July 2017

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This is the July 2017 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 program resources, tools, and curricula on HIV prevention.

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In Focus

Examining the Effects of HIV Self-Testing Compared to Standard HIV Testing Services: A Systematic Review and Meta-Analysis


This systematic review examined the impact of HIV self-testing (HIVST) on HIV testing use and frequency, identification of HIV-positive individuals, care linkages, social harm, and risk behaviors. The study’s objective was to inform the World Health Organization’s (WHO’s) guidance on HIV testing. Among the five randomized controlled trials identified in Australia, Hong Kong SAR, Kenya, and the United States, one examined couples testing and four examined testing among men who have sex with men. The findings indicated that HIVST doubled testing uptake and frequency. Those who participated in HIVST were twice as likely to be HIV-positive, compared to individuals who tested at facilities. Linkage to three-month facility-based confirmatory testing uptake was 25 percent. Evidence on conflicting risk behavior revealed that in the United States, HIVST participants did not report increased anal sex without condoms, while men in Hong Kong reported increased anal sex without condoms. One trial also identified two cases of intimate partner violence; one of the cases was attributed to the woman not asking for permission to enter the trial. The authors concluded that HIVST may offer sustainable increases in testing uptake and frequency, which can lead to earlier HIV diagnosis and treatment and lower mortality, particularly among men. WHO recommends HIVST as an additional HIV testing approach.

View Abstract

From HIV Infection to Therapeutic Response: A Population-Based Longitudinal HIV Cascade-of-Care Study in KwaZulu-Natal, South Africa


This study collected longitudinal, individual-level data on the HIV care cascade to determine where losses in the cascade occur, and to demonstrate differences between longitudinal estimation methods versus standard cross-sectional methods. The authors linked data from longitudinal population health surveillance with local HIV treatment records and examined the data by cascade stage, population stage, and clinical stage; and compared estimates to those obtained from standard cross-sectional data. The findings showed that transition rates varied among different cascade stages. Transition through initial population-based stages—including testing HIV-positive, knowing one’s HIV status, and being linked to care—were significantly slower than transition through clinical stages, particularly the later ones, which include being treatment-eligible, initiating treatment, and demonstrating a successful treatment response. Median transition times from stage to stage were:

- Between testing for HIV and knowing one’s HIV status: 52.1 months
- From HIV status knowledge to care linkage: 52.9 months
- From initiating care to being treatment-eligible: 19.5 months
- From treatment eligibility to treatment initiation: 3.1 months
- From treatment initiation to successful treatment response: 9.3 months.
The authors recommended longitudinal cascade estimation over cross-sectional estimation, because it captured both cross-sectional data plus changes in cascade progress—although cross-sectional approaches require fewer resources. Cascade estimations should begin with population stages, where bottlenecks in the cascade are greatest.

View Abstract

Guidelines on Best Practices for Adolescent- and Youth-Friendly HIV Services—An Examination of 13 Projects in PEPFAR-Supported Countries


Through funding from the United States Agency for International Development, MEASURE Evaluation conducted a review to understand best practices for adolescent- and youth-friendly program interventions. Given the scant available evidence on such programs, this review seeks to provide program planners and policymakers with evidence-informed information to determine how to invest resources effectively to meet 90-90-90 targets for adolescents and youth. The review specifies adolescent-friendly approaches that do and do not work (and why); lays out lessons learned on providing successful HIV services for adolescents; and encourages uptake of best practices to attract youth and keep them in care. The report summarizes 13 programs that were selected based upon relevance, impact, and feasibility criteria, among others. The programs were divided into four categories: three clinic-based programs with or without a community component; three clinic- and school-based programs with or without a community component; six community-based programs; and one mobile- or web-based program. The authors summarize features that make the programs adolescent- and youth-friendly, discuss the programs' impact on HIV outcomes, describe lessons learned, and consider factors that contribute to sustainability. A summary table gives each study location and program name, specifies the type of program and its intended population, describes the program, and reviews best practices.

View Full Report
**Behavioral Prevention**

**Retention of South African Adolescents in a 54-Month Longitudinal HIV Risk Reduction Trial**


This study examined strategies that affected adolescent retention in an HIV/sexually transmitted infection risk reduction trial at 42 and 54 months post-enrollment. Before the 42-month assessment, additional staff were hired and trained to address retention through a case management approach. Retention staff met with participants’ teachers and posted study contact information within schools, which encouraged participants to update their contact information for the study. Participants not found within schools received home visits and text messages. Teachers were recruited to provide participants with transportation to their appointments. Local radio stations and a free newspaper also issued reminders about the reestablishment of study activities. Participants who attended the 42-month session were sent thank-you cards as incentive to return to the 54-month session. There were 1,056 grade six study participants who initially enrolled; at long-term follow-up they had entered into 200 different high schools. The retention rate at 42 months was 91 percent, and retention at 54 months was 99.2 percent. Participants aged 9–13 were more likely to be retained than those aged 14–18 years. The authors concluded that addressing adolescent retention required building relationships with community leaders, including teachers and community advisory boards, as well as using a case management approach and developing a database to monitor participant contact information frequently.

View Abstract

**Biomedical Prevention**

**Modeling the Impact of Retention Interventions on Mother-to-Child Transmission of HIV: Results From INSPIRE Studies in Malawi, Nigeria, and Zimbabwe**


This study examined the impact of six different retention interventions to determine the likelihood of HIV transmission during the pregnancy and breastfeeding periods in Malawi, Nigeria, and Zimbabwe. For each intervention, the authors used a computer-based model to estimate the odds of HIV transmission during pregnancy or breastfeeding and developed comparisons of women who were retained in services and not retained. More than 5,700 HIV-positive women were included across the six trials; 26.8 percent of the intervention group and 19.3 percent of the control group were not retained on treatment at the point of birth. Nearly 80 percent of all HIV transmission among infants was attributed to the roughly 20 percent of women who were not retained on treatment. Infant HIV transmission in the intervention group was 9.9% versus 12.3% in the control group. HIV transmission was higher during pregnancy than during the breastfeeding period, and women who were on treatment for longer periods of time were less likely to transmit HIV to their infant. Models showed
that nearly 3,000 cases of HIV in infants could be avoided if evidence-based retention methods were added to existing services across the three countries studied. Investments in maternal retention strategies are critical to capitalize upon the benefits of HIV treatment for pregnant and breastfeeding women.

**View Abstract**

**Impact of Facility-Based Mother Support Groups on Retention in Care and PMTCT Outcomes in Rural Zimbabwe: The EPAZ Cluster-Randomized Controlled Trial**


This study examined the impact of mother support groups (MSGs) on retention in care of HIV-positive mothers and their infants in Zimbabwe. MSGs were established in 27 rural facilities across eastern Zimbabwe. HIV-positive mothers with treatment experience were recruited to coordinate facility-based MSGs along with health care workers. The bimonthly MSGs used an established curriculum covering prevention of mother-to-child transmission (PMTCT) topics over a four-month period, and participants provided psychosocial support to each other during the meetings. Retention of infants was 69 percent among those whose mothers attended MSGs, compared to 61 percent of those in the control group—a demonstrated trend toward higher retention, but without statistical significance. Infants were more likely to be retained in care if their mother was older than 32, lived 4–7 kilometers from the clinic, was already on treatment at first antenatal care appointment, and had a partner who knew her HIV status. The authors hypothesized that selection bias contributed to lack of demonstrated impact of the MSG intervention. They concluded that MSGs may play an important role in national PMTCT strategies, particularly for HIV-exposed infants, who are more vulnerable and require more clinic visits.

**View Full Study**

**90-90-90-Plus: Maintaining Adherence to Antiretroviral Therapies**


The authors of this study used 13 different psychosocial scales to predict self-reported medication adherence by 1,181 people in Canada, Namibia, Thailand, and the United States based upon various psychosocial characteristics including education, race, gender, ability to pay for health care, self-esteem, perceived stigma, depression, and anxiety. The authors categorized levels of adherence as high (>95%), moderate (61–94%), low (1–60%), and none (0%). The results showed that all but one scale (Berger’s Perceived Stigma Scale) were associated with the established levels of adherence. Nonwhites were twice as likely as whites to be in the *none* rather than the *high adherence* category. Adherence self-efficacy, depression, perceived stigma, and stressful life events all accurately predicted adherence. Clinicians should assess these factors to determine if specialized adherence interventions are required, the authors said. Education, gender, and capability to pay for health services did not accurately predict adherence. Those in the *none* adherence category demonstrated different psychosocial outcomes than individuals in other categories. Those in the *low adherence* category seemed to have access to treatment, but displayed challenges in medication adherence. The authors
said that those in the moderate adherence category may benefit from additional education interventions; and those in the high adherence category should be congratulated and used to offer adherence support to their peers.

**View Abstract**

**The Potential of Task-Shifting in Scaling Up Services for Prevention of Mother-to-Child Transmission of HIV: A Time and Motion Study in Dar es Salaam, Tanzania**


This study examined the potential cost savings of shifting tasks associated with prevention of mother-to-child transmission (PMTCT) from nurses to community health workers (CHWs). The authors measured the amount of PMTCT time nurses spent on antenatal care (ANC) and postnatal care (PNC) to determine how much could have been saved if CHWs had carried out the duties. They observed 1,121 PMTCT activities during 179 patient interactions over a combined total of 76 hours. The longest PMTCT/ANC visit was the first (average 54 minutes), followed by the first PMTCT/PNC visit (average 29 minutes). Using the World Health Organization’s guidelines that identify which PMTCT tasks can be shifted to CHWs, the authors found that 94 percent of the PMTCT tasks from the first ANC visit could be task-shifted, as could 100 percent of the PMTCT tasks from the first PNC visit. The estimated potential cost savings per visit for the first PMTCT/ANC appointment ranged from USD$1.30–2.00, and savings for the first PMTCT/PNC visit was $0.70–1.00. The authors concluded that shifting PMTCT tasks to CHWs has the potential to save on costs; allow more time for nurses to provide increasingly specialized services; and increase access to PMTCT services, particularly for vulnerable populations.

**View Full Study**

**The Case for Investing in the Male Condom**


This study examined the cost and impact of condoms in low-, medium-, and high-use scenarios to prevent against pregnancy, sexually transmitted infections (STIs) and HIV in 81 countries. The authors estimated effects by 2030, defining low use as maintaining 2015 condom levels; medium use as using current condom use trends to estimate usage from 2016 to 2030, and high use as condom scale-up to address all unmet family planning needs by 2030 and reach 90 percent of HIV and STI prevention goals by 2016. The findings revealed that 15.8 billion condoms were used in 2015, leaving a gap of 10.9 billion. Condom cost ranged from USD$59.6 billion, $61.5 billion, and $87.2 billion in low-, medium-, and high-use scenarios, respectively. In the medium-use scenario, condoms for family planning could prevent 97 million births and 1.7 million disability-adjusted life years (DALYs); 0.4 million new HIV infections and 3.4 million DALYs; and 16.5 million new STIs and 1.1 million DALYs. In the high-use scenarios, condoms could prevent 419 million births and 3.4 million DALYs; 16.8 million new HIV infections and 204.6 million DALYs; and 733.7 million new STIs and 30.1 million DALYs. The authors found condoms to be highly cost-effective. They recommended increased investments and scale-up of programs that endorse and increase condom use to decrease unwanted pregnancy and prevent new STI and HIV infections.

**View Full Study**
Defining the HIV Pre-Exposure Prophylaxis Care Continuum


Pre-exposure prophylaxis (PrEP) has been proven effective in HIV prevention. Yet it remains unclear how to measure the implementation of PrEP programs. Nor is it clear why clients do or do not accept, adhere to, or disengage from PrEP treatment. The authors presented a framework for a PrEP cascade of care and categories for PrEP retention including clients' knowledge, linkage to care, adherence, and retention. The eight-step care cascade comprises: (1) identifying individuals at highest risk; (2) increasing their risk awareness; (3) enhancing PrEP awareness; (4) facilitating PrEP access; (5) linking to PrEP care; (6) prescribing PrEP; (7) initiating PrEP; (8) adhering to PrEP; and (9) retaining individuals on PrEP. The authors summarized potential gaps and barriers in each step of the cascade, including lack of access to health care and challenges to adherence. They also developed four categories to describe and measure retention: (1) indicated for PrEP and retained in PrEP care; (2) indicated for PrEP and not retained in PrEP care; (3) no longer indicated for PrEP; and (4) lost to follow-up for PrEP care. The authors acknowledged some limitations to these schemes (for example, the framework cannot be used in countries where PrEP is not available). However, they said that programs could use this preliminary framework to evaluate PrEP programs and prioritize PrEP interventions.

View Full Study

Predicting the Need for Third-Line Antiretroviral Therapy by Identifying Patients at High Risk for Failing Second-Line Antiretroviral Therapy in South Africa


This study examined risk factors contributing to the failure of second-line antiretroviral treatment (ART) among adults in South Africa. The 194 participants had experienced virologic failure (two instances of viral load >1000 copies/mL, more than three months apart) on second-line ART. Participants completed questionnaires covering adherence, side effects, adverse drug reactions, mental health, and potential socioeconomic challenges. Clinical data were gathered also from medical records. The results showed that the likelihood of virologic failure was higher among participants who were aged 40 and younger, were unemployed, walked or used public transportation to arrive at the clinic, scored higher on the social instability index, or had switched to second-line ART within the past 12 months. Participants who self-reported an adverse drug reaction; relied upon their own memory versus other tools to take their medication; had not disclosed their HIV status to a partner or relative; experienced moderate to high depression; and drank alcohol were also more likely to experience virologic failure. The authors said that complex socioeconomic factors appear to influence adherence to second-line ART. They said that interventions that support adherence, address HIV-related stigma, and provide social support may reduce incidence of second-line ART virologic failure and reduce the need for third-line regimens.

View Full Study
Understanding Care Linkage and Engagement Across 15 Adolescent Clinics: Provider Perspectives and Implications for Newly HIV-Infected Youth


This qualitative study examined providers of HIV care for adolescents’ perspectives on linkages and adolescent engagement to: (1) inform programs specifically designed to address barriers for adolescents; (2) inform planning of appropriate resource disbursement; and (3) understand assistance required for identified needs. The authors conducted 183 semi-structured interviews with HIV care providers who treat adolescents (outreach workers, linkage coordinators, clinicians, and social service providers) in 15 clinics across the United States. Interviewees described linkage as a standard procedure that was provided for an adolescent, but did not accommodate the adolescent’s individual characteristics. Linkages were said to occur quickly, typically within a week. Participants described engagement as an individualized process in which the adolescent played an active role—carrying out self-care activities, showing up to appointments, and taking responsibility for housing and work. Interviewees described engagement and the resulting retention as a process that takes place over time and that can be hindered by stigma and difficulty accepting one’s diagnosis. They said that strong adolescent–provider relationships are critical to adolescent engagement, and noted that participation in additional services, including housing and food stamps, was essential to help adolescents to stay engaged in care. The authors concluded that effective linkages and engagement require adolescent services that are easily accessed and sustainable.

View Full Study

PrEP for Key Populations in Combination HIV Prevention in Nairobi: A Mathematical Modelling Study


The authors developed a mathematical model to examine the optimal mix of interventions, including pre-exposure prophylaxis (PrEP), to reduce HIV incidence among a population of female and male sex workers (FSWs, MSWs) and men who have sex with men (MSM) in Nairobi, Kenya. The model showed that new infections likely will decrease from 5,110 in 2015 to 3,120 by 2030—however, the epidemic will likely be maintained among MSM. The authors provided 15 strategies that identify priority interventions (including increased condom use; improved retention in antiretroviral treatment, or ART; earlier ART; PrEP; and voluntary medical male circumcision) for each sub-population, along with the total anticipated cost of each strategy. The lowest-budget strategy was increasing condom use among MSW, followed by increasing condom use among MSM, increasing ART retention, and finally, expanding ART among all sub-populations. Prioritizing PrEP for the most vulnerable FSWs would improve the cost-effectiveness of the intervention, but would affect only a small FSW population.
PrEP should be prioritized for the most vulnerable MSWs, then for MSM, and next for FSWs, as budgets allow. PrEP is less urgent for FSWs than for other populations, because of FSWs' high use of condoms. Ongoing incidence monitoring is required to determine future PrEP prioritization, especially given the high cost per infection averted.

View Abstract

Pilot Study of a Multi-Pronged Intervention Using Social Norms and Priming to Improve Adherence to Antiretroviral Therapy and Retention in Care among Adults Living with HIV in Tanzania


This study evaluated an adherence intervention that incorporated social norms and priming concepts (using associations to influence behaviors) among 405 people living with HIV in Tanzania. The patient-centered design used the primer image of a Baobab tree, “the tree of life,” which has positive cultural associations in this setting. The clinic-based component included participants placing a sticker with the words “brave” or “courageous” on a poster of the tree after successfully attending three consecutive visits—rewarding them for participating, and demonstrating that clinic attendance is a norm. The home-based interventions included a calendar with images of the tree and other positive-association images to help keep track of appointments; and a plastic pillbox, also with a small tree image, shaped like a telephone to prevent unintentional disclosure. At endline there were significant increases in staff support of treatment goals, support from other patients, and satisfaction with the clinical care received. Patients were also significantly more likely to have their questions answered by a provider and to be retained in care after six months. The authors concluded that using social norms and priming can improve the effectiveness of treatment as prevention programs and should be considered at the health system level, given the cost-effectiveness of the approach.

View Full Study

What Is It Going to Take to Move Youth-Related HIV Programme Policies into Practice in Africa?


This commentary discussed the challenges of the transition of HIV care for adolescents living with HIV. This transition entails changing from pediatric- to adult-focused services while increasing self-management responsibilities. Poorly planned transitions can result in poor treatment outcomes. There are few policies with clear definitions, tools, and standard operating procedures to support the transition process. Age of consent laws for testing, care, and treatment and the criminalization of sex work, drug use, and same-sex relationships reduce access to services. At the facility level, it is challenging to implement individualized approaches in low-resource settings. Where protocols exist, they are often ignored due to lack of time and resources, as well as misconceptions that adolescents
already possess sufficient knowledge regarding self-care. The authors recommended identifying barriers to transition and addressing them at the community, family, and social levels. There is insufficient evidence for effective transition implementation, which reduces the capacity of governments and programs to prioritize interventions. Governments should adopt adolescent-specific policies and provide guidance on appropriate transitional care, the authors said. HIV services should be tailored to meet the individual needs of adolescents; and transition policies should be enacted at the facility level. It is critical to involve youth in designing appropriate programs, and to conduct community mobilization to enhance linkages and supportive services.

View Full Study

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 program resources, such as tools, curricula, program reports, and unpublished research findings.

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