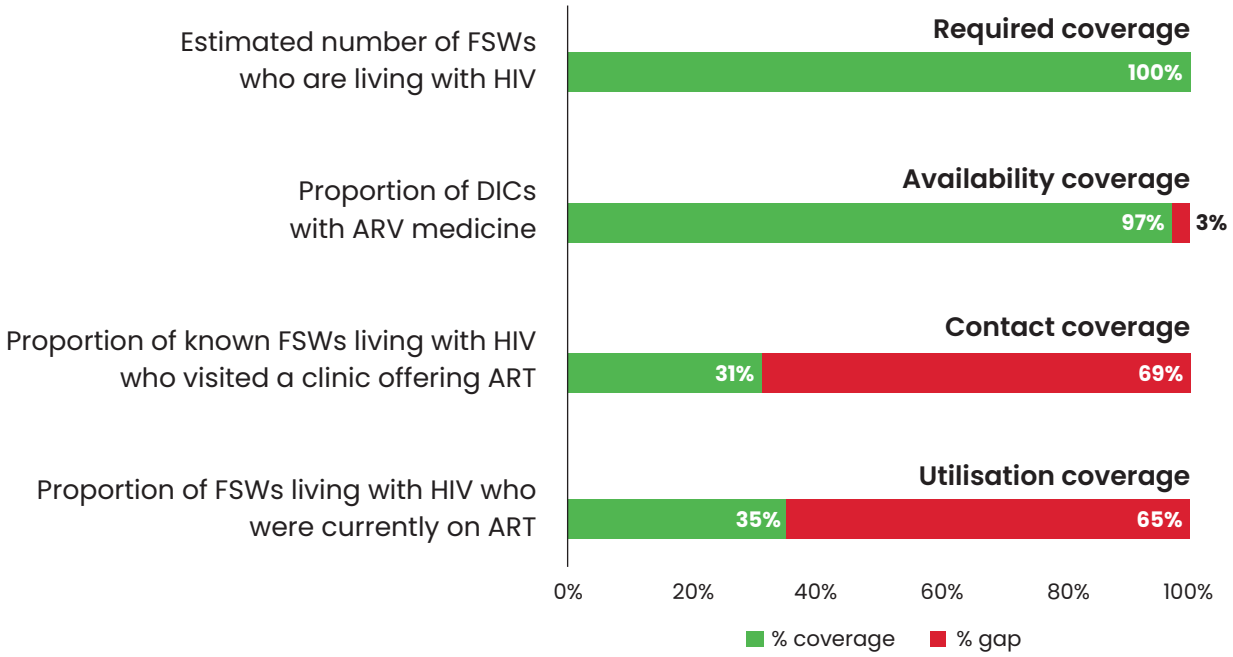
The following assumptions were made to develop the ART coverage cascades:

- Number of key population members on ART was used as a proxy of those who know their HIV status.
- Viral suppression was calculated based on those on ART.[10]

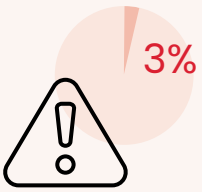
[10] These assumptions were also made when calculating ART coverage cascades for pregnant women (Section 5.1.2.2), high-risk adolescent girls and young women (Section 5.1.3.3), and high-risk adolescent boys and young men (Section 5.1.3.6).

ART COVERAGE CASCADE AMONG FEMALE SEX WORKERS

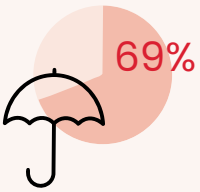
Figure 16: ART coverage cascade among female sex workers, FY 2023/24



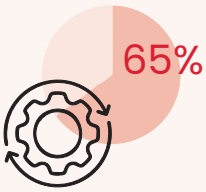
Major gaps identified:



of DICs reported non-availability of ART drugs.



of female sex workers living with HIV had not come in contact with a clinic offering ART services.

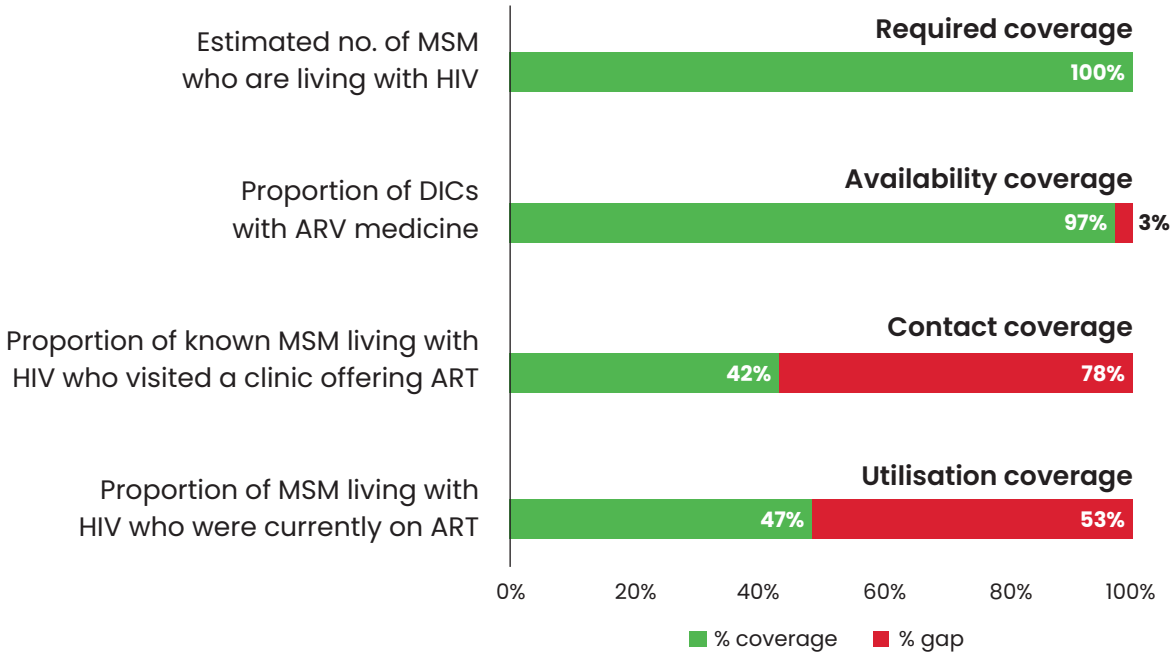


of female sex workers living with HIV were not utilising ART.

Programmes for female sex workers should focus on improving contact and utilisation coverage for ART.

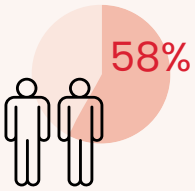
ART COVERAGE CASCADE AMONG MEN WHO HAVE SEX WITH MEN

Figure 17: ART coverage cascade among men who have sex with men, FY 2023/24

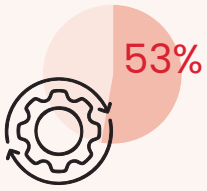


Major gaps identified:

of DICs have unavailability of ART.



of men living with HIV who have sex with men had not been in contact with a clinic offering ART services.

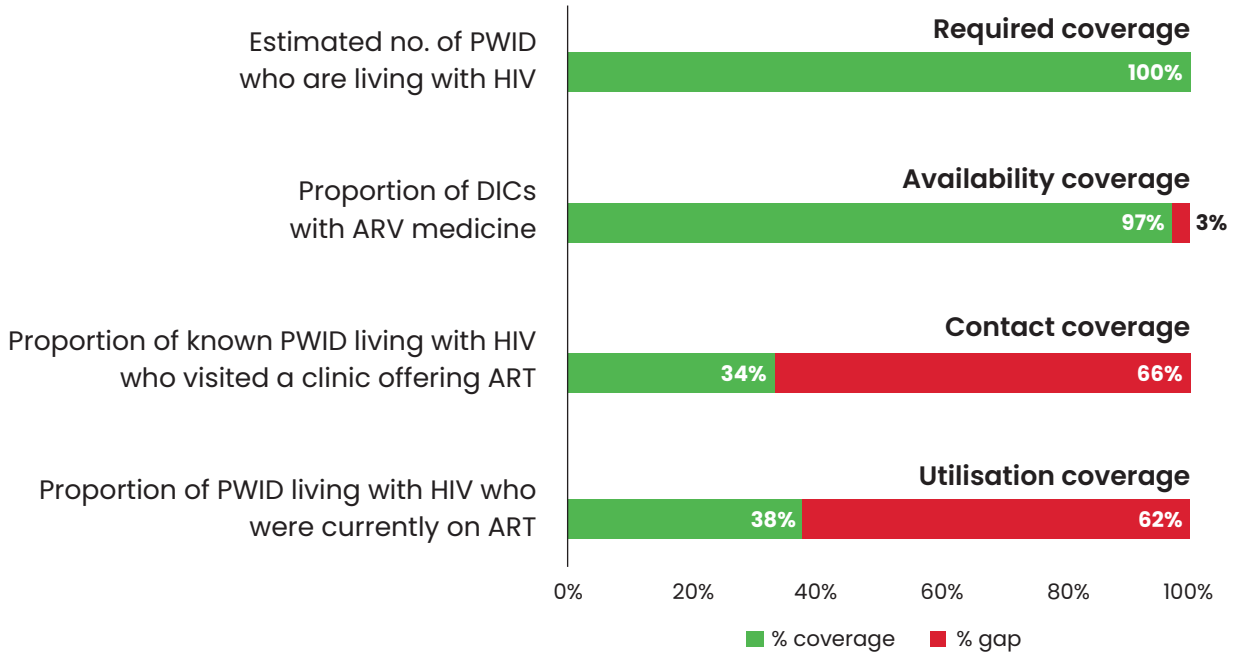


of men living with HIV who have sex with men were not utilising ART.

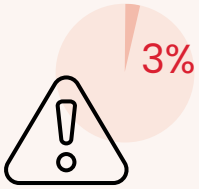
The men who have sex with men programme needs to focus on reducing the contact and utilisation coverage gaps for ART

ART COVERAGE CASCADE AMONG PEOPLE WHO INJECT DRUGS

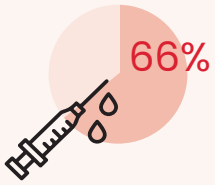
Figure 18: ART coverage cascade among people who inject drugs, FY 2023/24



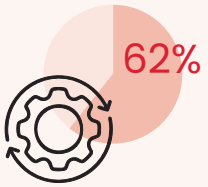
Major gaps identified:



of DICs had unavailability of ART.



of people who inject drugs living with HIV were not in contact with a clinic offering ART services.

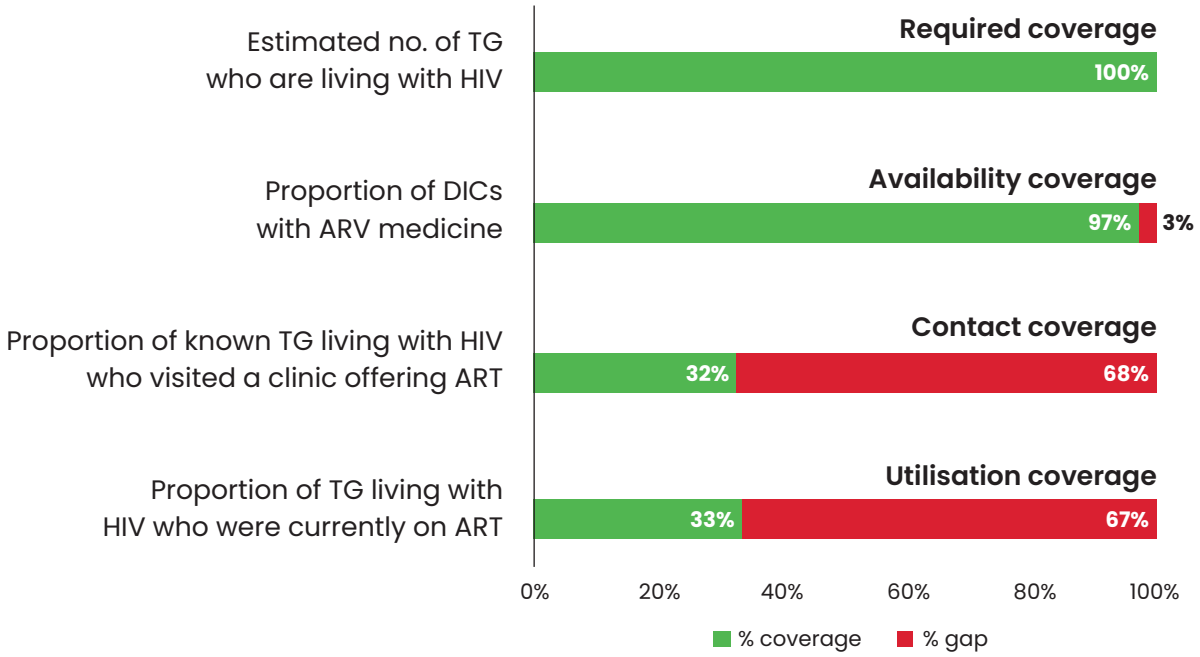


of people who inject drugs living with HIV were not utilising ART.

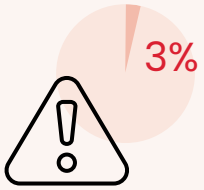
The programme for people who inject drugs should focus on reducing the contact and utilisation coverage gaps for ART.

ART COVERAGE CASCADE AMONG TRANSGENDER PEOPLE

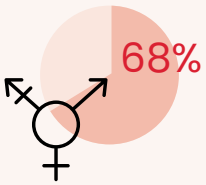
Figure 19: ART coverage cascade among transgender people, FY 2023/24



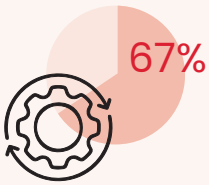
Major gaps identified:



of DICs had unavailability of ART.



of transgender people living with HIV were not in contact with a clinic offering ART services.



of transgender people living with HIV were utilising ART.

The transgender people programme should focus on addressing contact and availability coverage gaps for ART.

Research questions

The following questions were suggested to help find solutions to the identified gaps:

1. Are the identified gaps due to incorrect data or weaknesses in data systems for key population members?
2. Are key populations accessing ART services in public health facilities and hence are not identified as key populations and are not tracked through the key population monitoring systems?
3. Why is there information mismatch between KHIS data and BBS data in relation to treatment cascades?
4. What barriers are key population members facing in accessing ART at stand-alone DICs?
5. What barriers are key population DICs facing in tracking key populations living with HIV and registered in their DIC, but not taking ART in the DICs?
6. What programmatic innovations in community outreach would be more effective for key population members?
7. What integration models into existing health services would be most effective for key population members?

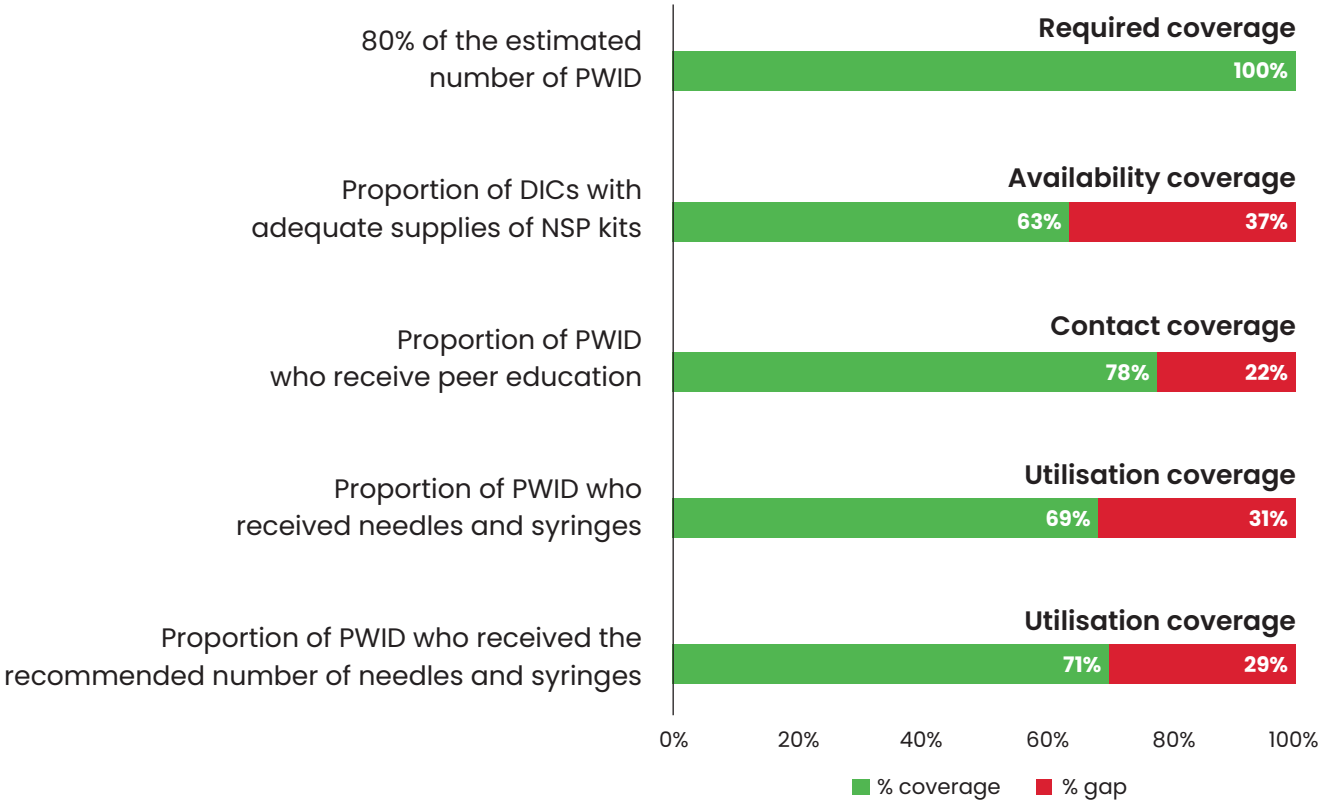
5.1.1.5 NSP coverage cascade among people who inject drugs

Needle and Syringe Programmes (NSPs) are a critical component of harm reduction strategies in Kenya, particularly aimed at reducing HIV and other blood-borne infections among people who inject drugs. These programmes are designed to work within Kenya's legal and policy frameworks, often navigating complex issues related to drug use and criminalisation. International guidelines (WHO) recommend distributing at least 200 sterile needles and syringes per person who injects drugs per year to effectively reduce HIV transmission.[11] In Kenya, new needles and syringes are largely provided by peer educators during outreach to the people who inject drugs.

Target: As per Kenya key population guidelines, 80% of estimated people who inject drugs should be targeted for needle and syringe programme.

[11] World Health Organization. 2012. WHO, UNODC, UNAIDS technical guide for countries to set targets for universal access to HIV prevention, treatment and care for injecting drug users. 2012 Revision. Geneva: World Health Organization.

Figure 20: NSP coverage cascade among people who inject drugs, FY 2023/24



Major gaps identified:

37%

of DICs did not have adequate supply of NSP kits.

22%

of people who inject drugs did not have contact with a peer educator and hence may have not received new needles and syringes.

29%

of people who inject drugs did not receive the recommended number of needles and syringes and hence had utilisation gaps.

The programme for people who inject drugs needs to focus on reducing the availability, contact, and utilisation coverage gaps, clearly prioritising consistent availability of NSP kits in DICs.

Research questions

The following research questions were suggested to help find solutions to the identified gaps:

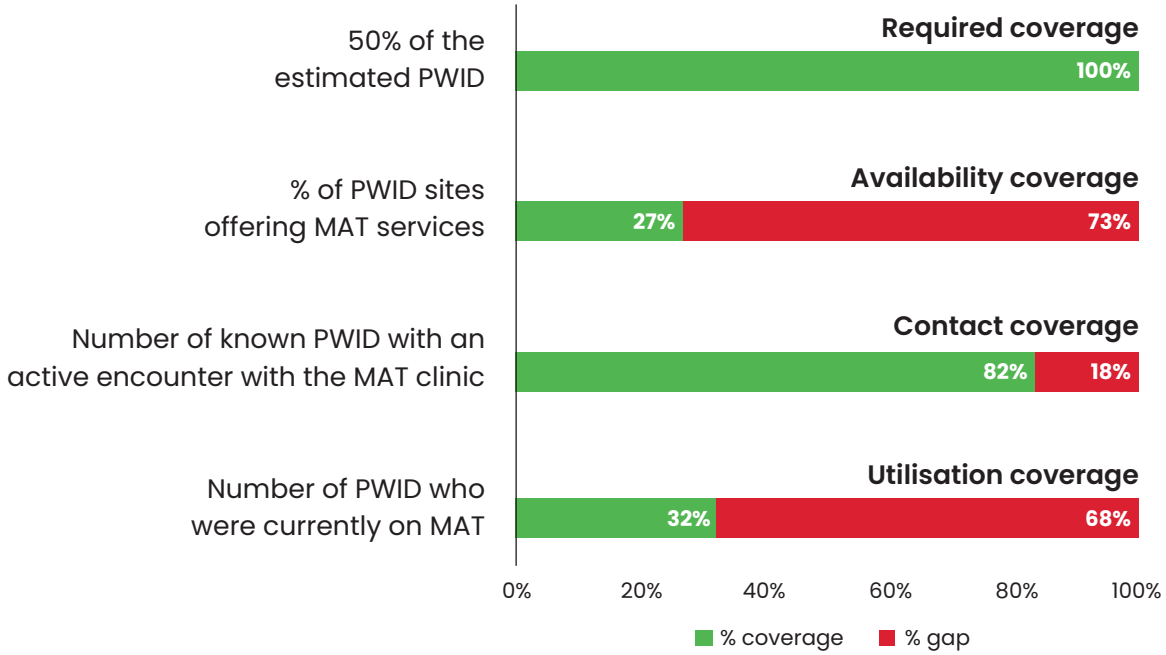
1. What are the key barriers limiting the availability and distribution of NSP supplies?
2. What operational changes are necessary to bridge the shortfall in NSP availability?
3. What service delivery models would be most effective to increase contact and utilisation coverage of NSP?
4. How can the programme ensure effective utilisation of new needles and syringes among people who inject drugs?

5.1.1.6 MAT/OST coverage cascade among people who inject drugs

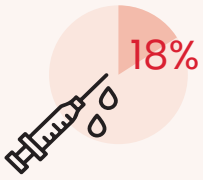
Drug abuse and substance use disorders have emerged as a critical public health challenge in Kenya, with far-reaching health, economic, and social consequences. Among the most affected groups are people who inject drugs, who face heightened vulnerability to blood-borne infections such as HIV and hepatitis C. Globally, Methadone-Assisted Therapy (MAT) has proven to be an effective, evidence-based approach to addressing opioid use disorder. By combining medication like methadone with psychosocial support, MAT significantly reduces opioid dependency, prevents relapses, improves physical and mental health outcomes, and fosters social reintegration. There are 14 MAT clinics in Kenya, distributed in seven counties. People who inject drugs are counselled by the implementing partners who offer NSP services and are referred to the MAT clinic. In most cases the entry point to the MAT clinic for people who inject drugs is through the DIC clinic managed by implementing partners.

Target: The key population national guidelines target 50% of estimated people who inject drugs in the country for the MAT programme.

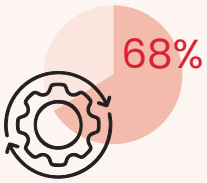
Figure 21: MAT/OST coverage cascade among people who inject drugs, FY 2023/24



Major gaps identified:



of people who inject drugs did not come in contact with a DIC clinic.



of people who inject drugs who require MAT were not utilising MAT.

The MAT programme should focus on reducing the utilisation coverage gaps among people who inject drugs.

Research questions

The following research questions were suggested to help find solutions to the identified gaps:

1. What are the factors that affect contact and utilisation coverage for MAT services among people who inject drugs?
2. What MAT service delivery models would be most effective to increase utilisation coverage for people who inject drugs?
3. What structural and policy-related issues affect the expansion of MAT services?

5.1.2 Pregnant women and children

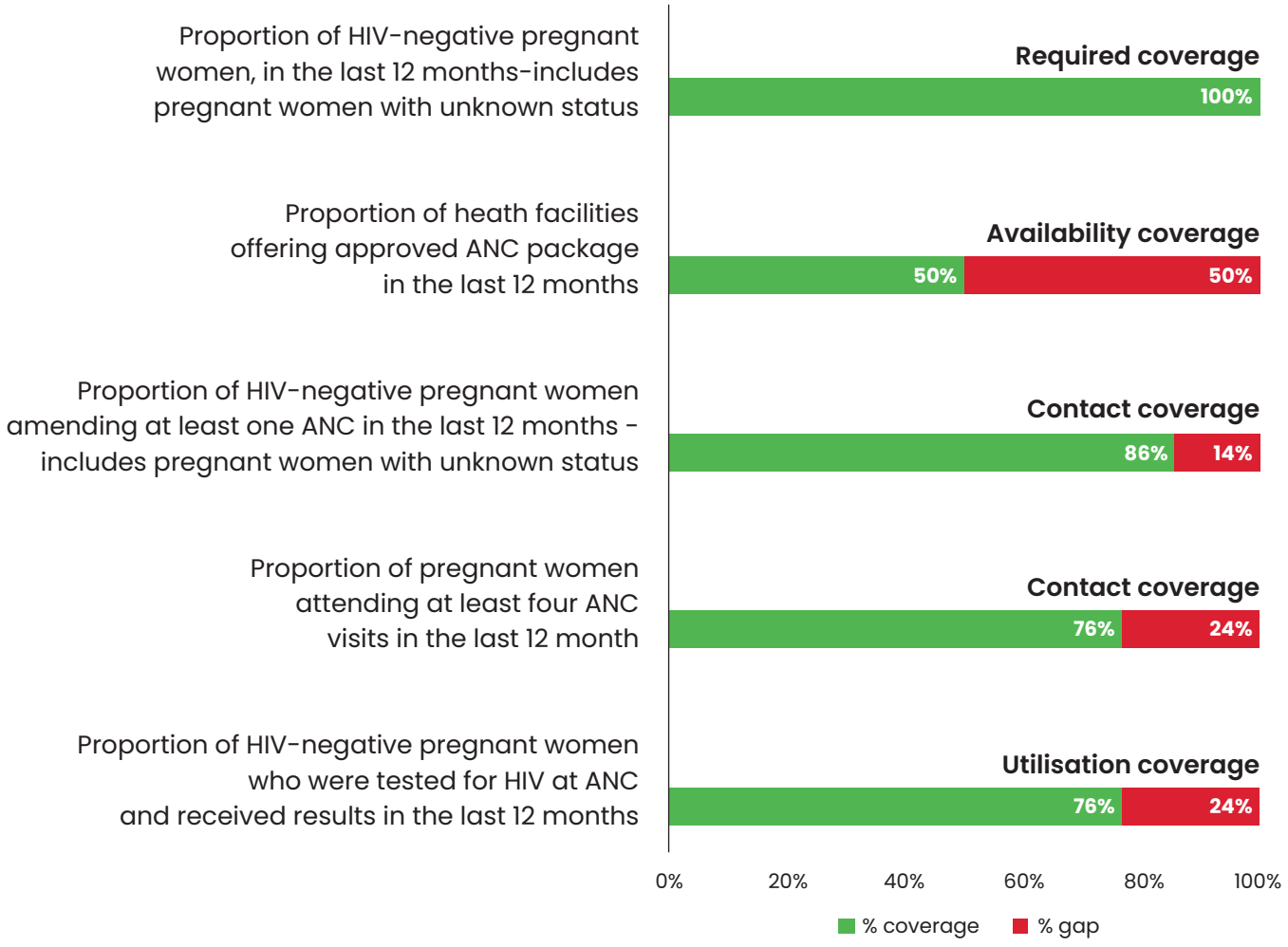
Antenatal care (ANC) is the care of the woman during pregnancy. The primary aim of ANC is to achieve a healthy mother and a healthy baby at the end of the pregnancy. Vertical transmission of HIV is the primary mode of HIV infection to infants. Transmission can occur during pregnancy, birth, and breastfeeding periods. It is recommended that mothers living with HIV and infants with perinatal HIV exposure receive appropriate prevention services based on existing national guidelines.

5.1.2.1 HIV testing coverage cascade among pregnant and lactating mothers

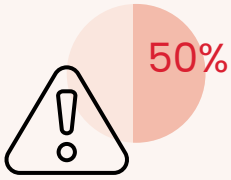
HIV testing for pregnant and breastfeeding mothers is important because it helps to identify infants at risk of vertical transmission of HIV. The earlier HIV is detected, the sooner treatment can start, which is better for both the mother and the baby. To achieve this, it is recommended that all pregnant women undergo HIV testing at first ANC contact in the first trimester, at the third trimester, during labour and delivery, six weeks post-natal, and then after every six months until complete cessation of breastfeeding.

Target: Nationally, the target for HIV testing among pregnant women attending antenatal care visits is 95% of all estimated pregnant women.

Figure 22: Prevention of Mother-To-Child Transmission Programme, HIV testing coverage cascade, FY 2023/24

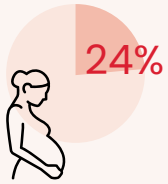


Major gaps identified:

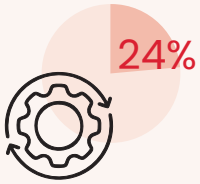


of health facilities did not offer the prescribed ANC package to pregnant mothers.

of pregnant women did not come in contact with any ANC services during pregnancy.



of pregnant women did not attend four prescribed ANC visits during pregnancy.



of pregnant women were not tested for HIV at ANC and given their result, thus leading to a huge utilisation coverage gap.

The following research questions were suggested to help find solutions to the identified gaps:

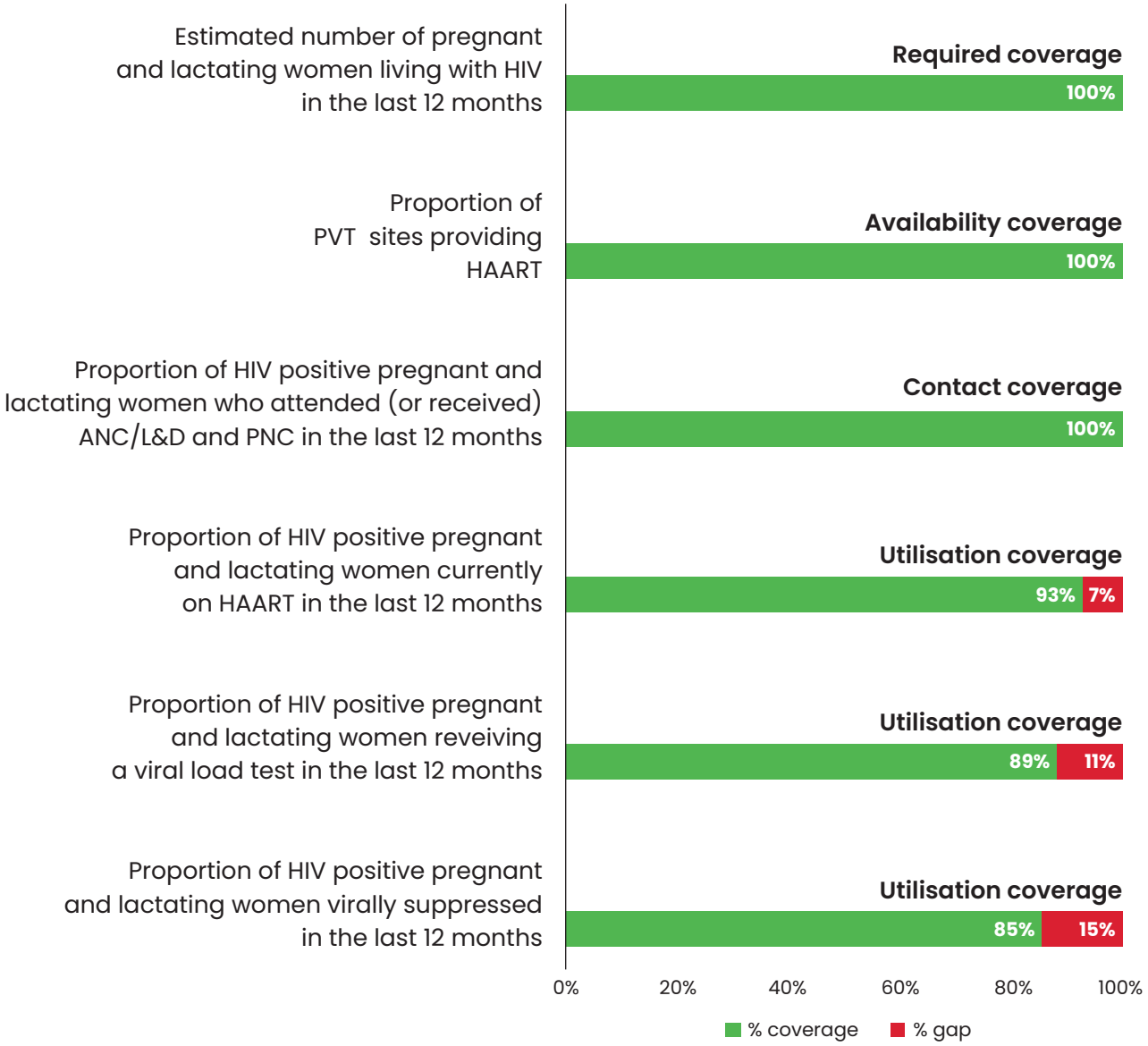
1. What factors contribute to the inability of health facilities to offer the prescribed ANC package to pregnant women attending ANC services?
2. What factors contribute to suboptimal uptake of ANC services by pregnant women (describe who, where, and why)?
3. What factors contribute to suboptimal HIV testing and reporting of results during pregnancy and breastfeeding (describe who, where, and why)?

5.1.2.2 Maternal highly active antiretroviral therapy coverage cascade

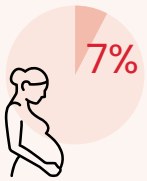
All pregnant and lactating women living with HIV should initiate antiretroviral therapy as early in pregnancy as possible, regardless of their viral load or CD4 count, to maximise their health and prevent perinatal HIV transmission and secondary sexual transmission. ART is provided to the pregnant women through the designated PMTCT sites.

Target: Nationally, the target for initiation of HIV-positive women on HAART is 95% of all pregnant women living with HIV.

Figure 23: Prevention of Mother-to-Child Transmission Programme, HAART coverage cascade, FY 2023/24



Major gaps identified:



of pregnant and lactating women living with HIV were not on HAART.

of pregnant and lactating women living with HIV did not have a viral load test.

of pregnant and lactating women living with HIV were not virally suppressed.

The programme needs to focus on utilisation coverage, as availability and contact coverage are 100%.

Research questions

The following research questions were suggested to help find solutions to the identified gaps:

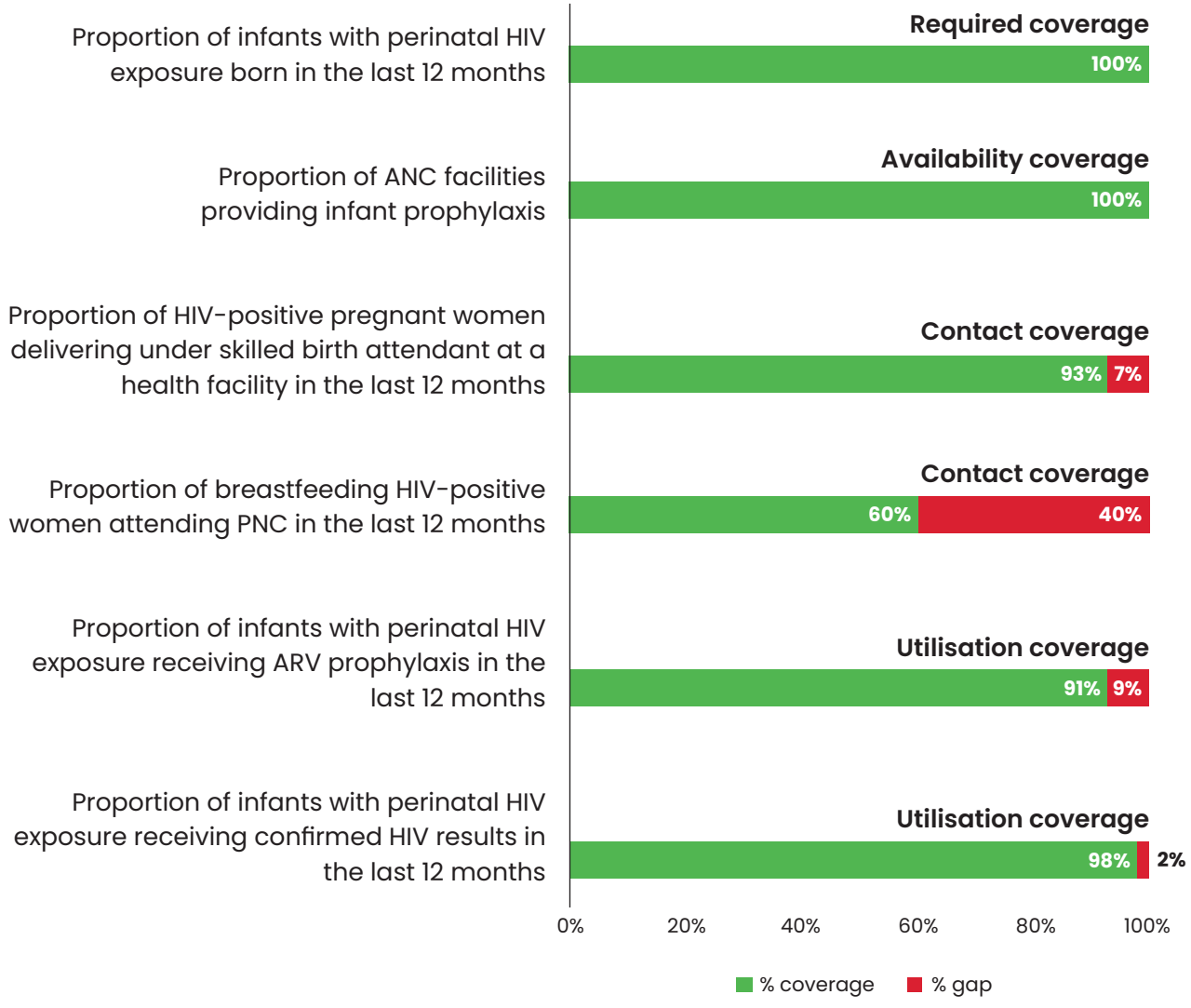
1. What factors contribute to pregnant women living with HIV to fail to initiate HAART (who, where, and why)?
2. What are the reasons pregnant women living with HIV who initiate HAART fail to maintain undetectable viral loads?
3. What are the service quality issues and other factors contributing to ANC facilities' failure to perform viral load tests for HIV treatment?
4. Explore PVT data systems to identify data quality and completeness issues.

5.1.2.3 Prophylaxis for infants with perinatal HIV exposure coverage cascade

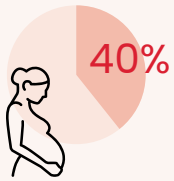
Antiretroviral prophylaxis for infants with perinatal HIV exposure is critical for reducing the risk of vertical transmission in the immediate post-partum period. All newborns perinatally exposed to HIV should receive appropriate post-exposure prophylaxis (PEP) as soon as possible after delivery, preferably within six hours, per the national guidelines.

Target: Nationally, the target for initiation of HIV-exposed infants (HEIs) on infant prophylaxis is 95% of all infants living with HIV.

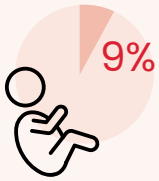
Figure 24: Prevention of Mother-to-Child Transmission Programme, infant prophylaxis coverage cascade, FY 2023/24



Major gaps identified:



of breastfeeding HIV-positive women did not attend PNC.



of HIV-exposed infants were not on any ARV prophylaxis, reducing utilisation coverage.

The programme needs to focus on utilisation coverage, as availability and contact coverage are 100%.

Research questions

The following research questions were suggested to help find solutions to the identified gaps:

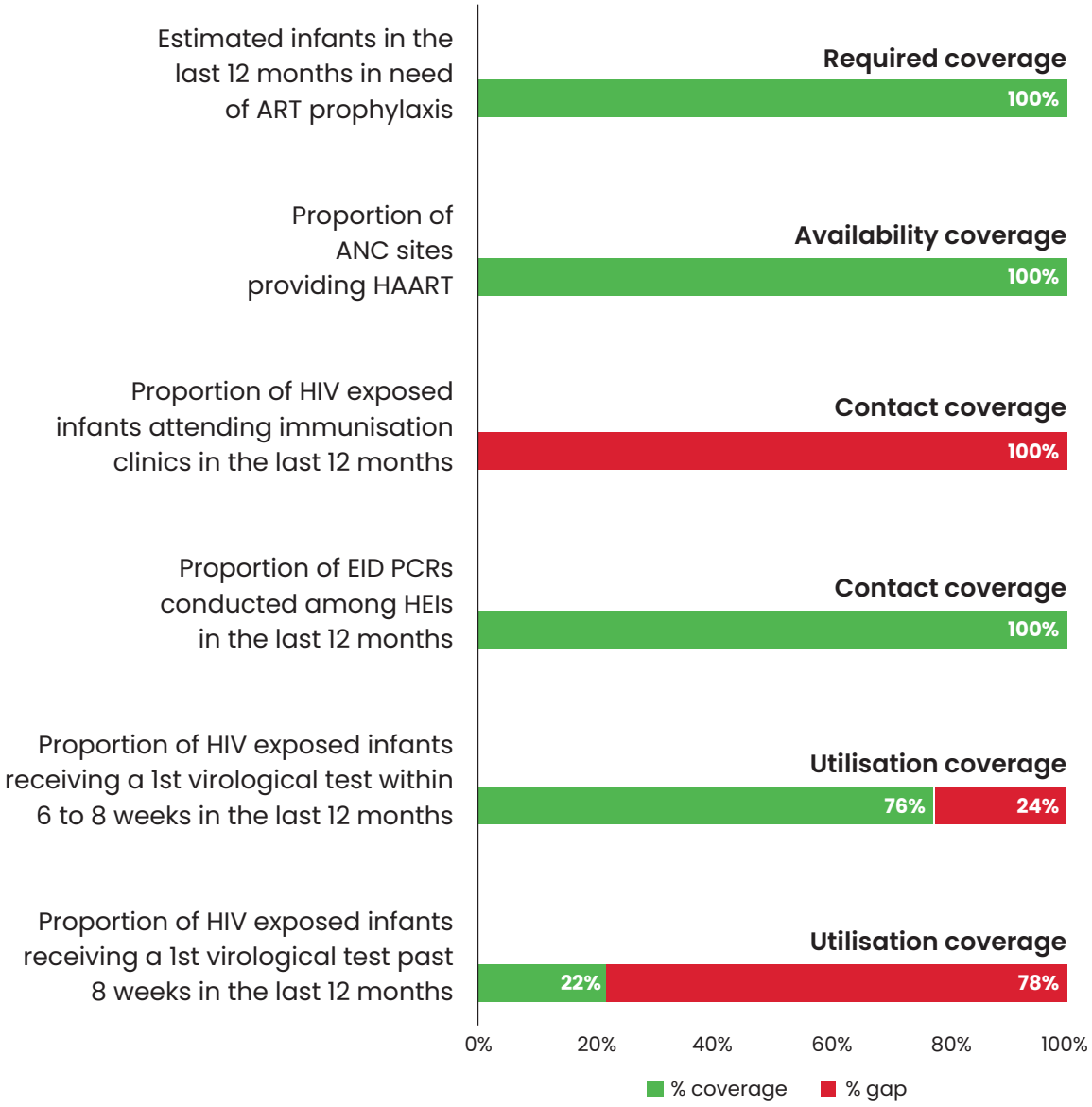
1. What are the factors contributing to suboptimal infant prophylaxis, describing who, where, and why?
2. What are the factors contributing to 40% of breastfeeding HIV-positive women not attending PNC, describing who, where, and why?
3. Investigate data completeness and quality issues.

5.1.2.4 Early infant diagnosis coverage cascade

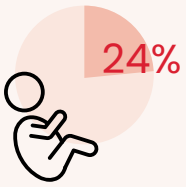
Early infant diagnosis (EID) for HIV is recommended for all HIV-exposed infants. In Kenya, it is recommended that infants with perinatal HIV exposure must have their EID performed using polymerase chain reaction (PCR) techniques at four to six weeks of age, at six months, and at 12 months, and a confirmatory test at 18 months through antibody test. EID is critical for timely initiation of antiretroviral treatment for HIV-positive children, who are at high mortality risk.

Target: Nationally, the target for HIV testing among HEIs between six and eight weeks is 90% of all infants born to women living with HIV.

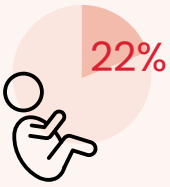
Figure 25: Prevention of Mother-to-Child Transmission Programme, early infant diagnosis coverage cascade, FY 2023/24



Major gaps identified:



of infants with perinatal HIV-exposure missed having their first PCR diagnostic test conducted between the recommended six to eight weeks after birth.



of infants with perinatal HIV-exposure had their first PCR test conducted after eight weeks of age, outside the recommended six to eight week period.

The programme needs to prioritise reducing utilisation coverage gaps.

Gaps exist in the disaggregation of data for HEIs accessing immunisation services at the facility level.

Research questions

The following research questions to help find solutions to the identified gaps:

1. What are the factors contributing to suboptimal EID testing within the recommended six to eight weeks after birth? Clarify who these mother/baby pairs are, where they are in the country, and what the reasons are for suboptimal EID testing.
2. The EID PCR tests are more than the number of HEI. What are the factors that could contribute to this discrepancy? Is it data quality issues (e.g., double counting of the same HEIs in subsequent periods)?
3. We have 22% of HEI getting their first virological test after eight weeks. Who are these mother/baby pairs, why are they being tested late, and where in the country are they found?

5.1.3 Adolescents and young people

The Adolescents and Young People (AYP) Programme in Kenya is a national initiative designed to improve the health, wellbeing, and socio-economic outcomes of individuals aged 10–24 years. It is implemented through a multisectoral approach involving government agencies, civil society organisations, community structures, and development partners.

Adolescents and young people between 15 and 24 years old contribute 39% of new HIV infections in the country,[12] hence they are a priority population for interventions. The national programme for adolescents and young people focuses on the following interventions: condom and lubricant programming; pre-exposure prophylaxis programming; HIV prevention communication, information and demand creation; care and treatment; sexual and reproductive health services; differentiated HIV testing services; elimination of vertical transmission of HIV, syphilis, and viral hepatitis; removing human rights-related barriers to prevention; and social protection interventions. The interventions are provided through wellness centres, youth friendly centres, health facilities, and through community structures during outreaches or peer-to-peer activities.

Key areas identified for adolescents and young people gaps analysis are HIV testing, pre-exposure prophylaxis, and antiretroviral therapy. Gaps for adolescent girls and young women were identified separately from those of adolescent boys and young men.

According to UNAIDS Population Size Estimates of 2024, Kenya has total population of 5,100,540 adolescent girls and young women aged 15–24 years, of which 2,612,436 are at heighted risk of HIV. The total number of adolescent girls and young women aged 15–24 living with HIV is 96,687. The estimated total population of adolescent boys and young men aged 15–24 is 5,048,466, of which 2,139,072 are at heighted risk of HIV. The total number of adolescent boys and young men aged 15–24 living with HIV is 41,202.

For high-risk adolescent girls and young women, the HTS, ART, and PrEP utilisation coverage targets were calculated as follows:

The HTS programme utilisation coverage target is the number of HIV-negative high-risk adolescent girls and young women, which is 2,515,749.

The utilisation coverage target for ART is the number of adolescent girls and young women who are living with HIV, which is 96,687.

And 5% of the HIV-negative high-risk adolescent girls and young women (i.e., 5% of 2,515,749) is the utilisation coverage target for PrEP. This comes to 125,787.

For high-risk adolescent boys and young men, the HTS, ART, and PrEP utilisation coverage targets were calculated as follows:

The utilisation coverage target for the HTS programme is the number of HIV-negative high-risk adolescent boys and young men, which is 2,097,870.

The utilisation coverage target for ART is the number of adolescent boys and young men who are living with HIV, which is 41,202.

And 5% of the HIV-negative high-risk adolescent boys and young men (i.e., 5% of 2,097,870) is the utilisation coverage target for PrEP. This comes to 104,894.

Sixteen counties contribute 58% of the high-risk adolescent girls and young women, and interventions are prioritised for these counties.

[12] National Syndemic Diseases Control Council. 2024. The Kenya HIV Modes of Transmission Study: Report 2024. Nairobi: National Syndemic Diseases Control Council.

According to UNAIDS, "High-risk adolescent girls and young women and high-risk adolescent boys and men" are defined as those with behaviours, circumstances, or social conditions that significantly increase their likelihood of acquiring HIV, such as

- being sexually active;
- having one cohabiting partner (higher risk if male partner has other partners or older);
- having non-regular partners (higher risk with multiple partners, older partners or history of STIs); or
- experiencing paid sex, injection of drugs, history of STI, sexual violence.

The programme needs to identify and focus on this high-risk subpopulation. Services for adolescent girls and young women and adolescent boys and young men are provided through the public health system and nongovernmental organisations through programmes like DREAMS. However, the reporting tools for the comprehensive adolescent and young people programme are not nationally driven, hence the data is not available at national level except the public facility data. Hence this analysis used the KHIS data reported by the public health facilities.

5.1.3.1 HIV testing coverage cascade among adolescent girls and young women

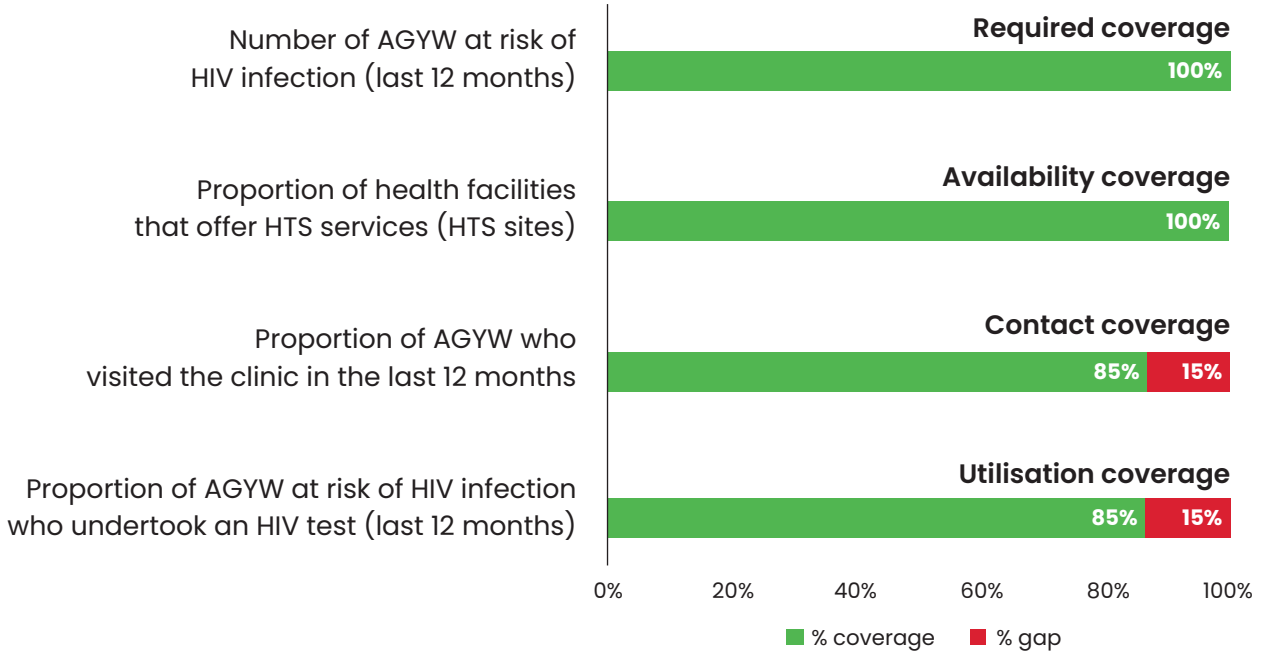
Kenya's AIDS Strategic Framework II (KASF II, 2020–2025) recommends universal access to HIV testing and related services for all age groups, with an explicit focus on youth-friendly responsive approaches. These align with the UNAIDS 95-95-95 targets, aiming to ensure that 95% of people living with HIV know their status, 95% of those diagnosed receive sustained antiretroviral therapy, and 95% on treatment achieve viral suppression.

Effective HIV testing programmes for adolescent girls and young women integrate biomedical interventions with behavioral, social, and structural components, including counselling, peer mentorship, and economic empowerment, to address barriers and sustain engagement.

Adolescent girls and young women can access rapid HIV test kits from health facilities and self-testing kits from peer educators or health facilities. Through the population size estimates from UNAIDS, adolescent girls and young women who are at high risk in Kenya have been identified, and interventions including HIV testing are provided in the counties and subcounties where they are. The testing modalities for adolescent girls and young women include wellness / youth friendly centres, and HIV self-tests distributed through community-based channels, health facilities, outreaches, and peer-supported pathways.

Target: All estimated adolescent girls and young women at risk of HIV and those with unknown HIV status should test for HIV annually.

Figure 26: Adolescent Girls and Young Women Programme, HIV testing coverage cascade, FY 2023/24



The following gaps were identified:

- There are major gaps in data systems, with no ability to segregate data for HIV screening generated at designated health facilities from reported data generated from outside health facilities.
- Data on self-testing by use of self-test kits is not captured.

To better understand the identified gaps, it was suggested to fix the data gaps and use the correct data to assess gaps.

5.1.3.2 PrEP programming coverage cascade among adolescent girls and young women

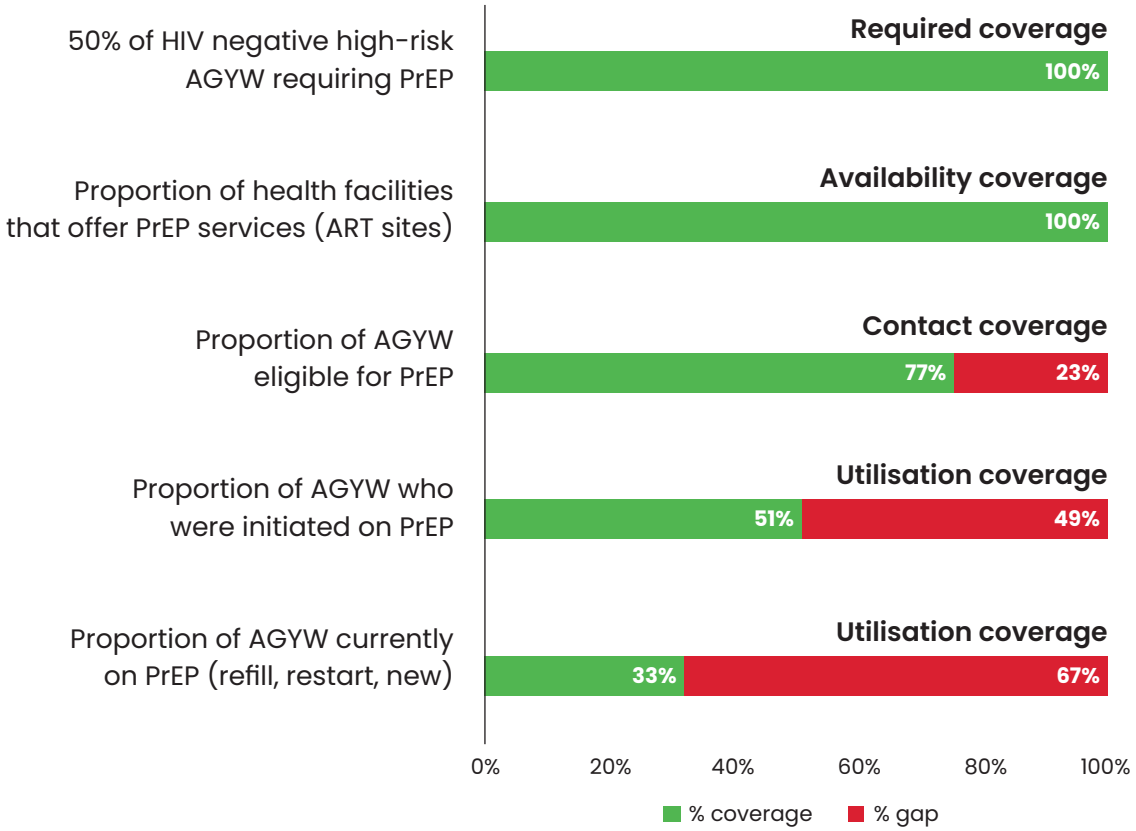
In 2017, Kenya's roll-out of PrEP prioritised high-risk populations. According to UNAIDS and WHO guidance, adolescent girls and young women aged 15–24 years who are at substantial risk of HIV infection are prioritised for PrEP.

To make PrEP accessible for high-risk adolescent girls and young women, PrEP delivery was integrated with regular healthcare services accessed by adolescent girls and young women, including maternal and child health and family planning clinics.

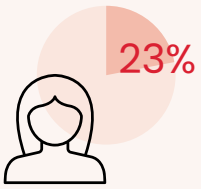
High-risk adolescent girls and young women are typically identified through individual risk assessments conducted at health facilities or community outreach programmes, using standardised screening tools that assess behavioural and structural risk factors.

Target: 5% of adolescent girls and young women who are at risk of HIV and do not have a known HIV status should be targeted for PrEP in counties with moderate or high HIV.

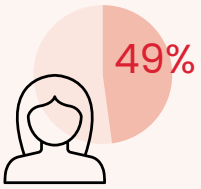
Figure 27: Adolescent Girls and Young Women Programme, PrEP uptake coverage cascade, FY 2023/24



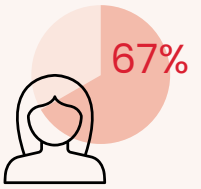
The major gaps identified include:



of adolescent girls and young women were not eligible for PrEP.



of adolescent girls who are at risk of HIV acquisition were not initiated on PrEP, thus increasing the utilisation gap.



of adolescent girls who are at risk of HIV acquisition are not currently utilising PrEP.

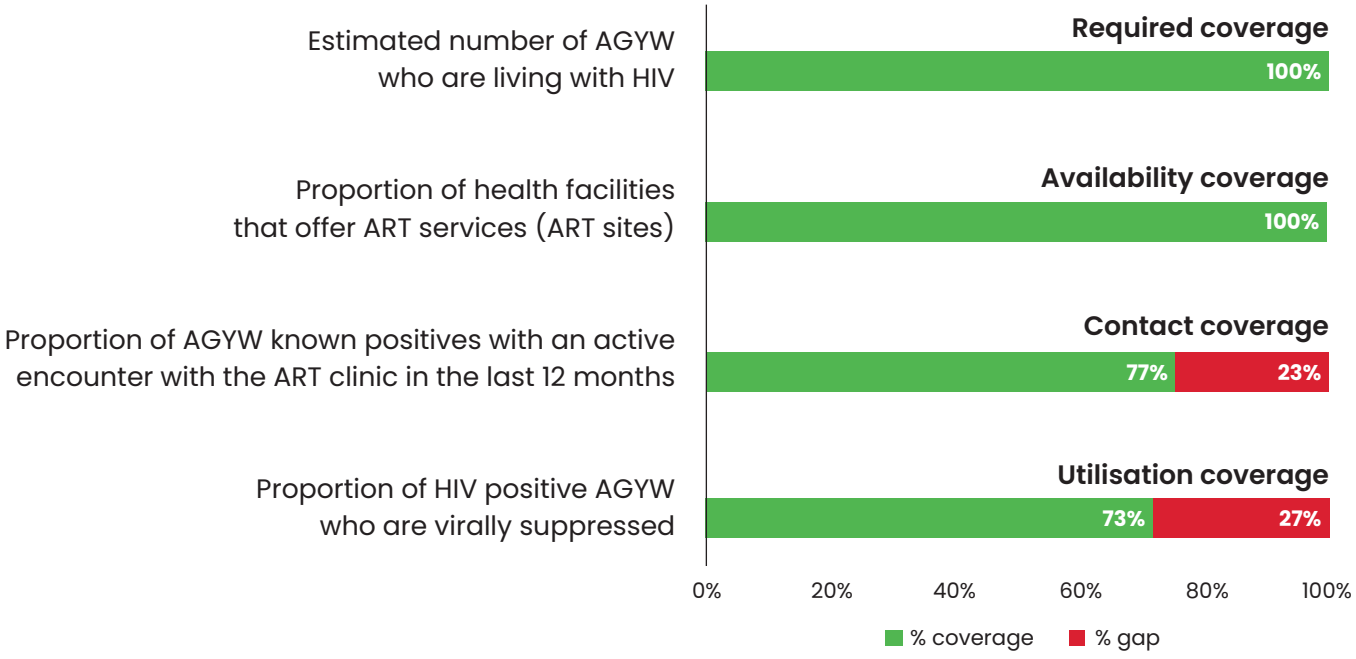
The programme needs to address the contact and utilisation coverage gaps for PrEP.

5.1.3.3 ART coverage cascade among adolescent girls and young women

Kenya HIV treatment guidelines recommend that all adolescent girls and young women testing positive for HIV immediately initiate long-acting antiretroviral therapy for better health outcome.

Target: All adolescent girls and young women living with HIV should be registered in the ART programme.

Figure 28: Adolescent Girls and Young Women Programme, ART uptake coverage cascade, FY 2023/24



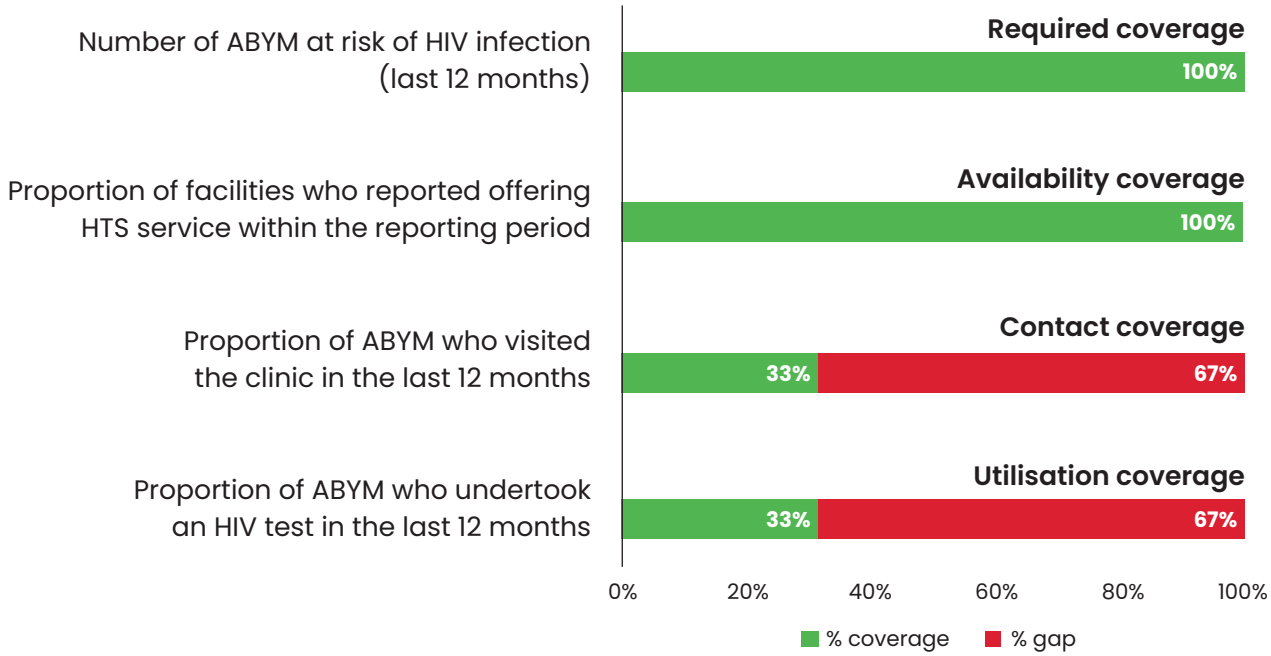
The major gap identified is suboptimal 77% uptake of ART by eligible adolescent girls and young women. To address this gap, the programme needs to undertake KAP studies across the HIV combination prevention interventions with adolescent girls and young women.

5.1.3.4 HIV testing coverage cascade among adolescent boys and young men

Adolescent boys and young men have lower rates of HIV testing than some other groups, due to many factors that influence testing uptake. The HIV testing services for this population are largely provided through the public health system.

Target: All estimated adolescent boys and young men at risk of HIV and those with unknown HIV status should test for HIV annually.

Figure 29: Adolescent Boys and Young Men Programme, HIV testing coverage cascade, FY 2023/24



Major gaps identified in HIV testing for adolescent boys and young men include the following:

- Very low uptake of HIV testing services by adolescent boys and young men according to the official KHIS data reporting system.
- Data gaps, with no ability to segregate HIV screening tests at health facilities from screening done outside formal health facilities.
- A lot of self-screening using self-testing kits purchased at private pharmacies takes place, and this data is not captured through KHIS.

Proposed solutions to the identified gaps:

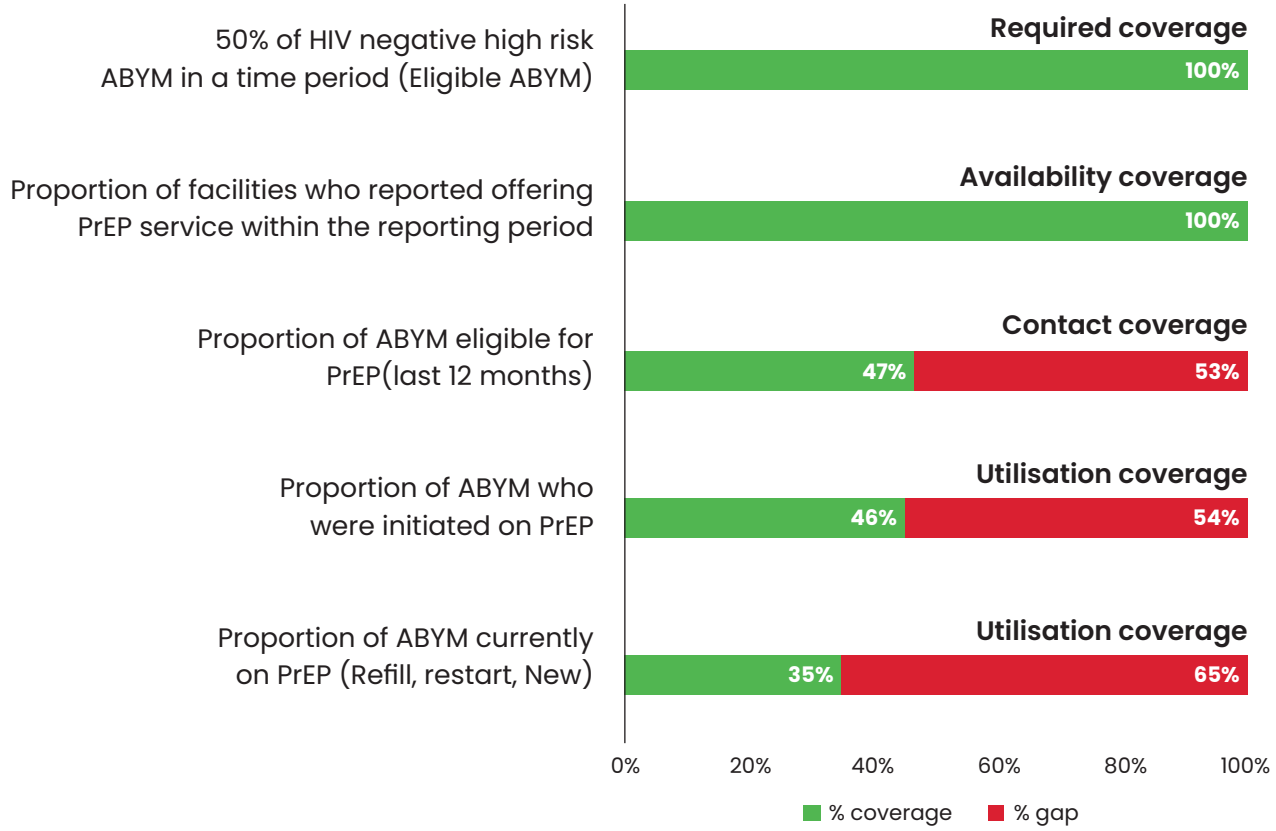
- The programme needs to fix the data gaps.
- Undertake KAP studies with adolescent boys and young men on HIV testing.

5.1.3.5 PrEP programming coverage cascade among adolescent boys and young men

In 2017, Kenya began rolling out PrEP, prioritising high-risk populations, including adolescent boys and young men. PrEP delivery has been integrated into regular healthcare services accessed by adolescent boys and young men. The *Framework for the Implementation of Pre-exposure Prophylaxis of HIV in Kenya,* 2022, outlines how PrEP should be implemented across the county. Despite the effort done on PrEP, challenges in accessing PrEP still exist, translating to new HIV infections.

Target: 5% of adolescent boys and men who are at risk of HIV and do not have a known HIV status should be targeted for PrEP in counties with moderate and high HIV prevalence/ incidence.

Figure 30: Adolescent Boys and Young Men Programme, PrEP uptake coverage cascade, FY 2023/24



Major gap identified:

- Suboptimal uptake of PrEP among adolescent boys and young men.

To address this gap, the programme needs to

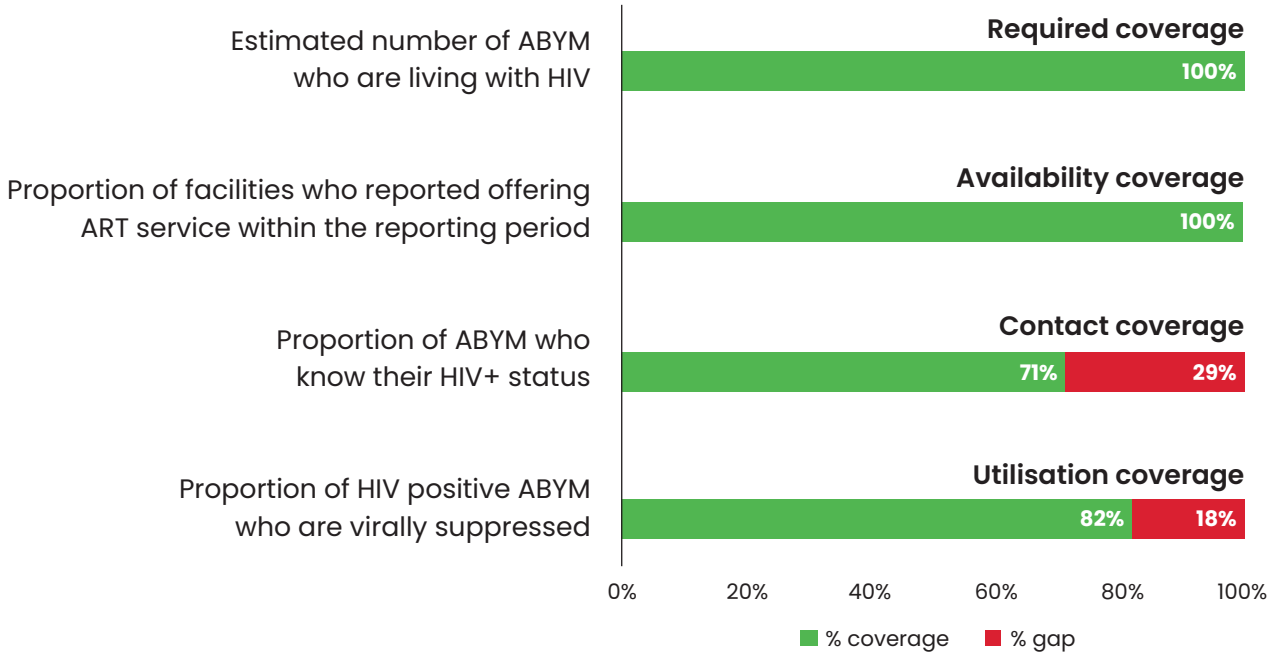
- fix all data incompleteness and quality issues and
- undertake KAP studies on PrEP with adolescent boys and young men.

5.1.3.6 ART coverage cascade among adolescent boys and young men

Kenya HIV treatment guidelines recommend that all adolescent boys and young men testing positive for HIV immediately initiate long-acting antiretroviral therapy for better health outcome.

Target: All adolescent boys and young men living with HIV should be registered in the ART programme.

Figure 31: Adolescent Boys and Young Men Programme, ART uptake coverage cascade, FY 2023/24



Major gap identified:

- Uptake of ART among adolescent boys and young men is suboptimal.

To address this gap, the programme needs to undertake KAP studies across the HIV combination prevention interventions with adolescent boys and young men.

5.1.3.7 VMMC coverage cascade among adolescent boys and young men

The Voluntary Medical Male Circumcision (VMMC) Programme in Kenya, initiated in 2008, is a key HIV prevention intervention that reduces female-to-male HIV transmission risk by approximately 60%. The programme is anchored in Kenya's AIDS Strategic Framework (KASF II, 2020/21–2024/25) and continues as a high-priority intervention within the broader HIV prevention portfolio.

Kenya's VMMC initiative targets 12 priority counties: Turkana, Kisumu, Migori, Siaya, Homa Bay, Mombasa, Nairobi, Busia, West Pokot, Nandi, Nakuru, and Kericho.

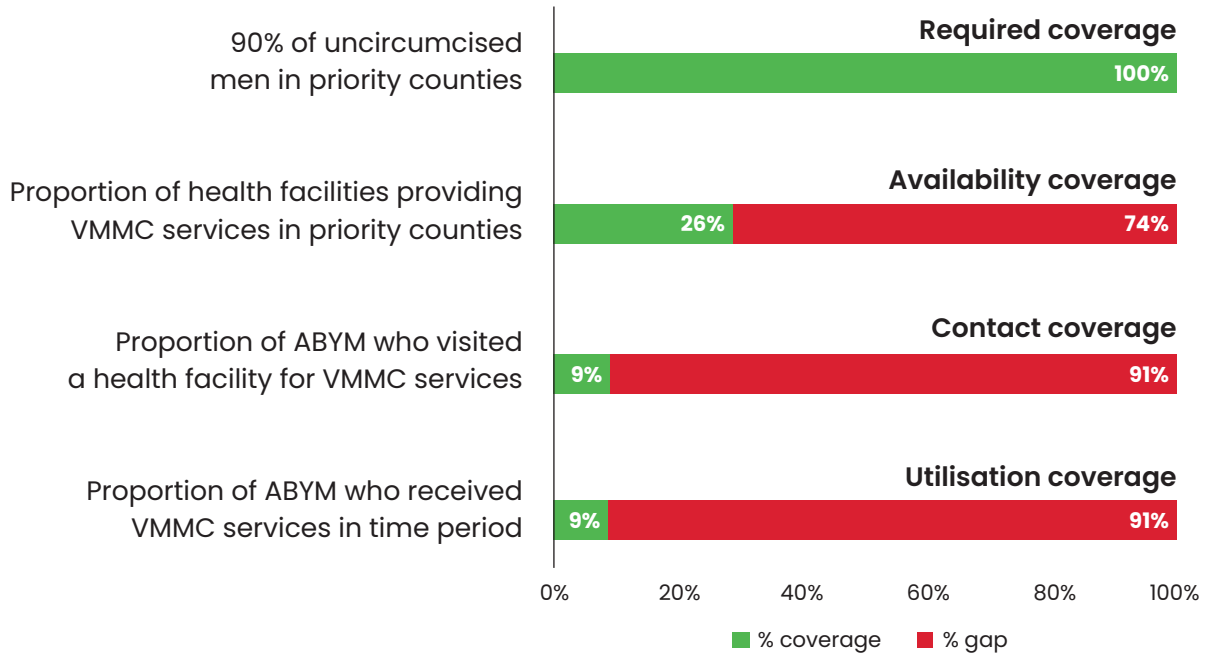
The historic target for VMCC has been adolescents aged 15–19 years old. Tailored approaches include male-friendly clinics, after-hours services, privacy-enhanced environments, and interpersonal communication campaigns.

Kenya is transitioning from mass VMMC campaigns to hybrid service delivery models integrated into routine outpatient care. VMMC services are often co-delivered with HIV testing services, PrEP initiation, condom distribution, STI screening, and counselling. Surgical circumcision remains standard, with WHO-prequalified devices such as the ShangRing used in select facilities.

Target: 90% of uncircumcised adolescent boys and young men should receive VMMC services.

The following assumptions were made for the development of coverage cascades:
- The data used was from the 12 priority counties.
- The data for uncircumcised boys and men in the priority counties was from the latest population based survey. This was considered as required coverage.

Figure 32: Adolescent Boys and Young Men Programme, VMMC coverage cascade, FY 2023/24



The following gaps were identified on the uptake of VMMC services:

- 74% of the health facilities did not provide VMMC services.
- 91% of uncircumcised adolescent boys and young men did not come in contact with a facility for VMMC.
- 91% of the uncircumcised adolescent boys and young men did not utilise VMMC services.
- The VMMC programme should focus on addressing availability, contact and utilisation coverage gaps among adolescent boys and young men.
- Low utilisation of VMMC services in priority non-circumcising counties.

5.1.3.8 Research questions

In summary, there are several converging themes in the gaps that are common between adolescent girls and young women and adolescent boys and young men, which include:

- How do adolescents and young people access HIV testing services?
- What are the reasons for the lack of interest in PrEP among adolescents and young people?
- What are the knowledge, attitudes, and perceptions of adolescents and young people towards PrEP initiation and continuation?
- What are the factors that prevent health workers from motivating adolescent girls and young women to initiate PrEP even if they are eligible?
- What are the reasons for suboptimal uptake and adherence to ART services among adolescents and young people?
- What are the barriers that prevent adolescents and young people from accessing clinical services?
- What are the challenges in relation to providing VMMC services in public health facilities?
- How can VMMC services be integrated within public health facilities?
- What are the barriers to utilisation of VMMC services by adolescent boys and young men?
- What are the knowledge, attitudes, and perceptions related to VMMC among adolescent boys and young men?

5.2 PLENARY DISCUSSIONS AND WAY FORWARD: FACILITATED BY PARINITA BHATTACHARJEE

The group sessions conducted throughout the workshop offered a valuable opportunity to operationalise the effective programme coverage framework. These sessions clearly demonstrated the framework's utility, highlighting priority coverage domains that need improvement to inform the development of more targeted and impactful interventions for various subpopulations. Through this interactive process, teams were able to identify critical coverage at various domains—including availability, contact, and utilisation—that require prioritisation and solutioning. The discussions also emphasised further nuanced exploration to help in solutioning:

People: Who is being left out or left behind (e.g., specific subpopulations like high-risk adolescent girls and young women, young sex workers)?

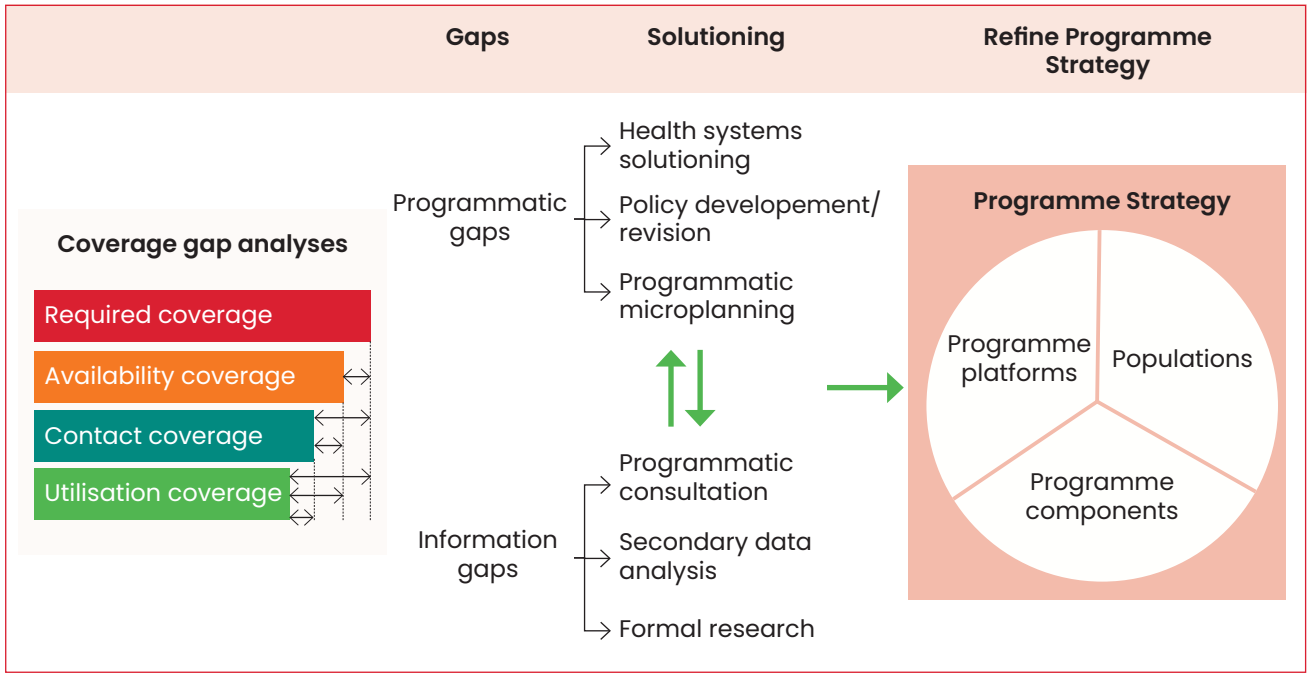
Places: Which geographic areas are being left behind (e.g., is it a specific subcounty or a specific facility) that need focus and planning to improve coverage?

Programme components: How and when should new interventions be integrated (and for whom), and should any interventions be deprioritised (and for whom) to improve coverage?

Platforms: Are current service delivery models for HIV ensuring high coverage of populations with needed services or are new models of service delivery needed, like integration with public health facilities or pharmacy-driven services?

Identification of the gaps is the starting point for solutioning (Figure 33). The solutioning could be at the policy level, health system level, or implementation level. In addition, more information may have to be collected through focused research to find answers for some of the identified barriers and gaps. Such insights highlight the importance of anchoring planning processes in science-driven frameworks that help in refining the programme strategy to enhance the population level impact of the programme.

Figure 33: Coverage gap analysis guides solutioning for programme strategy refinement



5.2.1 The way forward

1. Apply effective programme coverage framework at county level on a routine basis.
   - Incorporate Programme Science approach into County Operation/Implementation Plans.
   - Consider the development of a dedicated reporting tool to monitor utilisation of Programme Science approach at national and county level.
2. Incorporate Programme Science into national strategic planning documents:
   - The Kenya Syndemic Diseases Strategic Framework
   - The County Syndemic Diseases Operations Plans
3. Integrate gaps analysis into existing programme monitoring and evaluation activities, such as supervisory visits and service/data quality assessments.
4. Allocate budget for implementation of an embedded Programme Science approach to programming.

5.3 CLOSING REMARKS

Dr. Murugi thanked all participants for their contributions, highlighting the workshop as a valuable opportunity to integrate research into programme settings for improved programming. She acknowledged the team's strong commitment and expressed appreciation to the PHDA team for logistical support, the scientists for their key insights, the data team for ensuring data readiness, the county teams, UNAIDS, the Global Fund, NASCOP, and the rapporteurs. She emphasised the importance of discussing sustainability and ensuring efficiency in programme implementation. She stressed the need to integrate and embed the workshop's work within existing programmes.

ANNEXES

ANNEX 1: COVERAGE CASCADE INDICATORS AND DEFINITIONS

HIV testing indicators and definitions for female sex workers

Indicator	Definition
Required coverage	Proportion of FSWs who require HIV testing
Availability coverage	Proportion of health facilities or DICs with adequate HIV test kits
Contact coverage	Proportion of FSWs receiving clinical services
Utilisation coverage	Proportion of FSWs tested for HIV

HIV testing indicators and definitions for men who have sex with men

Indicator	Definition
Required coverage	Proportion of MSM requiring HIV testing
Availability coverage	Proportion of health facilities or DICs with adequate HIV test kits
Contact coverage	Proportion of MSM receiving clinical services
Utilisation coverage	Proportion of MSM tested for HIV

HIV testing indicators and definitions for people who inject drugs

Indicator	Definition
Required coverage	Proportion of PWID who require HIV testing
Availability coverage	Proportion of health facilities or DICs with adequate HIV test kits
Contact coverage	Proportion of PWID receiving clinical services
Utilisation coverage	Proportion of PWID tested for HIV

HIV testing indicators and definitions for transgender people

Indicator	Definition
Required coverage	Proportion of TG who require HIV testing
Availability coverage	Proportion of health facilities or DICs with adequate HIV test kits
Contact coverage	Proportion of TG receiving clinical services
Utilisation coverage	Proportion of TG tested for HIV

Condom coverage indicators and definitions for female sex workers

Indicator	Definition
Required coverage	Estimated no. of FSWs
Availability coverage	Proportion of DICs with adequate stock of condoms
Contact coverage	Proportion of FSWs who received peer education
Utilisation coverage	Proportion of FSWs who received condoms according to their need

Condom coverage indicators and definitions for men who have sex with men

Indicator	Definition
Required coverage	Estimated no. of MSM
Availability coverage	Proportion of DICs with adequate stock of condoms
Contact coverage	Proportion of MSM who received peer education on condom use
Utilisation coverage	Proportion of MSM who received condoms according to their need

Condom coverage indicators and definitions for people who inject drugs

Indicator	Definition
Required coverage	Estimated no. of PWID
Availability coverage	Proportion of DICs with adequate stock of condoms
Contact coverage	Proportion of PWID who received peer education on condom use
Utilisation coverage	Proportion of PWID who received condoms according to their need

Condom coverage indicators and definitions for transgender people

Indicator	Definition
Required coverage	Estimated no. of TG
Availability coverage	Proportion of DICs with adequate stock of condoms
Contact coverage	Proportion of TG who received peer education on condom use
Utilisation coverage	Proportion of TG who received condoms according to their need

PrEP programming indicators and definitions for female sex workers

Indicator	Definition
Required coverage	Proportion of FSWs who are HIV-negative
Availability coverage	Proportion of facilities with adequate PrEP commodities
Contact coverage	Proportion of FSWs screened as eligible for PrEP
Utilisation coverage	Proportion of eligible FSWs initiated on PrEP

PrEP programming indicators and definitions for men who have sex with men

Indicator	Definition
Required coverage	Proportion of MSM who are HIV-negative
Availability coverage	Proportion of facilities with adequate PrEP commodities
Contact coverage	Proportion of MSM screened as eligible for PrEP
Utilisation coverage	Proportion of eligible MSM initiated on PrEP

PrEP programming indicators and definitions for people who inject drugs

Indicator	Definition
Required coverage	Proportion of PWID who are HIV-negative
Availability coverage	Proportion of facilities with adequate PrEP commodities
Contact coverage	Proportion of PWID screened as eligible for PrEP
Utilisation coverage	Proportion of eligible PWID initiated on PrEP

ART indicators and definitions for female sex workers

Indicator	Definition
Required coverage	Estimated number of FSWs who are living with HIV
Availability coverage	Proportion of DICs with ARV medicine
Contact coverage	Proportion of known FSWs living with HIV who visited a clinic offering ART
Utilisation coverage	Proportion of FSWs living with HIV who were currently on ART

ART indicators and definitions for men who have sex with men

Indicator	Definition
Required coverage	Estimated number of MSM who are living with HIV
Availability coverage	Proportion of DICs with ARV medicine
Contact coverage	Proportion of known MSM living with HIV who visited a clinic offering ART
Utilisation coverage	Proportion of MSM living with HIV who were currently on ART

ART indicators and definitions for people who inject drugs

Indicator	Definition
Required coverage	Estimated number of PWID who are living with HIV
Availability coverage	Proportion of DICs with ARV medicine
Contact coverage	Proportion of known PWID living with HIV who visited a clinic offering ART
Utilisation coverage	Proportion of PWID living with HIV who were currently on ART

ART indicators and definitions for transgender people

Indicator	Definition
Required coverage	Estimated number of TG who are living with HIV
Availability coverage	Proportion of DICs with ARV medicine
Contact coverage	Proportion of known TG living with HIV who visited a clinic offering ART
Utilisation coverage	Proportion of TG living with HIV who were currently on ART

NSP programming coverage indicators and definitions

Indicator	Definition
Required coverage	80% of the estimated number of PWID
Availability coverage	Proportion of DICs with adequate supplies of NSP kits
Contact coverage	Proportion of PWID who receive peer education
Utilisation coverage	Proportion of PWID who received needles and syringes
Utilisation coverage	Proportion of PWID who received the recommended number of needles and syringes

MAT programming coverage indicators and definitions

Indicator	Definition
Required coverage	50% of the estimated PWID
Availability coverage	Percentage of PWID sites offering MAT services
Contact coverage	Number of known PWID with an active encounter with the MAT clinic
Utilisation coverage	Number of PWID who were currently on MAT

PMTCT coverage indicators and definitions for pregnant women, HTS

Indicator	Definition
Required coverage	Proportion of HIV-negative pregnant women, in the last 12 months – includes pregnant women with unknown status
Availability coverage	Proportion of health facilities offering approved ANC package in the last 12 months
Contact coverage	Proportion of HIV-negative pregnant women attending at least one ANC in the last 12 months – includes pregnant women with unknown status
	Proportion of pregnant women attending at least four ANC visits in the last 12 months
Utilisation coverage	Proportion of HIV-negative pregnant women who were tested for HIV at ANC and received results in the last 12 months

PMTCT coverage indicators and definitions for pregnant women, HAART

Indicator	Definition
Required coverage	Estimated number of pregnant and lactating women living with HIV in the last 12 months
Availability coverage	Proportion of PVT sites providing HAART
Contact coverage	Proportion of HIV positive pregnant and lactating women who attended (or received) ANC/L&D and PNC in the last 12 months
Utilisation coverage	Proportion of HIV positive pregnant and lactating women currently on HAART in the last 12 months
	Proportion of HIV positive pregnant and lactating women receiving a viral load test in the last 12 months
	Proportion of HIV positive pregnant and lactating women virally suppressed in the last 12 months

PMTCT coverage indicators and definitions, prophylaxis for infants with perinatal HIV exposure

Indicator	Definition
Required coverage	Proportion of infants with perinatal HIV exposure born in the last 12 months
Availability coverage	Proportion of ANC facilities providing infant prophylaxis
Contact coverage	Proportion of HIV-positive pregnant women delivering under skilled birth attendant at a health facility in the last 12 months
	Proportion of breastfeeding HIV-positive women attending PNC in the last 12 months
Utilisation coverage	Proportion of infants with perinatal HIV exposure receiving ARV prophylaxis in the last 12 months
	Proportion of infants with perinatal HIV exposure receiving confirmed HIV results in the last 12 months

PMTCT coverage indicators and definitions, early infant diagnosis

Indicator	Definition
Required coverage	Estimated infants in the last 12 months in need of ART prophylaxis
Availability coverage	Proportion of ANC sites providing HAART
Contact coverage	Proportion of HIV exposed infants attending immunisation clinics in the last 12 months
Utilisation coverage	Proportion of EID PCRs conducted among HEIs in the last 12 months
	Proportion of HIV exposed infants receiving a 1st virological test within 6 to 8 weeks in the last 12 months
	Proportion of HIV exposed infants receiving a 1st virological test past 8 weeks in the last 12 months

AGYW programming coverage indicators and definitions, HTS

Indicator	Definition
Required coverage	Number of AGYW at risk of HIV infection (last 12 months)
Availability coverage	Proportion of health facilities that offer HTS services (HTS sites)
Contact coverage	Proportion of AGYW who visited the clinic in the last 12 months
Utilisation coverage	Proportion of AGYW at risk of HIV infection who undertook an HIV test (last 12 months)

AGYW programming coverage indicators and definitions, PrEP

Indicator	Definition
Required coverage	5% of HIV-negative high-risk AGYW requiring PrEP
Availability coverage	Proportion of health facilities that offer PrEP services (ART sites)
Contact coverage	Proportion of AGYW eligible for PrEP
Utilisation coverage	Proportion of AGYW who were initiated on PrEP
	Proportion of AGYW currently on PrEP (Refill, restart, New)

AGYW programming coverage indicators and definitions, ART

Indicator	Definition
Required coverage	Estimated number of AGYW who are living with HIV
Availability coverage	Proportion of health facilities that offer ART services (ART sites)
Contact coverage	Proportion of AGYW known positives with an active encounter with the ART clinic in the last 12 months
Utilisation coverage	Proportion of HIV positive AGYW who virally suppressed

ABYM programming coverage indicators and definitions, HTS

Indicator	Definition
Required coverage	Number of ABYM at risk of HIV infection (last 12 months)
Availability coverage	Proportion of facilities who reported offering HTS service within the reporting period
Contact coverage	Proportion of ABYM who visited the clinic in the last 12 months
Utilisation coverage	Proportion of ABYM who undertook an HIV test in the last 12 months

ABYM programming coverage indicators and definitions, PrEP

Indicator	Definition
Required coverage	50% of HIV negative high risk ABYM in a time period (Eligible ABYM)
Availability coverage	Proportion of facilities who reported offering PrEP service within the reporting period
Contact coverage	Proportion of ABYM eligible for PrEP (last 12 months)
Utilisation coverage	Proportion of ABYM who were initiated on PrEP
	Proportion of ABYM currently on PrEP (Refill, restart, New)

ABYM programming coverage indicators and definitions, ART

Indicator	Definition
Required coverage	Estimated number of ABYM who are living with HIV
Availability coverage	Proportion of facilities who reported offering ART service within the reporting period
Contact coverage	Proportion of ABYM known positives with an active encounter with the ART clinic in the last 12 months
Utilisation coverage	Proportion of HIV positive ABYM who are virally suppressed

ABYM programming coverage indicators and definitions, VMMC

Indicator	Definition
Required coverage	90% of uncircumcised men in priority counties
Availability coverage	Proportion of health facilities providing VMMC services in priority counties
Contact coverage	Proportion of ABYM who visited health facility for VMMC services
Utilisation coverage	Proportion of ABYM who received VMMC services in time period

ANNEX 2: CASE STUDIES

Developing coverage cascades for HIV prevention programmes using a variety of data sources

Group exercise
Objectives of the group exercise

1. To enhance the participants' skills in developing a programme coverage cascade using the available data.
2. To interpret the coverage cascade and make informed decisions for programme improvement.

Note: The data and information used in the case studies are fictitious and should not be considered or used for any purpose other than this group exercise.

CASE STUDY 1

PREP PROGRAMME COVERAGE AMONG FEMALE SEX WORKERS USING ROUTINE PROGRAMME DATA

Scenario

You are a managerial team for the Kano State, Nigeria HIV prevention programme catering to female sex workers (FSWs). Currently, your programme offers the following services through programme sites across the county:

- HIV testing
- Condoms and lubes
- PrEP

Everything seems to be running reasonably smoothly, but you are interested in looking at data from your programme to understand whether there are any areas that could be even better, particularly related to the **new PrEP intervention** included in your programme.

The national female sex workers programme stipulates that 50% of female sex workers who are HIV-negative should be receiving PrEP. Based on mapping data from 2021, the estimated population of female sex workers in Kano is 12,375. The female sex workers programme in Kano has registered only 7,080 female sex workers in the programme. They have also established a clinic that offers all clinical services to female sex workers, including HIV testing, ART, and PrEP. They have an outreach programme where one female sex worker peer educator reaches 250 female sex workers to provide health information, provide condoms, and refer female sex workers to the clinic. In the last year (July 2023 – June 2024), the programme has tested 6,500 female sex workers and found that 1,050 are living with HIV. The latest BBS conducted in Nigeria shows that HIV prevalence among female sex workers in Kano State is 21%.

Routine HMIS data for July 2023 – June 2024 is provided in Table 1.

Table 1. Health Management Information System (HMIS) data from HIV prevention programme for female sex workers in Kano, Nigeria, July 2023 – June 2024.

Indicator	Data
# of unique individuals (FSW) who visited the clinic	7,000
# of FSW who tested for HIV and received results	6,500
# of FSW who tested HIV positive or living with HIV	1,050
# of FSW who was assessed for risk using the Risk Assessment tool	5,350
# of FSW eligible for PrEP	3,500
# of FSW offered PrEP	3,050
# of FSW initiated on PrEP	561
# of FSW using PrEP for last 3 months	69

With your background knowledge of the programme and referring to the data you've received:

1. Identify indicators that can most appropriately be used to generate estimates for required -, availability-, contact-, and utilisation coverage
2. Create a coverage cascade for the PrEP programme for female sex workers
   a. Calculate required coverage
   b. Identify and quantify gaps in availability-, contact-, and utilisation coverage
3. Develop a set of recommendations for programme improvement
   a. Recommend what the programme should do to address specific coverage gaps (availability/ contact/ utilisation or all)
   b. Identify research or learning questions related to coverage gaps (availability/ contact/ utilisation or all)

CASE STUDY 2

CONDOM COVERAGE AMONG MEN WHO HAVE SEX WITH MEN USING PRIMARY SURVEY DATA

Scenario

Since 2009, Kenya's Ministry of Health has led a national Key Populations Programme for HIV prevention, implemented by over 100 partner organisations using a combination prevention approach. Currently, you are the Key Populations Programme lead in Nairobi County, Kenya and have been tasked with assessing the performance of the programme's condom intervention among men who have sex with men.

As part of the Key Populations Programme, mapping and population size estimation exercises have been conducted semi-regularly, with the most recent completed in 2020. At that time, it was estimated that 44,000 female sex workers (FSW), 12,000 men who have sex with men (MSM), 8,000 people who inject drugs (PWID), and 1,500 transgender people were living and working in Nairobi. Nairobi has a robust Key Populations Programme with six partners implementing the HIV programme with key populations. The programme includes 440 female sex worker peer educators, 240 peer educators for men who have sex with men, 160 peer educators for people who inject drugs, and 60 peer educators to reach transgender people. Peer educators provide health promotion and education, distribute condoms and demonstrate their use, refer key populations to clinics, provide support for violence, and engage key populations through support groups.

In 2023, the national programme, in partnership with the county government and implementing partners, conducted a survey with men who have sex with men in Nairobi using the polling booth survey method. The survey assessed programme outcomes related to condom use, HIV testing and treatment, experiences of violence and stigma, among other factors. The sample size for the survey was 714.

Recently, NASCOP has contacted you with concerns about whether the county programme has been meeting its target of 100% condom use among the men who have sex with men population with non-regular partners. You have been asked to make a presentation to NASCOP on the coverage of the condom programme among men who have sex with men in Nairobi County and to identify potential areas for improvement.

Using the information provided and referring to the data from the polling booth survey provided in Table 1, below:

1. Identify questions / indicators that can be used to generate estimates for required -, availability-, contact-, and utilisation coverage for condom programme.
2. Create a coverage cascade for the condom programme for men who have sex with men.
   a. Calculate required coverage.
   b. Identify and quantify gaps in availability-, contact-, and utilisation coverage.
3. Develop a set of recommendations for programme improvement.
   a. Recommend what the programme should do to address specific coverage gaps (availability/ contact/ utilisation or all).

Table 1. Select Polling Booth Survey (PBS) data (2023) from MSM participants in Nairobi, Kenya

During the past 1 month, was there a time when you intended to use a condom with any of your sexual partners but did not use it because a condom was not available at that time and place?				
	Yes	No	No response/ not applicable	Total
MSM	362	346	13	721
In the last 3 months, were you met by a peer educator from the programme?				
	Yes	No	No response/ not applicable	Total
MSM	476	243	2	721
During the past 3 months, was there any occasion when you had sex with any paying client/ sexual partner without using a condom?				
	Yes	No	No response/ not applicable	Total
MSM	362	340	19	721
During the past 3 months, did you experience any violence from police?				
	Yes	No	No response/ not applicable	Total
MSM	202	519	0	721
During the past 3 months, did you take an HIV test?				
	Yes	No	No response/ not applicable	Total
MSM	204	447	70	721
During the past 3 months, did you visit the HIV clinic?				
	Yes	No	No response/ not applicable	Total
MSM	450	271	0	721

CASE STUDY 3

HIV TESTING COVERAGE AMONG PWID IN ZIMBABWE USING SECONDARY DATA

Scenario

You are team members in the Office of the CEO of Zimbabwe's National AIDS Council (NAC), and you have been asked to make suggestions for improving HIV testing coverage for people who inject drugs in the country, based on analyses from the most recent Biological and Behavioural Survey (BBS) data.

In 2020, Zimbabwe undertook an BBS to assess the current state of its HIV epidemic and response among three key population groups: female sex workers, men who have sex with men, and people who inject drugs. The BBS was implemented in several districts. In each BBS district, a multistage, probability-based sampling approach was used to randomly select a representative sample of each key population group from validated "locations" (i.e., spaces where individuals within high-risk sexual and injecting networks meet their sexual and/or injecting partners/clients and/or engage in activities that increase the likelihood for HIV acquisition). A list of locations had been generated through a programmatic mapping exercise conducted in 2018 and was re-validated prior to BBS sample selection. Because mapping had not been previously carried out for people who inject drugs communities in Zimbabwe, a rapid mapping exercise was conducted before sampling.

Zimbabwe's National HIV/AIDS Strategic Framework (NSF) 2020-24 set an HIV testing target of 100% for all key populations. The WHO recommends that all members of key populations not previously diagnosed with HIV should have at least one HIV test in a 12-month period. In Zimbabwe HIV testing is only provided in clinics. Peer educators are employed by the people who inject drugs programme to offer new needles and condoms.

The below data from the 2020 BBS were provided to your team (see Table 1) to help identify areas of improvement to optimise HIV testing coverage among people who inject drugs who were HIV-negative. In particular, NAC is interested to understand how HIV testing programming for people who inject drugs can be improved across different districts. You have to:

1. Identify questions/ indicators/ information that can be most appropriately used to generate estimates for required -, availability-, contact-, and utilisation coverage for condom programme.
2. Create a coverage cascade for the HIV testing programme for people who inject drugs.
   a. Calculate required coverage.
   b. Identify and quantify gaps in availability-, contact-, and utilisation coverage.
3. Develop a set of recommendations for programme improvement.
   a. Recommend what the programme should do to address specific coverage gaps (availability/ contact/ utilisation or all).

Table 1. Select Biological and Behavioural Survey (BBS) data (2020) from PWID participants in Zimbabwe, by district.

Questions	District 1	District 2	District 3
% received most recent HIV test within the past 12 months.	50%	38%	62%
% who know of a health facility or place in their community where one can receive counselling and testing for HIV.	87%	62%	80%
% contacted by a peer educator or by an outreach worker to provide HIV related services in the past 12 months.	32%	40%	42%
% visited an HIV clinic and received services in the past 12 months.	69%	74%	75%

ANNEX 3: WORKSHOP ATTENDEES

Name	Organisation
1. Dr. Lilly Muthoni Nyagah	NASCOP
2. Joshua Gitonga	NSDCC
3. John Mbau	NASCOP
4. Betner Nyamota	NASCOP
5. Dr. Jonah Onentiah Magare	NASCOP
6. Dr. Murugi Micheni	NSDCC
7. Dr. Celestine Mugambi	NSDCC
8. Wendy Chege	NSDCC
9. Joseph Simiyu	NSDCC
10. 1Nelly Egehiza	NSDCC
11. Parinita Bhattarcharjee	University of Manitoba
12. Dr. Peter Arimi	PHDA TSU
13. Jafred Mwangi	PHDA TSU
14. Memory Melon	PHDA TSU
15. Japheth Kioko	PHDA TSU
16. Paul Ndambuki	PHDA TSU
17. Janet Musimbi	PHDA TSU
18. Betty Rugendo	PHDA TSU
19. Helgar Musyoki	Global Fund
20. Dr. Marissa Becker	University of Manitoba
21. Dr. Leigh McClarty	University of Manitoba
22. Dr. Souradet Shaw	University of Manitoba
23. Dr. Sharmistha Mishra	University of Toronto
24. Margaret Ndubi	UNAIDS
25. Kevin Hiuhu	NSDCC
26. Dr. Christine Njogu	NSDCC
27. Olago Osboriv	NASCOP
28. Dr. Nazilla Ganatra	NASCOP
29. Dr. Carol Ngunu	Nairobi County
30. Betty Kamemba	PHDA TSU
31. Antony Karimi	PHDA SWOP
32. Mwanaisha Hamisi	KRCS

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