



# AIDSFree Prevention Update



## December 2016

This is the December 2016 edition of the *AIDSFree Prevention Update*, an initiative of the Strengthening High Impact Interventions for an AIDS-free Generation (AIDSFree) Project. The AIDSFree Prevention Update is your monthly snapshot of current peer-reviewed literature and state-of-the-art program resources, tools, and curricula on HIV prevention.

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### **Preventing HIV among Adolescents with Oral PrEP: Observations and Challenges in the United States and South Africa**

Hosek, S., Celum, C., Wilson, C.M., Kapogiannis, B., Delany-Moretlwe, S., and Bekker, L.G. *Journal of the International AIDS Society* (October 2016), 19(Suppl 6): 21107, doi: 10.7448/IAS.19.7.21107.

This review described studies on providing pre-exposure prophylaxis (PrEP) among adolescents, and examined considerations and challenges for this key risk group. Only two ongoing studies (in the U.S. and South Africa) focused on adolescents specifically, though several studies launched in 2016 (in the U.S. and several countries in sub-Saharan Africa) include adolescents. The studies encountered numerous challenges, such as recruitment and acceptance of consent procedures by the institutional review board in the U.S. study; and participants' eligibility in a Kenyan study. The researchers also found challenges with implementation; in the U.S. study, providers expressed insufficient knowledge and comfort about prescribing PrEP for adolescents. The lack of regulatory approval for PrEP use by minors also introduced the challenge of cost, since insurance will not cover the price of unapproved drugs. Variations in state laws on consent may require study participants, who would prefer to keep their sexual preference private, to disclose to parents. Improving adolescents' access to PrEP will require addressing significant policy and practice barriers, including insurance coverage, consent, regulatory approvals and, to ensure appropriate support for adherence, access to adolescent-friendly health services from trained providers.

[View Abstract](#)

### **PrEP as a Feature in the Optimal Landscape of Combination HIV Prevention in Sub-Saharan Africa**

McGillen, J.B., Anderson, S.J., and Hallett, T.B. *Journal of the International AIDS Society* (October 2016), 19(Suppl 6): 21104, doi: 10.7448/IAS.19.7.21104.

The authors modeled approaches for optimizing provision of pre-exposure prophylaxis (PrEP) as an HIV prevention option in the complex, resource-limited countries of sub-Saharan Africa. They found that the available funding determined the populations for PrEP prioritization. Alternative prevention interventions were superior to PrEP in settings where prevention funding is extremely low. However, when combination prevention spending exceeded USD\$6 billion, PrEP was an increasingly important prevention intervention. In settings with low prevention funding levels, the most important interventions were voluntary medical male circumcision and behavior change communication (BCC) for high-risk groups (female sex workers or FSWs, and men who have sex with men or MSM), and early antiretroviral therapy (ART) for the general population. In settings with higher funding, the most important interventions were early ART and PrEP for FSWs and MSM; and PrEP and BCC for the general population. The model prioritized FSWs over MSM because FSWs have greater potential to transmit HIV to others, which made PrEP more cost-effective in this group. When prevention spending was below \$6 billion, PrEP for FSWs and MSM was a priority in places where baseline HIV incidence was  $\geq 4.7/100$  person-years and  $\geq 11.3/100$  person years, respectively. The authors concluded that PrEP implementation should be prioritized among high-risk populations, particularly FSWs, in settings with moderately high prevention spending.

[View Full Study](#)

## **Greentree II: Violence against Women and Girls, and HIV: Report on a High-Level Consultation on the Evidence and Implications**

Heise, L. and McGrory, E. STRIVE (August 2016).

This report details findings from a meeting organized by the STRIVE research consortium (May 12–14, 2015). At this meeting, experts from a wide range of fields discussed the connection between HIV and violence against women and girls (VAWG); reviewed research findings and identified gaps and priorities; and developed a conceptual model to outline how VAWG affects HIV outcomes, along with priority policy, program, and research actions. The participants concluded that all types of VAWG increase HIV risk and affect HIV outcomes. The multiple pathways for HIV acquisition include childhood sexual abuse, which can lead to risky behaviors; men's HIV status, given that violent men are more likely to be HIV-positive; and the biological consequences of experiencing violence, which can depress women's immune and hormonal functions and increase vulnerability to HIV. Violence also results from economic and social disparities between men and women, and leads to cumulative health and social effects. Addressing HIV in sub-Saharan Africa requires interventions to remediate and diminish violence. Participants recommended that HIV programs address VAWG, provide linkages to support services, and ensure that initiatives do not worsen the gender and power dynamics that underlie violence. They also recommended research to identify how VAWG affects interactions with the care cascade, along with dataset analysis of VAGW, including age disaggregation, to improve understanding of VAWG.

**[View Full Report \(PDF, 2 MB\)](#)**



## Behavioral Prevention

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### **Serosorting and Sexual Risk for HIV Infection at the Ego-Alter Dyadic Level: An Egocentric Sexual Network Study Among MSM in Nigeria**

Rodriguez-Hart, C., Liu, H., Nowak, R.G. *AIDS and Behavior* (February 2016) 20(11): 2762–2771, doi: 10.1007/s10461-016-1311-3.

The study examined participation in seroconcordant sexual relationships among 433 Nigerian men who have sex with men (MSM) and up to 5 of their sexual partners; and analyzed HIV infection risk among serodiscordant versus seroconcordant partners. Participants responded to a questionnaire to provide information on their demographics, HIV testing history, discussions about HIV status with sexual partners, sexual behaviors, and drug use. Results showed that 220 MSM knew their HIV status before the study; 95 were HIV-positive. Four men reported only participating in seroconcordant relationships, while 91 reported serodiscordant sexual activity with at least one of their sexual partners. Of the 125 participants who knew they were HIV-negative, 36 reported only participating in sexual activity with HIV-negative partners; 89 reported having sex with at least one HIV-positive partner. The majority of the 220 MSM who knew their HIV status reported sexual activity with both HIV-negative and HIV-positive partners; however, in 66.1 percent of encounters, participants did not know their partner's HIV status. Serodiscordant couples were less likely to use condoms, and more likely to have casual sex and inject drugs. The authors said that these findings demonstrated the importance of promoting HIV status awareness for oneself and partners and of encouraging safer sexual activity.

[View Abstract](#)



## Biomedical Prevention

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### **Interventions to Drive Uptake of Voluntary Medical Male Circumcision—A Collection of Impact Evaluation Evidence**

Sgaier, S.K., Reed, J.B., Sundaram, M., Brown, A., Djimeu, E., and Ridzon, R. *Journal of Acquired Immune Deficiency Syndromes* (October 2016), 72(Suppl 4): S257–S261, doi: 10.1097/QAI.0000000000001155.

This supplement summary article provided an overview of seven pilot programs that sought to address barriers to and facilitators of demand for voluntary medical male circumcision (VMMC). Financial incentive pilot programs in Kenya and South Africa found significant increases in VMMC uptake; these incentives helped to offset costs associated with missed wages. A Zambian study using peers and financial incentives did not demonstrate significant results. Studies in Kenya and Tanzania, which provided material incentives through a lottery, demonstrated no changes in VMMC uptake. A Zambian study among men over 18, examining a soccer-based intervention paired with text message reminders, referrals, and educational leaflets, found slight increases in VMMC uptake. When coaches provided personal experiences and information for adolescent boys and accompanied them to the procedure, VMMC uptake was greater. Text messaging in Zambia and postcards in South Africa had no significant effect. Studies targeting women in their third trimester of pregnancy to educate their partners in Uganda, and a South African study providing women with VMMC information to give to their partners revealed

insignificant results. Even among those studies that showed significant increases in VMMC uptake, effect sizes ranged from 7.1 to 7.6 percent, indicating much work remaining to reach the goal of 80 percent VMMC coverage.

[View Full Study](#)

### **Circumcision Status and Time to Sexual Debut Among Youth in Sub-Saharan Africa: Evidence from Six Demographic and Health Surveys**

Kangmennaang, J., Osei, L., Mkandawire, P., and Luginaah, I. *AIDS and Behavior* (2016), 20:2514–2528, doi: 10.1007/s10461-015-1141-8

This paper examined male circumcision (MC), time to sexual debut, and risk compensation among youth aged 12–24 in Ethiopia, Mali, Namibia, Rwanda, Uganda, and Togo. Among unmarried men, circumcision rates in Rwanda, Namibia, and Uganda ranged from 15–26 percent. In Ethiopia, Mali, and Namibia, circumcision rates ranged between 92 and 98 percent. Circumcision was associated with delayed sexual debut in Ethiopia and Mali, but with hastened debut in Namibia, Rwanda, and Uganda. In Togo, there was no association between circumcision status and timing of sexual debut. Those with a minimum of a secondary education, and with accurate knowledge on HIV risk and transmission, were more likely to delay sexual debut in Ethiopia, Rwanda, and Uganda. In Mali, Muslims were more likely to delay sexual debut; no associations between religion and sexual debut were found in other countries. There were also intra-country variations: for example, rural youth in Ethiopia and Mali were more likely than urban youth to delay sexual debut after circumcision. The results indicated that risk compensation may be occurring among circumcised youth in Namibia, Rwanda, and Uganda. Education appeared to protect men from sexual debut, and should be considered in decisions about HIV policy. The diverse range in findings, the authors said, demonstrates the importance of local prevention strategies.

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### **The Future of PrEP among Transgender Women: The Critical Role of Gender Affirmation in Research and Clinical Practices**

Sevelius, J.M., Deutsch, M.B. and Grant, R. *Journal of the International AIDS Society* (October 2016), 19(Suppl 6):21105, doi: 10.7448/IAS.19.7.21105.

This review examined pre-exposure prophylaxis (PrEP) and transgender women. Some PrEP studies have included transgender women, but historically, their enrollment has been low. The Pre-exposure Prophylaxis Initiative study found PrEP effective in preventing HIV overall, but showed no reductions among transgender women, indicating challenges with long-term adherence. Knowledge of PrEP is low among transgender women (though interest is high once information is provided); and concerns about interactions with hormone therapy may contribute to poor adherence. Also, providers are insufficiently trained to treat transgender women. Transgender women often lack confidence in providers who may require education on their medical needs. Gender-affirming medical care that integrates hormone therapy with HIV prevention may enhance services for transgender women; providers should be trained in such care. Collecting gender identity data, including disaggregation from men who have sex with men, is important to inform policy, funding, and research. Future PrEP enrollment protocols should deliberately seek to include transgender women. Similarly, demand generation, pilot, and program activities should be designed to include transgender women. Further research is required to determine if drug interactions between PrEP and hormone therapy exist; if hormone therapy causes changes to the anal epithelium; and if there are changes in HIV risk or local concentrations of PrEP with penile inversion vaginoplasty.

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## Barriers and Facilitators of Interventions for Improving Antiretroviral Therapy Adherence: A Systematic Review of Global Qualitative Evidence

Ma, Q., Tso, L.S., and Rich, Z.C. *Journal of the International AIDS Society* (October 2016), 19:21166, doi: 10.7448/IAS.19.1.21166.

This review of 31 studies summarized qualitative evidence on improving antiretroviral therapy (ART) interventions. Different approaches yielded different benefits:

- Interventions including *task-shifting* demonstrated reduced provider shortages, improved patient-provider relationships, and improved patients' psychosocial wellbeing.
- *Peer-based approaches* to ART adherence that used group sessions, videos, music, and comics were empowering, useful, acceptable, and feasible among people living with HIV (PLHIV).
- *Text message* adherence reminders were acceptable, feasible, low-cost, and appropriate for reaching drug users, women, and prisoners.
- *Directly observed therapy* was acceptable among children, adolescents, and poor adults.
- *Medical outreach* for PLHIV, including counseling and psychosocial services, helped incorporate daily ART routines, but sustainability was challenging.
- *Complex interventions* implementing multiple approaches had mixed results. A study in the U.S. demonstrated benefits, but a study in China found that cost and complexity of the approaches could reduce acceptability among providers.
- *Strengthening social relationships* among PLHIV, their families, and communities improved ART adherence.
- *Empowering* PLHIV by building skills for communicating about their status motivated PLHIV to maintain good adherence and actively seek care.

The analysis also suggested a need to compensate providers and volunteers, to encourage them in their work; and indicated broad concerns about confidentiality. PLHIV with known poor adherence or who have failed treatment require targeted interventions.

[View Full Study](#)



## Combination Prevention

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### Understanding the Adolescent Gap in HIV Testing Among Clients of Antenatal Care Services in West and Central African Countries

Helleringer, S. *AIDS and Behavior* (October 2016), doi: 10.1007/s10461-016-1577-5.

This study used survey data (2009–2015) to examine why adolescents are tested for HIV at lower rates in 21 West and Central African countries. Low socioeconomic status (SES), stigma and discrimination, reduced social support, marriage power dynamics, and lack of education contribute to high adolescent fertility rates and lead to reduced uptake of HIV testing services (HTS) during antenatal care (ANC); this in turn leads to higher rates of mother-to-child transmission (MTCT). Findings across countries showed that >80 percent of women attended at least one ANC visit during their pregnancy. Adolescents were significantly less likely to receive HTS in 12 of the 21 countries. In several countries, marriage was associated with increased or decreased likelihood of receiving HTS; but for most countries there was no association. School attendance and household wealth were both associated with increased HTS. Women living in urban areas who attended ANC during the first trimester, and who attended ANC multiple times

throughout the pregnancy, were also more likely to receive HTS. Reduced SES (in 8 of 12 countries) and low knowledge of MTCT (in 11 countries) were strongly associated with lower adolescent HTS uptake. The authors suggested that targeting low-income households, implementing education campaigns, providing incentives for ANC attendance, and developing interventions that prompt providers to provide adolescent HTS may help to address the HTS gap among adolescents.

### [View Abstract](#)

#### **PrEP Implementation in the Asia-Pacific Region: Opportunities, Implementation and Barriers**

Zablotska, I., Grulich, A.E., Phanuphak, N., et al. *Journal of the International AIDS Society* (October 2016), 19(Suppl 6): 21119, doi: 10.7448/IAS.19.7.21119.

This review summarized advances, opportunities, and challenges in implementing pre-exposure prophylaxis (PrEP) in 12 countries in the Asia-Pacific Region. Men who have sex with men (MSM) experience HIV at 5–15 times higher rates than the general population. HIV incidence among female sex workers (FSWs) has decreased, but remains elevated. Prevention interventions for MSM and FSWs, including HIV testing services (HTS), condoms, and needle exchanges, have been largely inadequate. PrEP may be a viable option, given the concentrated epidemic in the region. Awareness of PrEP is generally low, but acceptability is high among those with knowledge of the approach; and PrEP clinical trials and demonstration projects involving MSM and transgender people are underway in several countries. Access to PrEP by key populations is limited by lack of knowledge, education, and availability, or by cost and stigma and discrimination; and use of HTS, which acts as a conduit to PrEP services, is very low among MSM. The World Health Organization has released guidance on administering PrEP among key populations; some countries in the region are developing their own guidance and policy documents. Community advocacy projects in Australia and Thailand are increasing awareness and demand, but further advocacy by communities is required to build awareness of the need for PrEP in the region, especially among MSM and FSWs.

### [View Full Study](#)

#### **Use of a Risk Scoring Tool to Identify Higher-Risk HIV-1 Serodiscordant Couples for an Antiretroviral-Based HIV-1 Prevention Intervention**

Irungu, E.M., Heffron, R., Mugo, N., et al. *BMC Infectious Diseases* (2016), 16:571, doi: 10.1186/s12879-016-1899-y.

This study examined the feasibility of a validated risk screening tool to identify high-risk serodiscordant couples for enrollment in a study on pre-exposure prophylaxis (PrEP) and antiretroviral therapy (ART) for HIV prevention. The risk screen assessed recent unprotected sex, number of children, marital status, circumcision status, age of the HIV-negative partner, and HIV-1 RNA levels in the HIV-positive partner. A score  $\geq 5$  (of 12 maximum) indicated high risk ( $>3\%$  annual risk of HIV transmission). Of 1,013 couples, 78.6 percent scored  $\geq 5$ ; 76 percent were enrolled. Among those enrolled, 67 percent of the HIV-negative partners were male. Almost all (97.8%) had been married or living with their partner for an average of two and a half years, and had learned their partner's HIV-positive status within a month before participating in the screen. Over half (64.8%) reported condomless sex during the month before the screen. CD4 counts  $>500$  were found among 41 percent of HIV-positive participants. The authors concluded that the validated screen was easy to use, low-cost, and effective at identifying high-risk couples. Counseling among serodiscordant couples should stress the benefits of early antiretroviral therapy for the HIV-negative partner.

### [View Full Study](#)



### **Intimate Partner Violence and Adherence to HIV Pre-Exposure Prophylaxis (PrEP) in African Women in HIV Serodiscordant Relationships: A Prospective Cohort Study**

Roberts, S.T., Haberer, J., Celum, C., et al. *Journal of Acquired Immune Deficiency Syndromes* (November 2016), 73(3): 313–322.

This study examined the impact of intimate partner violence (IPV) on PrEP adherence among 1,785 women participating in a clinical trial. The authors conducted monthly in-person interviews during routine risk reduction counseling to assess IPV incidence; and assessed adherence through pill counting and testing serum tenofovir PrEP levels. Results showed that 16.1 percent of women reported experiencing IPV in the course of 437 interviews. The majority (68.8%) reported one IPV incident, but nearly 5 percent reported experiencing five or more. The most common IPV type was verbal, followed by physical and economic IPV. Women who experienced IPV were less likely to report recent sex, but more likely to report condomless sex, and that their partner had other sexual partners. Women who experienced IPV in the past three months were 50 percent more likely to have reduced PrEP adherence. No significant associations were found between HIV incidence and experiencing IPV in the past three months. Women reporting IPV explained that emotional trauma or fleeing to safety led to forgetting to take pills, or that their partner threw away their pills. PrEP projects that work with women who experience IPV should collect data to understand the impact of IPV on adherence in this group.

[View Abstract](#)

### **School-Based Sexual Health Education Interventions to Prevent STI/HIV in Sub-Saharan Africa: A Systematic Review and Meta-Analysis**

Sani, A.S., Abraham, C., Denford, S., and Ball, S. *BMC Public Health* (2016) 16: 1069, doi: 10.1186/s12889-016-3715-4.

This review examined the impact of school-based sexual health programs on sexually transmitted infections (STIs), including HIV, and condom use. Results showed that all 31 programs examined provided education on STI transmission and prevention, safe sex, and pregnancy prevention. Programs were delivered via multiple media, including lectures, discussions, role-plays, movies, songs, counseling, and quizzes administered by a range of figures including teachers, peer educators, and health educators and providers. Condom distribution occurred in three programs. Two studies examined program exposure and HIV outcomes, and found no impact. Studies similarly found no impact on incidence of herpes simplex virus 2 infections; for other STIs, studies showed mixed results. One study found no impact; another found reduced gonorrhea, chlamydia, and trichomonas at 42 months post-intervention, but not at 54 months. Fifteen programs reported significant increases in condom use, but sixteen did not. Meta-analysis found participants were more likely to use condoms following both randomized controlled trials (RCTs) and non-RCTs at 6 months post-intervention, but this effect was sustained only for RCTs at 6–10 months and >10 months follow-up periods. The authors concluded that program planners should base programs in theory; adapt programs based upon pre-existing models; and link programs to health services. Future programs should also report on the processes of the intervention to clarify the mechanisms behind effective and ineffective program elements.

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## Reports, Guidelines & Tools

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### Combination Prevention Knowledge Base

AIDSFree (2016).

The HIV Prevention Knowledge Base (PKB) is a collection of research and tools to help you find what works in prevention. Each PKB topic includes a short introduction that describes the approach, synthesizes the core elements of the intervention, and reviews the current state of practice. The PKB includes databases for combination, biomedical, behavioral, and structural prevention; entries within each database summarize evidence, tools, and resources for 29 approaches for prevention. A sample of the approaches under each category includes:

- **Combination Prevention (5 topics):** This category includes approaches for various high-risk groups such as men who have sex with men, people who inject drugs, and serodiscordant couples; and describes approaches for promoting positive health while reducing risks of transmitting the virus to others.
- **Biomedical Prevention (12 topics):** This category covers a wide range of procedures (such as ensuring the safety of blood supplies or injections), medical protocols (such as male circumcision and prevention of mother-to-child transmission), and medicines (such as antiretrovirals and microbicides) that prevent HIV or mitigate its effect.
- **Behavioral Prevention (9 topics):** This category covers approaches for reducing high-risk behavior, including consistent condom use, peer-based interventions, partner reduction, and alcohol-related risks, among others.
- **Structural Prevention (3 topics):** This category comprises an overview and sections on policy-focused and work-based interventions.

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### HIV Prevention Research & Development Investments, 2000–2015 Investment Priorities to Fund Innovation in a Challenging Global Health Landscape

**HIV Resource Tracking for HIV Prevention Research and Development (October 2016).**

This report examines trends in research and development (R&D) investments and spending for biomedical HIV prevention interventions. This report highlights findings for 2015 and analyzes trends over the past 15 years. Findings include:

- Between 2014 and 2015, basic research accounted for 21 percent of investments; pre-clinical research experienced a slight increase from 42 to 44 percent. Implementation science accounted for approximately 12 percent of investments.
- Private-sector contributions included expansion of biomedical prevention options. Commercial sector implementation research spending increased 36 percent between 2014 and 2015.
- Seventy percent of the total USD\$1.2 billion invested in 2015 come from the U.S. public sector, chiefly the National Institutes of Health. The Bill & Melinda Gates Foundation accounted for 80 percent of charitable giving. More funding diversity is needed to increase funding stability.
- The end of the Millennium Development Goals has resulted in a \$2 billion reduction in development assistance for health spending—the first reduction since 2000. Investments from development

agencies in R&D for HIV fell by \$11 million in 2015. To end the epidemic, R&D on HIV prevention must be reprioritized on the global agenda.

- Lower- and upper-middle-income countries mainly rely upon donor aid and require assistance to identify domestic funding sources for R&D on HIV prevention.

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The *AIDSFree Prevention Update* provides a representative sample of summaries and abstracts of recent articles on global HIV prevention issues from a variety of scientific, peer-reviewed journals. It also includes state-of-the-art program resources, such as tools, curricula, program reports, and unpublished research findings.

We would like the *AIDSFree Prevention Update* to be as helpful to you as possible. If you would like to recommend a recently published, web-accessible article or other information for inclusion, please let us know by sending an email to [info@aid-free.org](mailto:info@aid-free.org). The selection of material, the summaries, and any other editorial comments are the responsibility of the Editorial Board and do not represent any official endorsement by AIDSFree or USAID. The authors and/or publishers retain copyright of the original published materials.

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