The HIV Epidemic Among Adolescent Girls and Young Women
Introduction

Young women between the ages of 15 and 24 represent a disproportionately high burden of new HIV infections compared to their male peers and older women: in 2013 nearly two-thirds of new HIV infections among young people occurred in girls. The vast majority of youth living with HIV reside in sub-Saharan Africa, and there, the gender disparity is particularly stark: young women represent more than 70% of new infections. The incidence of HIV among young women is four times that among young men, and girls tend to become infected 5-7 years earlier than their male peers.

Factors Driving Vulnerability of Girls and Young Women

BIOLOGY

The composition of the female genital tract makes women more susceptible than men to sexually-transmitted HIV infection. Younger women are even more vulnerable to HIV than older women because the cells of the genital tract and cervix are more receptive to HIV, and recent sexual debut can cause genital inflammation, creating more opportunity for infection. Use of some hormonal contraception (which can alter the vaginal chemistry) and having other STIs are also possible biological risk factors. Young women's heightened susceptibility to infection, in conjunction with the drivers described below, leads many to become infected within their first few sexual encounters.

RELATIONSHIPS WITH OLDER MEN

Age-disparate relationships are common globally, and they are the largest factor in the epidemic among adolescent girls and young women. In general, partnerships with older men provide greater exposure to HIV because sex is more frequent, condom use is less consistent, and HIV prevalence is higher among men than among adolescent boys.

The dynamics of risk vary across and within countries; as a result, it is difficult to conclude on a global scale when the age difference between partners becomes large enough to present additional risk. Modeling age-disparate relationships in the context of a generalized epidemic suggests that both the female-to-male ratio of HIV prevalence and the possibility of male-to-female transmission are significantly greater among women age 15-19 who have partners 5-10 years older than among women with same-age partners.

Several studies from eastern and southern Africa have found that an age difference of at least four years poses an increased risk of HIV transmission to young women. Risk appears to increase as the age gap widens. In rural Uganda, risk was found to be twice as high among women whose partner is more than ten years older compared to those whose partner is within 4 years older. The findings suggested that 12% of the HIV prevalence in girls aged 15-19, and 5% percent in young women aged 20-24 could be attributed to relationships with men 10 or more years older.

There are various, and often overlapping, motivations for young women to engage in sexual relationships with older men. Although many are romantic, these relationships can offer benefits such as the promise of marriage, increased social status, and financial or material gain. Men may be motivated to engage in relations with adolescent girls for sexual pleasure, prestige, and the perception that younger girls are likely to be free of HIV infection. Both men and women's motivations are often reinforced by social norms or expectations.

TRANSACTIONAL SEX

Some young women are compelled to enter relationships or have sex with older men primarily to obtain material and financial benefits. Sometimes women have transactional sex to meet basic needs, but they may also do so to obtain luxury clothing, cell phones, or jewelry, or to help pay for school.

Transactional sex is closely linked to other HIV risk factors. Young women who have transactional sex tend to have more sexual partners, and partners who are older, than other women, and they are more likely to have sex under the influence of alcohol, all of which are associated with greater
risk. Furthermore, men who engage in transactional sex are generally more violent and controlling than men who do not.\textsuperscript{11}

It can be difficult to isolate the effect of transactional sex from the effect of other risk factors, but the Stepping Stones trial in South Africa found a higher HIV incidence was among women aged 15-26 who had transactional sex with casual partners. Having an older main partner and having more partners alone did not elevate HIV incidence, suggesting that there was a nuanced pathway to risk through transactional sex.\textsuperscript{11} It is important to recognize that sometimes transactional relationships drive exposure to other risk factors. Even if she experiences violence or knows her partner is HIV-positive, a woman who is dependent on her partner for material or financial gain may be reluctant to leave the relationship, negotiate condom use, or report abuse.\textsuperscript{3}

**VIOLENCE**

There is an established link between intimate partner violence (IPV) and HIV – women who experience IPV are 50% more likely to acquire HIV than those who do not. In some settings, half of young women report that their first sexual encounter was forced.\textsuperscript{1} It is not always clear whether HIV infection occurred before or after the experience of violence. Evidence from South Africa and the US suggests that IPV tends to pre-date HIV infection, but in some cases, IPV may be perpetrated against women who disclose an HIV-positive status.\textsuperscript{12}

The association between IPV and HIV can be partly explained by the fact that abusive men are more likely to engage in riskier sexual practices, including non-use of condoms and multiple and concurrent partners.\textsuperscript{13,14} But the men who perpetrate violence may also, by nature, pose a greater risk: in South Africa and India, there is evidence that perpetrators are more likely than non-abusive men to be HIV-positive.\textsuperscript{13,15}

**LACK OF ACCESS TO SERVICES**

Globally, most young women have inadequate access to quality sexual and reproductive health information, commodities, and services. For adolescents, restrictions around the age of consent pose significant barriers to access. Even if policies permit access for girls, they may not be upheld in practice if providers hold biases about youth sexual activity or are uncomfortable or not trained in engaging with young people. Moreover, the ability of young women to seek services and make decisions about their sexual health is usually constrained by parents’ and male partners’ wishes.\textsuperscript{1}

**LIMITED ACCESS TO EDUCATION**

Girls are less likely than boys to receive a full education; in sub-Saharan Africa, four out of five young women have not completed secondary school.\textsuperscript{1} School dropout is correlated with HIV risk, although the mechanism is not entirely clear.

School provides an optimal platform for delivering information about sex, relationships, and HIV: women with at least some secondary education are five times more likely than illiterate women to be knowledgeable about HIV risks, to use condoms, and to delay sexual debut.\textsuperscript{1,16,17} Because classmates are learning the same information, girls may be surrounded by peers who hold similar knowledge and attitudes about sex, relationships, and risk.\textsuperscript{18}

However, it is important to note that school-based interventions have not consistently demonstrated impact in terms of reducing HIV incidence among youth.\textsuperscript{19} Rather, it appears that the simple act of staying in school is more critical than the instruction received there. Evidence suggests that the same factors driving school dropout, such as financial insecurity, are the same factors that underlie risk behaviors like early marriage and transactional sex.\textsuperscript{20}

Education can help a young woman exert more control in her relationships by delaying marriage and pregnancy and bolstering her confidence to negotiate with male partners.\textsuperscript{1} Educated women are less likely to experience gender-based violence or to seek help if they do, and they are more likely to be financially independent, thereby decreasing their need to enter into a transactional relationship.\textsuperscript{5,17} Furthermore, staying in school may provide girls with a smaller network of potential sex partners who are similar in age, thereby reducing their risk of HIV exposure.\textsuperscript{18} Unfortunately, the high rate of dropout due to cost, household responsibilities, pregnancy, and early marriage diminishes many girls’ chances of reaping the benefits of education.\textsuperscript{21}
Global Initiatives

According to UNAIDS, a comprehensive response to the HIV epidemic among girls and young women, particularly those in sub-Saharan Africa, must comprise the following objectives (UNAIDS 2014):

- Empowering girls and young women by also addressing their economic needs and engaging their families and partners.
- Delivering school-based interventions that challenge existing gender norms.
- Integrating services for gender-based violence, sexual and reproductive health, and HIV.
- Promoting and implementing laws and policies related to violence against women, gender equity and HIV.
- Encouraging and enabling families to keep their girls in school.

In 2015, a new $385 million partnership between PEPFAR, the Bill & Melinda Gates Foundation, Girl Effect, Johnson & Johnson, Gilead Sciences, and ViiV Healthcare was launched to reduce HIV risk for young women in 10 countries of eastern and southern Africa.

The DREAMS (Determined, Resilient, Empowered, AIDS-Free, Mentored, and Safe) Partnership focuses on empowering girls and young women, targeting their male partners with measures like VMMC and ART, shifting gender norms and educating communities about HIV, and supporting families whose girls attend school. It has set an ambitious target of reducing the incidence of HIV among young women by 25% by the end of 2016 and by 40% by the end of 2017.

These global initiatives draw from number of intervention strategies that have proven in practice to reduce the risk of HIV transmission to young women, while also empowering them to make decisions and access the services and support they need to protect their health. These strategies are described in detail in the following sections.

Effective Strategies

REDUCING RISK AMONG MALE PARTNERS

Voluntary medical male circumcision (VMMC) can serve as an approach to involve men in reducing HIV infection in adolescent girls and young women. A one-time, highly effective, relatively quick, and cost-saving intervention, VMMC confers substantial protection against HIV, and no other HIV intervention currently available provides such a permanent effect. VMMC has shown to reduce HIV infection in men by about 70% and protects their female partners from both STI and HIV. VMMC also provides a unique opportunity to reach boys and men with HIV testing and counseling services and referrals for other HIV services, including treatment. In 2010, more than 56% of men presenting for circumcision also received an HIV test.

In terms of improving men's sexual behavior, evidence suggests that campaigns to discourage concurrent partnerships have led to significant declines in the HIV infection rate in Kenya, Cote d’Ivoire, Zimbabwe, Ethiopia, and Malawi. Consistent use of male condoms can reduce the chances of HIV acquisition by more than 95%. Skills training and education about condoms for individuals and group sessions of men can increase use, as can providing women with the skills to negotiate condom use. To support promotion activities, programs must continue to make male condoms accessible, affordable, and comfortable.

PRE-EXPOSURE PROPHYLAXIS (PrEP)

A new opportunity for risk reduction is pre-exposure prophylaxis (PrEP). PrEP can come in the form of a tenofovir-based oral pill or microbicide gel, and a darcavirine-based vaginal ring has also proven to be efficacious in recent trials. When properly adhered to, PrEP is a highly effective prevention strategy. A clinical trial among heterosexual serodiscordant couples in Kenya and Uganda found that oral PrEP demonstrated a consistently large protective effect against HIV infection in both men and women, even among higher-risk subgroups. Study participants also demonstrated strong adherence to the daily PrEP regimen.

Policy, funding, and advocacy are needed to translate research on PrEP effectiveness into averted infections. DREAMS represents the first instance in which PEPFAR will directly fund PrEP. Consumer research should continue so that products are appealing to potential users. In the meantime, products on the market should be priced affordably and accompanied by positive messaging to improve awareness of and attitudes toward PrEP, and inform and motivate those using PrEP to remain adherent.

CONNECTING WOMEN TO SERVICES

To ensure that young women have access to the range of
sexual and reproductive health services they need, many programs have integrated HIV testing and counseling and ART services with contraception, safe abortion, STI diagnosis and treatment, and antenatal care.\textsuperscript{1,3,5,17} There is a relatively large evidence base to support integrating HIV services to increase young women's access.

The integration of HIV testing and ART services with family planning services has worked well to reach women who might otherwise be missed by one type of service. It offers an ideal platform to promote condoms, which can prevent both HIV and unwanted pregnancy.\textsuperscript{37} Women tend to like integrated HIV and family planning services because they don't experience as much stigma as they might seeking HIV services alone.\textsuperscript{30} A challenge for integrated delivery of HIV services and family planning is that PEPFAR prevents the use of its funds for contraception, so extra coordination is needed between PEPFAR and family planning programs. However, PEPFAR does support linkages to family planning services, especially for women living with HIV.\textsuperscript{38}

Integrating HIV testing services with antenatal care can greatly increase the number of women who know their status and are ushered onto ART. In Kenya, Namibia, Rwanda, Tanzania, and Uganda, coverage of ART among pregnant women who were eligible for treatment was higher in antenatal clinics that had integrated ART than in those that had not.\textsuperscript{37} Very few studies, however, have measured retention in ART care at integrated facilities.\textsuperscript{39}

From a provider perspective, integration can increase efficiency, decrease time spent by patients in clinics, improve provider–patient relationships, decrease stigma, and improve confidentiality. All of these changes contribute to improved quality of care and patient satisfaction.\textsuperscript{39} However, in some facilities there are large discrepancies in the provider's ability to offer integrated services and their actual delivery.\textsuperscript{37} Some providers have signaled that integrating services creates a heavier workload, and they feel that clinics need additional staff to support. One solution to this challenge may be shifting ART initiation and maintenance from physicians to nurses and midwives and engaging additional community health workers to perform HIV testing and counselling and ART adherence counselling.\textsuperscript{39}

Staff should be adequately trained and provided with ongoing guidance and supportive supervision. Because younger, unmarried women need to access services, it is also important that providers know how to engage with girls and offer youth-friendly care.\textsuperscript{22} Interventions to make health services more youth-friendly have typically focused on training service providers, outreach activities, and provision of mobile services targeted toward high-risk adolescent populations.\textsuperscript{1} Effective integration also demands that facilities have access to a strong supply chain and infrastructure, and that systems are in place to monitor the quality of services.\textsuperscript{37}

**PREVENTING VIOLENCE**

A comprehensive approach is needed to address violence against women, and many of these approaches target the same structural barriers as HIV prevention programs: harmful norms about masculinity and gender, lack of political commitment and resources, health sector responses, education, and economic empowerment.\textsuperscript{1,17}

Programs that integrate violence screening with HIV testing programs can work in some settings. Randomized trials of community mobilization programs in Rwanda and Uganda have lowered acceptance of IPV and decreased the incidence of both IPV and HIV.\textsuperscript{17}

**STRUCTURAL INTERVENTIONS**

A major component of the DREAMS initiative is to address the structural drivers of HIV infection to strengthen young women's agency.\textsuperscript{22} These approaches tend to focus on keeping girls in school and providing them with economic and social support. Structural interventions are the primary focus for girls 10-14, many of whom have not yet made their sexual debut.

**KEEPING GIRLS IN SCHOOL**

Among the structural interventions to reduce the risk of HIV for adolescent girls, the most powerful is to keep girls in school.\textsuperscript{20,40}

Means of encouraging school enrollment are usually financial; educational subsidy is associated with reduced sexual risk behaviors and higher HIV testing acceptance, as well as a number of other health and social benefits for girls.\textsuperscript{23} Mechanisms include making education free of charge, covering education costs for orphans and other vulnerable children, and providing parents with cash transfers conditional on keeping their daughters in school.\textsuperscript{3,17,19}

Cash transfers have the most documented evidence. A trial in Malawi, for instance, randomly assigned cash transfers to girls aged 13-22. Participants who received cash and were enrolled in school at baseline were 3–4 times more likely to be in school at the end of the academic year than those in the control group.\textsuperscript{20} At the 18-month follow-up, HIV prevalence was 1.2% in the intervention group versus 3% in the control group. For individuals who had already dropped out of school at baseline, there was no difference in HIV prevalence between intervention and control groups.\textsuperscript{40}

**PROVIDING SOCIAL AND ECONOMIC SUPPORT**

Besides cash transfers dependent on school enrollment, there are other ways to support young women financially and personally. Some conditional incentives are rewarded upon consistent proof of a particular behavior or health...
outcome (often, having an HIV test and receiving negative results). These models have demonstrated proof of concept for reducing negative health outcomes and risky sexual behaviors; in many settings, however, they may be too complicated to scale up.\textsuperscript{1,41} UNAIDS and the DREAMS initiative endorse the use of unconditional transfers to help young people afford services and adhere to treatment.\textsuperscript{5,23,41} Studies in Kenya and South Africa demonstrated that this approach also mitigated the risk of HIV infection among adolescent girls through delayed sexual debut and reduced pregnancy, age-disparate sex, and transactional sex.\textsuperscript{41}

Vocational programs can further empower young women. Formal employment provides women with a stable source of income, which can keep them from entering transactional relationships, impart them with more bargaining power, and help them afford health products and services.\textsuperscript{16} Because younger women are often excluded from micro-finance and savings groups due to age restrictions, programs may instead engage them using more skills-based approaches, like job training or self-help groups.\textsuperscript{42}

Finally, groups for women who experience IPV, couples communication, and mentoring can provide young women with a safe space to discuss their concerns and receive information and support.\textsuperscript{23} The DREAMS Initiative also includes a parental support component; positive relationships and open communication with parents and caregivers can lead to consistently greater health and social benefits for young women. Programs for parents and caregivers have been shown to change young women’s risky sexual behaviors, delay sexual debut, and decrease their exposure to violence and abuse.\textsuperscript{23}

### Areas for Further Research

Within the HIV evidence base, there is limited research specifically among adolescents and young women. Where data on youth exist, the way it is presented sometimes fails to tell the full story. Disaggregating results by demographic and behavioral variables can help highlight factors such as economic inequalities and age-disparate sex that may be at play.\textsuperscript{2}

Global initiatives should continue to explore the factors in the epidemic among adolescent girls and young women; in particular, violence, education, and financial insecurity. Although we know they underlie risk, more research is needed to understand the nuances as well as how the role of these factors varies by region, country, and local context.\textsuperscript{5} As ART becomes more widely available, patterns of transmission will shift and should be closely monitored. The advent of “treatment as prevention” warrants more research on how biomedical solutions will shape the epidemic among women and girls.\textsuperscript{5}

The evidence base of interventions for young women is growing, but better understanding is needed of which are most effective. In particular, there is very little on how to reduce transactional and age-disparate sexual relationships.\textsuperscript{43} PrEP holds promise as a tool for HIV prevention that women and girls can control themselves. To ensure proper use, future research should examine the suitability of PrEP for people under 18 and explore less adherence-dependent options.\textsuperscript{3,5}

To promote better implementation of proven interventions, programs should aim to document best practices for program design and delivery.\textsuperscript{3,19} They should also seek to determine if, and how, combined approaches improve outcomes for young women over one approach alone.\textsuperscript{41} Program monitoring and evaluation plans should measure improvement in participants’ knowledge and attitudes toward HIV, gender, and risk; improvements in risk reduction behavior; and changes in structural factors, such as school enrollment and cases of violence. Using standard indicators will permit comparison between programs and reveal changes over time.\textsuperscript{41} Finally, it is critical that programs determine whether addressing the drivers of the epidemic translates into health impact in the form of reduced HIV incidence among young women.
References


