



Children and young women in eastern and southern Africa are key to meeting 2030 HIV targets: time to accelerate action

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New HIV infections and AIDS-related deaths among children and adolescent girls and young women (aged 15–24 years) in eastern and southern Africa continue to occur at unacceptably high rates. The COVID-19 pandemic has also severely undermined ongoing initiatives for HIV prevention and treatment, threatening to set the region back further in its efforts to end AIDS by 2030. Major impediments exist to attaining the UNAIDS 2025 targets among children, adolescent girls, young women, young mothers living with HIV, and young female sex workers residing in eastern and southern Africa. Each population has specific but overlapping needs with regard to diagnosis and linkage to and retention in care. Urgent action is needed to intensify and improve programmes for HIV prevention and treatment, including sexual and reproductive health services for adolescent girls and young women, HIV-positive young mothers, and young female sex workers.

Introduction

HIV continues to be a major, global public health issue, and eastern and southern Africa remains the epicentre of the HIV epidemic.¹ New HIV infections and AIDS-related deaths among children (0–14 years) and adolescent girls (10–19 years), and young women (15–24 years; AGYW) in eastern and southern Africa linger at unacceptably high rates.^{1–3} The challenges to a sustained and effective HIV response for these subpopulations in eastern and southern Africa are numerous and complex, and include restricted access to paediatric and adolescent HIV services, diminishing HIV funding, sexual and gender-based violence, and legal and policy impediments to accessing sexual and reproductive health (SRH) services.^{4,5} This situation demands a comprehensive and multifaceted response. However, these challenges have been exacerbated by the COVID-19 pandemic, which has severely undermined ongoing HIV prevention initiatives and the HIV treatment cascade and care continuum, and threatens to set the region back further in its efforts to end AIDS by 2030.^{6,7} In June, 2021, a bold set of interim targets were established for 2025, which aim to get the global HIV response back on track.^{6,8} Three of the 2025 targets mirror the Fast Track 90-90-90 targets (except that targets for coverage are now set to 95%); some of the other targets focus specifically on women and children, including 95% of reproductive-age women having their SRH needs met, 95% of pregnant and breastfeeding women living with HIV having suppressed viral loads, and 95% of HIV-exposed children being tested.⁸ In this Position Paper, we outline some of the major obstacles to attaining the proposed UNAIDS 2025 targets among children and AGYW, young mothers living with HIV, and young female sex workers residing in eastern and southern Africa, which should be at the centre of targeted efforts to get the global HIV response back on track. We highlight key actions that are needed to intensify and greatly improve HIV prevention and treatment programmes for these subpopulations in the region (table).

Paediatric HIV testing and treatment

In 2021, 78 000 children were newly infected with HIV in eastern and southern Africa, and 45 000 deaths among children younger than 15 years in the region were caused by HIV-related illnesses.^{9,10} The Global Alliance is committed to ending AIDS in children by 2030,³ but the treatment coverage rate for children in eastern and southern Africa is at a dismal 56% (compared with 79% treatment coverage rate for adolescents and adults).¹ Despite the scaling up of programmes to prevent vertical transmission in the region, coverage of antenatal care and services to prevent vertical transmission is inadequate, many pregnant women who begin antiretroviral therapy (ART) are not retained in care, and the rate of HIV infection among children while breastfeeding is highly concerning.^{4,11} Few opportunities exist to provide HIV testing for children who are not diagnosed through vertical transmission services or who acquire HIV during breastfeeding. A particularly important issue is the low rate of viral suppression among children relative to adults in eastern and southern Africa. Although about 66% of children living with HIV in the region know their status, less than half (44%) are receiving antiretroviral treatment and are virally suppressed (figure 1).¹ There is an urgent need for national governments to link children to care through early testing, infant diagnosis, and proactive case-finding to identify children who are living with HIV. Implementing community-centred service delivery models to reach perinatally exposed children and retain mothers living with HIV in care will greatly reduce the gaps between HIV diagnosis, treatment, and adherence.

All newborn babies exposed to HIV should be tested at the time of delivery¹² or at the first postnatal visit, which is usually between 4 weeks and 6 weeks post partum.¹³ Infants who contract HIV must start treatment immediately, because without early treatment their odds of survival past age 2 years declines by about 50%.¹⁴ More resources should be made available to achieve the proposed targets for eastern and southern Africa:

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	Key risks	Action plan
Infants and children	Inadequate coverage of antenatal care and services to prevent vertical HIV transmission; gaps in HIV testing and poor retention in care; low treatment coverage and viral suppression rates	Strengthen early infant diagnosis by expanding access to POC EID technologies and scale up access to nucleic acid testing technologies; improve prevention of vertical transmission infrastructure (eg, m-health, community-based antiretroviral refills, and community ART groups); undertake proactive case-finding to identify children who are living with HIV, and implement community-centred service delivery models to close the treatment gap by reaching and retaining perinatally exposed children; improve continuity along the infant diagnosis and treatment cascade through same-day linkage between infant diagnosis and ART initiation; improve family-centred models of care emphasising provision of viral load monitoring, adherence support, and ART refills; support caregivers with managing care and treatment over many years, including ongoing support for treatment adherence; nurture multistakeholder engagement and develop multisectoral approaches at national and community levels to promote comprehensive service delivery, uptake, and sustainability
HIV-negative adolescent girls, pregnant women, and lactating women	Inadequate access to quality SRH information and services; new HIV infections among pregnant and breastfeeding mothers	Ensure information about HIV SRH rights and services is made available to adolescents from age 10 years; set the age of consent for HIV testing counselling before and after testing without parental consent from 12 years; promote recurrent HIV testing among HIV-negative pregnant women during pregnancy, labour, and delivery, 6 weeks after delivery, and every 3 months while breastfeeding; do rigorous studies on the efficacy and safety of CAB-LA in pregnant women; encourage research on new PrEP agents among pregnant and breastfeeding populations to avoid delays in reaching those who could benefit from PrEP after efficacy is established; establish and sustain multipartner collaborations to ensure equitable access to CAB-LA once approved for use in eastern and southern Africa (young HIV-negative women should be the highest priority)
HIV-positive adolescents and young women not linked to care	Stigma and discrimination; stigmatisation from health-care providers; side-effects of HIV treatment; transportation costs; long waiting times for treatment; food insecurity; no social support; traditional gender norms; exposure to intimate partner violence	Engage families and households in activities reducing stigma and discrimination associated with HIV; develop and implement innovative strategies for flexible ART delivery, at home or in the community; ensure providers are trained and resourced to offer age-responsive services and provide adequate information and support in the areas of treatment uptake, adherence, and side-effect management; improve coverage of conditional cash transfers to cover clinic transportation costs and food security (eg, transport and food vouchers); provide clinic spaces and hours that are accessible to adolescent girls and young women in all their diversities (eg, family responsibilities, school-age girls); support dietary and nutritional needs as a part of treatment programmes, including the provision of nutritional counselling; provide adolescent peer-support and counselling and mentoring schemes along the treatment and care continuum within health-care facilities and the community; address gender-related structural barriers to initiate, continue, and adhere to treatment; strengthen intimate partner violence prevention and reduction programmes as a core element of HIV and AIDS care and treatment; provide multisectoral and patient-centred HIV programmes that incorporate nutrition interventions, psychosocial support, and gender-responsive approaches to improve linkages to HIV care and other social services to promote overall wellbeing
HIV-positive pregnant women and lactating women	Suboptimal uptake of antenatal care and poor adherence to HIV treatment; low viral load suppression; structural factors (eg, stigma, quality of health services, transport affordability and availability)	Strengthen HIV point-of-care testing facilities, including CD4, creatinine, and on-the-spot initiation of antiretrovirals; ensure that adherence counselling throughout pregnancy and post partum is integrated into routine care for the child and family; promote use of m-health and e-health as proxy communication tools to increase ART adherence; provide ongoing support (support groups and peer groups) and one-on-one ART adherence counselling to promote adherence to daily medication regimens; conduct viral load testing every 3 months among HIV-positive pregnant and breastfeeding women placed on ART (adherence needs to be >95%); promote one-stop, integrated health care for mothers and their children; improve coverage of conditional cash transfers (eg, child grants); ensure adolescent-friendly health clinics that offer age-differentiated pregnancy care, post-partum care, and HIV-service delivery are accessible
YFSWs	Structural factors (eg, restricted access to health facilities, harassment) and economic vulnerability; stigma, discrimination, violence, and criminalisation; poor knowledge of comprehensive SRH information; poor engagement in HIV care, and low viral suppression	Promote combination prevention packages that include conditional cash transfers to reduce HIV risk in YFSWs; implement HIV prevention programmes that include the provision of condoms, skills to negotiate safe sexual practices, and access to PrEP, PEP, and HIV-testing (and retesting) services with linkages to rapid ART initiation and antenatal care services for pregnant YFSWs; engage key stakeholders (including police, community leaders, district officials, and health and social services) to prevent sexual violence and exploitation, whether by law enforcement officials or other perpetrators; form multisectoral partnerships to decriminalise sex work and enforce anti-discrimination and protective laws based on internationally accepted human rights standards; consider removing age-related barriers and parent or guardian consent requirements that impede access to HIV and STI testing, treatment, and care; provide access to a range of contraceptive options (eg, dual method use), and services related to conception, pregnancy care, and safe abortion; incorporate vertical HIV transmission programmes into SRH services for YFSWs; promote community outreach for HIV testing and immediate ART prescription, and follow-up counselling and care, for those living with HIV

ART=antiretroviral therapy. CAB-LA=long-acting injectable cabotegravir. E-health=electronic health. M-health=mobile health. PEP=postexposure prophylaxis. POC EID=point-of-care early infant diagnosis. PrEP=pre-exposure prophylaxis. SRH=sexual and reproductive health. YFSW=young female sex worker.

Table: Summary of HIV risk factors and priority strategies for HIV/AIDS prevention, treatment, and care among children and young women in eastern and southern Africa

95% of HIV-exposed children are tested by age 2 months and again after cessation of breastfeeding; 95% of infants who are tested for HIV receive their test results no later than 15 days after blood sample collection; 95% of infants diagnosed with HIV infection initiate ART no later than 15 days after receiving their test results; and 85% of all HIV-positive children on ART must have suppressed viral load by the end of 2023, and 95% by 2025.¹⁵ A multipronged approach is recommended to reach these targets, including scaling up of point-of-care early infant diagnostic testing, starting with countries that have inadequate early infant diagnosis coverage (eg, Angola, Eritrea, and South Sudan) and geographical locations that tend to be difficult to reach (eg, rural areas).^{16,17}

Governments in eastern and southern Africa and their partners must reinvigorate and urgently scale up efforts to actively track mother and baby pairs using a digital register of HIV-positive results and increase the use of family-based index testing and oral HIV tests for children aged 2–11 years.

Improving access to SRH services for AGYW

55% of new global HIV infections in 2021 were among adolescents and young people aged 15–24 years in eastern and southern Africa, and 76% of new infections in this age group were among AGYW.^{18,19} New infections in AGYW, including young pregnant and lactating women, highlight gaps in contraception provision and

lost opportunities for pre-exposure prophylaxis (PrEP). Alongside other factors (eg, age-disparate relationships and intimate partner violence), inadequate access to quality SRH information and services is a key risk factor for HIV infection among AGYW.^{20,21} Age of consent laws and policies in eastern and southern Africa represent key barriers to AGYW accessing SRH and HIV services. Although most countries in eastern and southern Africa have amended age of consent laws for sexual activity to be consistent with minimum age laws for accessing SRH services without parental permission,^{1,22} the minimum age for accessing SRH services without parental permission remains higher than the age at which many AGYW in the region become sexually active.²³ For example, AGYW in eastern and southern African countries (eg, Eswatini, Malawi, and Uganda) often report becoming sexually active before age 15 years, which is often lower than the age that adolescents are legally permitted to access SRH services independently in the countries where they live.²⁴ The UN Population Fund recommends that access to information on SRH and services be made available to people from age 10 years and that the age of consent for HIV testing and counselling before and after testing without parental consent be set to age 12 years (as is already the case in some eastern and southern African countries, such as Eswatini, South Africa, and Uganda).^{25–27} Being unable to access SRH services independently increases the likelihood that adolescents will engage in risky sexual practices, which heightens their risk for unintended pregnancies and HIV infection.²⁸ Amendments to laws are necessary to allow adolescents to access SRH and HIV prevention, testing, and treatment services independently without consent from parents or legal guardians. Changes in consent laws and expanding high-impact multilayered HIV prevention programmes in HIV-endemic settings (ie, combination interventions addressing social, behavioural, and structural factors) are likely to empower AGYW to make informed decisions about their SRH.²¹ Adolescents' evolving capacities to take autonomous responsibility for their health and to enable their health decisions should also be acknowledged by including them in research to ensure provision of appropriate and effective health services.²⁹ Given that oral PrEP initiation in the region has primarily targeted AGYW and other groups at high risk for HIV infection (eg, men who have sex with men, and sex workers),³⁰ public and private partnerships are needed to build rigorous programmes of research to evaluate the efficacy of oral PrEP for pregnant and breastfeeding women and the effectiveness of integrating PrEP delivery into family planning services.^{31,32}

Rapid linkage to treatment and retention in care

AGYW experience many social and structural barriers across the HIV continuum of care, presenting challenges for their successful linkage to and retention in HIV

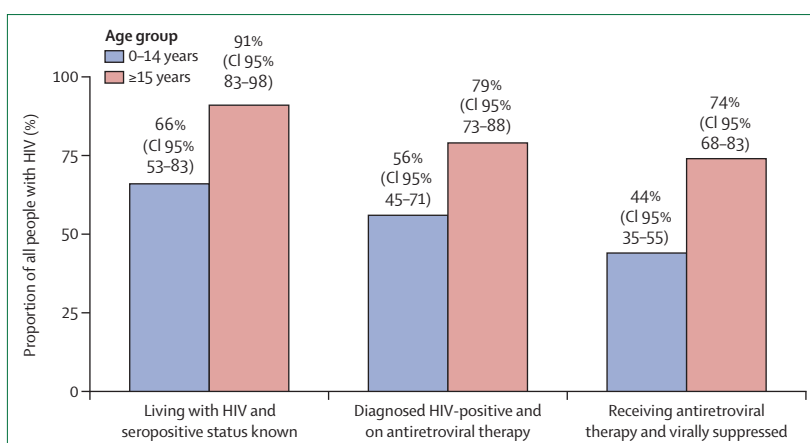


Figure 1: HIV testing and treatment cascade for children (aged 0–14 years) compared with adolescents and adults (aged ≥15 years) in eastern and southern Africa¹

treatment and care.^{33,34} One study of seven African countries showed that only 46·3% of AGYW who were HIV-positive reported being aware of their seropositive status,³⁵ highlighting the importance of regular HIV testing to reduce rates of undiagnosed infection. Compared with young women aged 20–24 years, adolescent girls aged 15–19 years are less likely to know their HIV status (62·3% for young women *vs* 57·5%), less likely to be on ART (52·2% for young women *vs* 46·1%), and less likely to be virally suppressed (63·3% for young women *vs* 59·5%).³⁶ Key drivers of low engagement in HIV care in the region include fear of stigma and discrimination, negative attitudes from health-care providers, side-effects of HIV treatment, transportation costs, long waiting times at health-care facilities, food insecurity, absence of social support, exposure to intimate partner violence, and traditional gender norms that limit health agency for AGYW.^{37–39} Streamlining services to minimise health-care facility visits, providing adequate age-appropriate counselling, improving peer support, and offering non-monetary incentives and transport reimbursement might improve retention in care.^{39,40} Researchers should continue developing and testing multifaceted interventions that extend beyond health services to address broader sociostructural barriers to treatment adherence and retention in care, particularly for adolescent girls. One possibility is to adopt a holistic, person-centred service approach, such as case management, which extends the focus to non-clinical needs that might impact the quality of an individual's life.⁴¹

Poor access to SRH services is one of the reasons countries in eastern and southern Africa have some of the highest rates of adolescent pregnancies worldwide (one in five adolescent females are mothers), which is a risk factor for HIV infection.⁴² In South Africa, a country with the highest burden of HIV/AIDS in the region, there has been a decline in HIV testing and ART initiation among people aged 15–24 years (60%),

compared with all other age groups (48%), during the COVID-19 pandemic.⁴³ Considering the high rates of adolescent pregnancies in eastern and southern Africa, many of which are unintended, it is concerning that pregnant adolescents are less likely to know their HIV status, which lowers the likelihood that they will initiate ART and reach viral suppression compared with pregnant women at 30 years or older.⁴⁴ Regional data for pregnant and breastfeeding mothers in 2021 indicate important gaps in preventing vertical transmission of HIV (eg, child infections during pregnancy because mothers did not initiate ART during pregnancy; figure 2).⁴⁵ These gaps are likely to be disproportionately skewed towards adolescent mothers, given that the prevalence of HIV and risk of infection in this group are higher than in their non-adolescent counterparts.⁴²

Without urgent interventions to increase rates of viral suppression and retention in care among pregnant adolescents in eastern and southern Africa, the region is likely to miss the 95-95-95 targets set for 2025. Preventing new HIV infections among pregnant and breastfeeding women in the region should be a top priority. Differentiated service delivery is key to meeting the complex needs of HIV-positive adolescent girls and young mothers in this region. We recommend better planning for comprehensive HIV prevention during pregnancy and breastfeeding, as well as improving access to oral PrEP. As other new, effective, prevention technologies (eg, long-acting injectable cabotegravir) become increasingly available, we strongly advocate that these technologies' safety in pregnancy and access for

young HIV-negative women should be prioritised. As per WHO guidelines, pregnant women should be tested for HIV multiple times during pregnancy, labour, delivery, and after delivery. Women who test positive should immediately be placed on ART;¹³ those who test negative and are at high risk for HIV infection should be offered PrEP. Although the provision of lifelong ART (also known as option B+) services for women has many advantages,⁴⁶ there needs to be more localised research evaluating such benefits in different settings, including how to build and strengthen programme indicators to ensure that all eligible mothers are reached.^{47,48} Promising emerging evidence shows that some ART regimens (eg, dolutegravir) taken during pregnancy are associated with a high probability of viral suppression at delivery.⁴⁹ However, more systematic studies are needed to evaluate safety and effectiveness of available treatments during pregnancy, which will help inform the evolution of guidelines and clinical practice over time. Increasing access to point-of-care HIV testing, viral load testing, and CD4 count testing for pregnant and breastfeeding mothers living with HIV will also reduce the likelihood of vertical transmission and promote their health. Although evidence exists for a strong relationship between retention in care and HIV viral suppression,⁵⁰ more research investigating the effects of multilayered interventions is required to improve early retention in HIV care, including for HIV-positive pregnant women and breastfeeding mothers. To monitor the effectiveness of interventions and to over time identify subgroups of pregnant and breastfeeding mothers at high-risk,

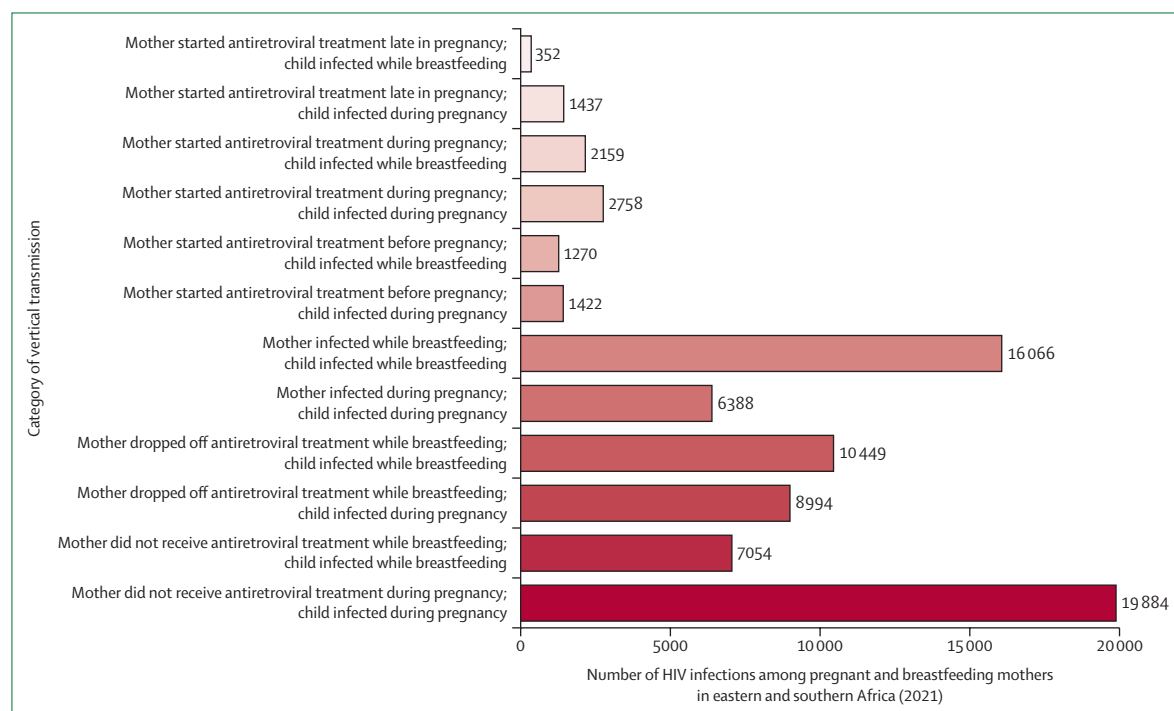


Figure 2: New child infections due to gaps in prevention of vertical transmission in eastern and southern Africa (2021)⁴⁵

countries throughout eastern and southern Africa should acquire and regularly update age-disaggregated HIV-related data on this population.

Although treatment options continue to evolve at a good pace, major structural barriers hinder access to HIV and antenatal care for pregnant young women and young mothers in eastern and southern Africa.⁵¹ Social and structural factors, including stigma, quality of health services, and transport affordability and availability, affect whether young pregnant women and mothers are willing and able to access HIV care.^{42,52} Inadequacies in HIV-related health-care services (eg, delays in receiving HIV test results) limit early uptake and initiation of ART.⁵³ For pregnant young women and new mothers living in remote, rural settings, these challenges can be heightened. For example, in South Africa, adolescent mothers in rural areas have substantial lags in securing child grants compared with adult mothers,⁵⁴ which might undermine adolescent mothers' ability to afford the cost of travelling to health-care facilities. Evidence shows that mobile HIV testing services and clinics are an important bridging mechanism for delivering health-care services to remote communities and increasing their accessibility.⁵² Effective approaches are needed to increase linkage to HIV care among clients accepting mobile testing services. Integrating health care for adolescent mothers and their children who are HIV-positive is a sensible and cost-effective option, as the integration circumvents the logistical problems of scheduling separate visits for adults and children.⁵⁵ Combination interventions, such as incorporating mobile health interventions with community adolescent treatment supporters, can also serve as a convenient approach to address health-care disparities and improve retention in care and treatment adherence. Although models and frameworks for combination interventions already exist, there is uncertainty about how to accurately identify the multilevel assortment of characteristics that should be considered when combining HIV interventions for different populations and settings.⁵⁶ Combination HIV prevention and treatment interventions should be person-centred and delivered with an integrative approach that reduces existing inequalities and barriers to services, while acknowledging heterogeneity and autonomy of beneficiaries.

Supporting young female sex workers to avoid HIV infection and access SRH services

Young female sex workers in eastern and southern Africa, especially those aged 15–24 years, continue to experience a high prevalence of HIV compared with young women in the general population.^{57,58} Although regional data on the burden of HIV among young female sex workers are scarce, evidence points to higher HIV vulnerability and incidence than among older female sex workers in eastern and southern Africa.^{58,59} Young female

sex workers are less likely than their older counterparts to know their HIV status, to report ART exposure after testing positive for HIV, and to be virally suppressed.⁶⁰ Young female sex workers are likely to have age-related and vulnerabilities (eg, lack of knowledge, poorly developed life skills, and restricted access to health-care facilities) vulnerabilities associated with being a female sex worker (eg, stigma, criminalisation, violence, and multiple and concurrent sexual partners).^{61,62} Compared with older sex workers, young female sex workers are at increased risk of unwanted teenage pregnancies⁶³ and are less likely to report knowing their HIV-positive status. When they do know their status, they are less likely to be engaged in HIV care, leading to low rates of viral suppression.⁶⁴ Therefore, members of this population are often difficult to identify, as initiation into sex work might be gradual. Young women involved in sex work might not self-identify as sex workers, and female sex workers are often highly mobile.⁶⁴ HIV and SRH services need to be flexible enough to support the needs of young female sex workers, with dedicated community-based services acting as a delivery platform. For instance, in Zimbabwe, the Sisters with a Voice programme was associated with many encouraging HIV care-related outcomes among young female sex workers, including improved engagement in each step of the HIV care cascade.⁵⁹ HIV programmes should place special emphasis on engagement in HIV testing and establish strong support systems for linking members of this population to care. A crucial part of supporting this population will be to identify strategies to reach women during the early years of their engagement in sex work, when they might be least likely to access targeted programmes. Programmes aiming to prevent HIV should emphasise the need to strengthen existing efforts, including support with negotiating safe sexual practices, providing access to PrEP, HIV-testing services, and rapid ART initiation. Long-acting PrEP products (eg, dapivirine vaginal ring, and long-acting cabotegravir) provide an adherence advantage over daily dosing, and can be used discreetly by a stigmatised population.⁶⁵ However, long-acting cabotegravir is unaffordable for most people with the highest risk of HIV infection in low-income and middle-income countries.⁶⁶ A 2022 cost-effectiveness analysis of long-acting cabotegravir versus oral PrEP in South Africa found that long-acting cabotegravir is only likely to be cost-effective when it is less than twice the cost of a 2-month supply of tenofovir disoproxil fumarate and emtricitabine.⁶⁷ This finding suggests that although long-acting cabotegravir has the potential to substantially change HIV prevention, the solution would need to be affordable for its implementation to be financially feasible across low-income and middle-income countries with high HIV incidence. Existing and future interventions also need to address structural vulnerabilities associated with HIV risk, such as poverty and gender inequalities, and to focus on building

collective agency among young female sex workers through the use of methods such as participatory-based health interventions⁶⁸ to mitigate HIV risk.

Conclusion

Programmes for the prevention of vertical transmission have made major strides over the past two decades. However, new paediatric infections continue, and getting effective HIV prevention and care to AGYW remains a challenge. If countries in eastern and southern Africa are to preserve gains made in the HIV response and to ensure that further progress is made towards ending the AIDS epidemic by 2030, national governments should work vigorously with multisectoral actors to eliminate vertical transmission of HIV and to remove barriers to HIV prevention and treatment services for AGYW. However, such efforts require increased and sustained funding for HIV programmes. With donor funding for HIV declining in the past 10 years, and many countries in eastern and southern Africa reducing HIV/AIDS funding allocations to support the public health response to COVID-19,^{69,70} innovative strategies to increase funding for HIV programmes are urgently needed. It is time to mobilise political support for more domestic funding directed to reaching and retaining children in HIV care, to scaling up HIV testing services in educational settings and out-of-school SRH programmes to mitigate HIV risk, and to rapidly linking young pregnant mothers who are HIV-positive to treatment and care. National governments in eastern and southern Africa need sustained support from international donor agencies to complement local efforts. In fragile contexts such as eastern and southern Africa, in which sociostructural vulnerabilities including poverty, unemployment, and food shortages are pervasive and negatively impact on HIV and other SRH outcomes,⁷¹ policy and social factors (eg, reducing the age of consent to access SRH services, integrating stigma reduction components into HIV programmes, implementing cash transfer programmes, and expanding mobile services) should be addressed to improve health service access among children and AGYW. In alignment with Sustainable Development Goal 3, addressing social determinants of health by promoting equitable social, economic, and environmental conditions for all should be an essential part of HIV prevention and care interventions. At the same time, government institutions, civil society organisations, and caregivers should continue to nurture and strengthen children's and young women's capacity to flourish by supporting them with the knowledge, skills, attitudes, and values they need to make informed decisions about their health and wellbeing, and provide opportunities for them to assert their agency in determining how HIV and SRH programmes are designed and implemented.

Contributors

KG, PN, and RGC conceptualised the Position Paper. All authors contributed to drafting the manuscript and revising it critically. All authors have read and approved the final version of the manuscript.

Declaration of interests

We declare no competing interests.

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