Welcome to **HIV this month**! In this issue, we cover the following topics:

1. **Reduce sexual transmission**
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   - A pill for HIV prevention: to take when you need it
   - Long-acting PrEP might offer a solution to the challenges of adherence
   - Adolescents, safer sex and HIV-status disclosure in South Africa
   - Condomless sex + viral suppression = ‘safe(r)’ sex? Challenging the laws that criminalise HIV transmission
   - How gender norms and power may impact on the acceptability, access and adherence to microbicides
   - Predicting acute HIV infection in key populations

2. **Prevent HIV among drug users**
   - Why get tested for HIV in Russia?
   - Large multi-centre study finds few differences between mortality in migrant and native populations in western Europe

3. **Eliminate new HIV infections among children**
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   - HIV contributes to stroke among young people

5. **Avoid TB deaths**
   - Following TB diagnostic algorithms: could do better

6. **Close the resource gap**
- HIV and gay men and other men who have sex with men: an expanding and underfunded epidemic

7. Eliminate gender inequalities
- Violence experience of women living with HIV: a global study

8. Eliminate stigma and discrimination
- Violence and educational outcomes among young children in South Africa and Malawi

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Peter Godfrey-Faussett and Celeste Sandoval
UNAIDS

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HIV this month, published by UNAIDS, is a selective scan of new HIV-related information found in scientific journals. The Editors of HIV this month interpret original abstracts and provide editorial comment, so that information may be easily understood by people responding to the HIV epidemic in many diverse settings. The selection of material, its abridgement and other editorial changes, and also the original editorial comment are the responsibility of the Editors and do not represent any official statement of UNAIDS. It should be noted that (except for open access journals, e.g. PLoS) the authors and/or publishers retain copyright in the original published material to which HIV this month refers.
1. Reduce sexual transmission

Sustainable HIV treatment in Africa through viral-load-informed differentiated care.


There are inefficiencies in current approaches to monitoring patients on antiretroviral therapy in sub-Saharan Africa. Patients typically attend clinics every 1 to 3 months for clinical assessment. The clinic costs are comparable with the costs of the drugs themselves and CD4 counts are measured every 6 months, but patients are rarely switched to second-line therapies. To ensure sustainability of treatment programmes, a transition to more cost-effective delivery of antiretroviral therapy is needed. In contrast to the CD4 count, measurement of the level of HIV RNA in plasma (the viral load) provides a direct measure of the current treatment effect. **Viral-load-informed differentiated care is a means of tailoring care so that those with suppressed viral load visit the clinic less frequently and attention is focussed on those with unsuppressed viral load to promote adherence and timely switching to a second-line regimen.**

The most feasible approach to measuring viral load in many countries is to collect dried blood spot samples for testing in regional laboratories; however, there have been concerns over the sensitivity and specificity of this approach to define treatment failure and the delay in returning results to the clinic. **We use modelling to synthesize evidence and evaluate the cost-effectiveness of viral-load-informed differentiated care, accounting for limitations of dried blood sample testing.** We find that viral-load-informed differentiated care using dried blood sample testing is cost-effective and is a recommended strategy for patient monitoring, although further empirical evidence as the approach is rolled out would be of value. We also explore the potential benefits of point-of-care viral load tests that may become available in the future.

Abstract Full-text [free] access

**Editor’s notes:** There has been much debate concerning how best to monitor antiretroviral therapy (ART) in resource-limited settings. In the early stages of ART roll-out, there were concerns that if ART monitoring required laboratory testing, the high cost would divert resources away from treatment delivery. Guidelines were drawn up to allow monitoring based on clinical features, alone or with CD4 count monitoring. However, clinical and CD4 monitoring proved to be neither sensitive nor specific when compared to viral load monitoring. In practice, the number of people switched to second-line ART in resource-limited settings has been lower than predicted, particularly where monitoring is clinical or CD4-based. This raises concerns that, in the absence of viral load monitoring, some people will acquire resistance to first-line ART, and this will remain undetected, with the person receiving ineffective treatment for a prolonged period, resulting in the accumulation of resistance mutations. This could threaten the effectiveness of future treatment options, and increases the risk of transmission of drug-resistant viruses. In addition, the poor specificity of clinical and CD4-based definitions of “treatment failure” means that if these definitions are used to make decisions about
switching to second line ART, many people who, in reality, have virologic suppression may be
inappropriately switched to second-line ART.

Increasingly, there are calls for viral load monitoring to be made more widely available. This is
technically challenging, particularly in remote areas. Dried blood spot samples are an alternative
method for specimen collection and transport which is practical for remote facilities. Viral load
monitoring using dried blood spots has been implemented in some settings. Interpretation of results
needs to take account of the lower sensitivity and specificity when compared to viral load assays
based on plasma.

This study by Phillips et al. used a mathematical model to explore outcomes and cost-effectiveness of
a range of ART monitoring strategies. The authors found that monitoring based on viral load
measurements using dried blood spots was cost-effective. The model assumed that in scenarios with
clinical and/or CD4 monitoring patient visits would be three-monthly, whereas in the viral load
monitoring scenario, individuals with suppressed viral load would attend clinic for monitoring less
frequently (hence the term “viral load-informed differentiated care”). The reduction in visit frequency
for people with suppressed viral load was the main driver of cost saving in this scenario.

The cost-effectiveness estimates considered only health sector costs and ignored any patient costs.
Even when treatment and care are free of charge, people incur substantial costs to attend clinics for
HIV care, particularly because of loss of income and transport costs. If patient costs had been
included, the savings due to reduced visit frequency would almost certainly be even greater.

The accuracy of models is inevitably dependent on the underlying assumptions (described in detail
and with admirable clarity in the paper’s accompanying on-line supplement). Cost-effectiveness was
sensitive to the cost of viral load monitoring, assumed to be $22 per test based on dried blood spots.
These results support efforts to increase access to viral load monitoring. As the authors comment,
empirical data from programmes employing viral load-informed differentiated care as a monitoring
strategy would be very useful.

On-demand preexposure prophylaxis in men at high risk for HIV-1 infection.

Molina JM, Capitant C, Spire B, Pialoux G, Cotte L, Charreau I, Tremblay C, Le Gall JM, Cua E,
Pasquet A, Raffi F, Pintado C, Chidiac C, Chas J, Charbonneau P, Delaigueulle C, Suzan-Monti M,
Wainberg MA, Thompson D, Rozenbaum W, Dore V, Marchand L, Simon MC, Etien N, Aboulker JP,
Meyer L, Delfraissy JF, Group AIS. N Engl J Med. 2015 Dec 3;373(23):2237-46. doi:

Background: Antiretroviral preexposure prophylaxis has been shown to reduce the risk of human
immunodeficiency virus type 1 (HIV-1) infection in some studies, but conflicting results have been
reported among studies, probably due to challenges of adherence to a daily regimen.

Methods: We conducted a double-blind, randomized trial of antiretroviral therapy for preexposure
HIV-1 prophylaxis among men who have unprotected anal sex with men. Participants were
randomly assigned to take a combination of tenofovir disoproxil fumarate (TDF) and
emtricitabine (FTC) or placebo before and after sexual activity. All participants received risk-
reduction counseling and condoms and were regularly tested for HIV-1 and HIV-2 and other sexually
transmitted infections.

Results: Of the 414 participants who underwent randomization, 400 who did not have HIV infection
were enrolled (199 in the TDF-FTC group and 201 in the placebo group). All participants were
followed for a median of 9.3 months (interquartile range, 4.9 to 20.6). A total of 16 HIV-1
infections occurred during follow-up, 2 in the TDF-FTC group (incidence, 0.91 per 100 person-years) and 14 in the placebo group (incidence, 6.60 per 100 person-years), a relative reduction in the TDF-FTC group of 86% (95% confidence interval, 40 to 98; \( P=0.002 \)). Participants took a median of 15 pills of TDF-FTC or placebo per month (\( P=0.57 \)). The rates of serious adverse events were similar in the two study groups. In the TDF-FTC group, as compared with the placebo group, there were higher rates of gastrointestinal adverse events (14% vs. 5%, \( P=0.002 \)) and renal adverse events (18% vs. 10%, \( P=0.03 \)).

Conclusions: The use of TDF-FTC before and after sexual activity provided protection against HIV-1 infection in men who have sex with men. The treatment was associated with increased rates of gastrointestinal and renal adverse events.

Abstract

Editor’s notes: The IPERGAY trial is the first trial to assess ‘on demand’ HIV pre-exposure prophylaxis (PrEP). It had a ‘take it when you need it’ approach, rather than a daily dosing approach where a pill is taken every day, regardless of sexual activity. In 2010, the iPrEx Trial of daily pills among gay men and other men who have sex with men reported a 42% relative reduction in HIV incidence. In participants with detectable drug in their blood (meaning that they had been taking the pills), the reduction was 92%. The IPERGAY researchers set out to prove or disprove the hypothesis that men would be more likely to take pills if pill-taking was associated with having sex. The hypothesis was that this might improve adherence and hence reduce the risk of HIV acquisition compared with daily dosing. Participants were randomly assigned to take a dose of two pills of TDF/FTC (tenofovir disoproxil fumarate/emtricitabine) or placebo with food between two and 24 hours before sex. A third pill was taken 24 hours after sex and a fourth pill 24 hours after that. If they continued to be sexually active, they were told to take one pill a day while sexually active and then the two post-exposure doses 24 hours apart. When the striking results of the PROUD trial in the United Kingdom, among gay men and other men who have sex with men, were made public [see HIV This Month February 2015], IPERGAY’s Data Safety and Monitoring Board (DSMB) asked for an unblinded interim analysis of the IPERGAY data. The results were so convincing (an 86% relative risk reduction) that the DSMB recommended that the trial be unblinded so that men in the placebo arm could be offered active drug. The next question was whether this highly effective preventive measure could be made available outside the trial setting. The Food and Drug Administration of the United States of America had approved TDF/FTC for HIV PrEP in 2012 but no country had followed suit. On November 23rd 2015, France’s Minister for Social Affairs, Health, and Women’s Rights announced a temporary recommendation for the use of TDF/FTC HIV prophylaxis, opening the way to the authorisation of PrEP in other European countries. Before any other European country responded, South Africa’s Medicines Control Council announced on December 3rd 2015 its approval of the fixed-dose combination of TDF/FTC for pre-exposure prophylaxis of HIV. The scientific evidence has been building for years. Clearly it is time to act now to make this highly effective HIV prevention choice available to people at highest risk of HIV exposure.

Potential clinical and economic value of long-acting preexposure prophylaxis for South African women at high-risk for HIV infection.


Background: For young South African women at risk for human immunodeficiency virus (HIV) infection, preexposure prophylaxis (PrEP) is one of the few effective prevention options available.
Long-acting injectable PrEP, which is in development, may be associated with greater adherence, compared with that for existing standard oral PrEP formulations, but its likely clinical benefits and additional costs are unknown.

Methods: Using a computer simulation, we compared the following 3 PrEP strategies: no PrEP, standard PrEP (effectiveness, 62%; cost per patient, $150/year), and long-acting PrEP (effectiveness, 75%; cost per patient, $220/year) in South African women at high risk for HIV infection (incidence of HIV infection, 5%/year). We examined the sensitivity of the strategies to changes in key input parameters among several outcome measures, including deaths averted and program cost over a 5-year period; lifetime HIV infection risk, survival rate, and program cost and cost-effectiveness; and budget impact.

Results: Compared with no PrEP, standard PrEP and long-acting PrEP cost $580 and $870 more per woman, respectively, and averted 15 and 16 deaths per 1000 women at high risk for infection, respectively, over 5 years. Measured on a lifetime basis, both standard PrEP and long-acting PrEP were cost saving, compared with no PrEP. Compared with standard PrEP, long-acting PrEP was very cost-effective ($150/life-year saved) except under the most pessimistic assumptions. Over 5 years, long-acting PrEP cost $1.6 billion when provided to 50% of eligible women.

Conclusions: Currently available standard PrEP is a cost-saving intervention whose delivery should be expanded and optimized. Long-acting PrEP will likely be a very cost-effective improvement over standard PrEP but may require novel financing mechanisms that bring short-term fiscal planning efforts into closer alignment with longer-term societal objectives.

Abstract Full-text [free] access

Editor’s notes: Standard oral pre-exposure prophylaxis (PrEP) is effective in preventing HIV and is one of the few proven prevention options available to young women at risk of HIV. However, daily adherence is key and trials have illustrated problems with adherence in several populations. Development of long-acting injectable formulations of PrEP may provide an option that does not require daily adherence to pills. In anticipation of new formulations of PrEP, this study modelled the potential clinical benefits, additional cost, cost-effectiveness and budget impact of existing and novel PrEP strategies. Given that the effectiveness and cost of long-acting PrEP is unknown, sensitivity analyses were conducted to look at varied effectiveness, HIV infection incidence, age at PrEP discontinuation and programmatic cost. The results suggest that long-acting PrEP is likely to be more clinically and cost-effective than standard oral PrEP. However, it will place an even greater strain on existing HIV prevention budgets. In addition to the research necessary to establish its clinical effectiveness, efforts to develop novel financing mechanisms are also required.

Sex and secrecy: how HIV-status disclosure affects safe sex among HIV-positive adolescents.


HIV-positive adolescents who engage in unsafe sex are at heightened risk for transmitting or re-acquiring HIV. Disclosure of HIV-status to sexual partners may impact on condom use, but no study has explored the effects of (i) adolescent knowledge of one's HIV-status, (ii) knowledge of partner status and (iii) disclosure to partners, on safer sex behaviour. This study aimed to identify whether knowledge of HIV-status by HIV-positive adolescents and partners was associated with safer sex. Eight hundred and fifty eight HIV-positive adolescents (10-19 years old, 52%
female, 68.1% vertically infected) who had ever initiated antiretroviral treatment in 41 health facilities in the Eastern Cape, South Africa, were interviewed using standardised questionnaires. Quantitative analyses used multivariate logistic regressions, controlling for confounders. Qualitative research included interviews, focus group discussions and observations with 43 HIV-positive teenagers and their healthcare workers. N = 128 (14.9%) of the total sample had ever had sex, while N = 109 (85.1%) of sexually active adolescents had boy/girlfriend. In total, 68.1% of the sample knew their status, 41.5% of those who were sexually active and in relationships knew their partner’s status, and 35.5% had disclosed to their partners. For adolescents, knowing one’s status was associated with safer sex (OR = 4.355, CI 1.085-17.474, p = .038). Neither knowing their partner’s status, nor disclosing one’s HIV-status to a partner, were associated with safer sex.

HIV-positive adolescents feared rejection, stigma and public exposure if disclosing to sexual and romantic partners. Counselling by healthcare workers for HIV-positive adolescents focused on benefits of disclosure, but did not address the fears and risks associated with disclosure. These findings challenge assumptions that disclosure is automatically protective in sexual and romantic relationships for HIV-positive adolescents, who may be ill-equipped to negotiate safer sex. There is a pressing need for effective interventions that mitigate the risks of disclosure and provide HIV-positive adolescents with skills to engage in safe sex.

Abstract Full-text [free] access

Editor’s notes: Ninety percent of the world’s adolescents living with HIV, live in sub-Saharan Africa. Evidence illustrates high levels of condomless sex with other adolescents (27-90%) and low rates of disclosure to sexual partners. Negotiating safer sexual practices is particularly challenging for HIV-positive adolescents, exacerbated by HIV-associated factors, learning and accepting their status, and withholding or disclosing their HIV status to sexual partners. There is a dearth of evidence on associations between disclosure and negotiating safer sexual practices among adolescents. This study examines the extent to which disclosure to, and by, adolescents living with HIV is associated with safer sex.

This mixed-methods study employed an iterative approach whereby preliminary qualitative findings guided quantitative measures, particularly items on disclosure. Emerging quantitative findings framed the thematic focus of qualitative research. The study was conducted in the eastern Cape, South Africa. Some 858 adolescents aged 10-19 years were recruited for the quantitative arm of the study. Some 43 participants were included in the qualitative arm of the study. Data generation methods used were individual interviews, focus group discussions and direct observations.

The findings indicate that among adolescents living with HIV, knowledge of HIV-status was strongly associated with safer sex. Knowing one’s partner’s status or disclosing one’s status was not. Qualitative findings suggest that fear of rejection, exposure, and stigma discouraged HIV-positive adolescents from disclosing to their partners as a strategy for negotiating safer sex. Disclosure counselling and support from healthcare professionals did not address these challenges. Guidelines on counselling HIV-positive adolescents should focus on promoting safer sex with all sexual partners as a first priority, rather than promoting disclosure to sexual partners. Disclosure counselling for HIV-positive adolescents could also be enhanced by improving patient confidentiality, addressing adolescent fears on the dangers of disclosure and by giving HIV-positive adolescents skills to negotiate safer sex.

HIV transmission law in the age of treatment-as-prevention.
Evidence that treating people with HIV early in infection prevents transmission to sexual partners has reframed HIV prevention paradigms. The resulting emphasis on HIV testing as part of prevention strategies has rekindled the debate as to whether laws that criminalise HIV transmission are counterproductive to the human rights-based public health response. It also raises normative questions about what constitutes 'safe(r) sex' if a person with HIV has undetectable viral load, which has significant implications for sexual practice and health promotion. This paper discusses a recent high-profile Australian case where HIV transmission or exposure has been prosecuted, and considers how the interpretation of law in these instances impacts on HIV prevention paradigms. In addition, we consider the implications of an evolving medical understanding of HIV transmission, and particularly the ability to determine infectiousness through viral load tests, for laws that relate to HIV exposure (as distinct from transmission) offences. We conclude that defensible laws must relate to appreciable risk. Given the evidence that the transmissibility of HIV is reduced to negligible level where viral load is suppressed, this needs to be recognised in the framing, implementation and enforcement of the law. In addition, normative concepts of 'safe(r) sex' need to be expanded to include sex that is 'protected' by means of the positive person being virally suppressed. In jurisdictions where use of a condom has previously mitigated the duty of the person with HIV to disclose to a partner, this might logically also apply to sex that is 'protected' by undetectable viral load.

Abstract access

Editor’s notes: The changing landscape of HIV treatment challenges assumptions about the HIV epidemic based on past knowledge and understanding. The authors of this paper set out why laws that criminalise HIV transmission may now need to change. This change is required because of the impact of antiretroviral therapy on the viral load of someone living with HIV and taking their treatment regularly. As the authors note ‘it is no longer reasonable to classify condomless sex as ‘unsafe’ if the partner with HIV has an undetectable viral load’ (p. 985). What the authors do not discuss is whether someone on antiretroviral therapy does indeed have a suppressed viral load. Indeed, whether the person’s viral load suppression may change between the act for which they are prosecuted, and the time of the prosecution, is not discussed. The viral load of someone living with HIV on treatment may not stay suppressed if there is a break in adherence. That said, this paper does very effectively highlight how the evolution of the HIV epidemic affects many areas of life and institutions; including laws that may be slow to adapt and change.

Optimizing HIV prevention for women: a review of evidence from microbicide studies and considerations for gender-sensitive microbicide introduction.


Introduction: Microbicides were conceptualized as a product that could give women increased agency over HIV prevention. However, gender-related norms and inequalities that place women and girls at risk of acquiring HIV are also likely to affect their ability to use microbicides. Understanding how gendered norms and inequalities may pose obstacles to women's microbicide use is important to inform product design, microbicide trial implementation and eventually microbicide and other antiretroviral-based prevention programmes. We reviewed published vaginal microbicide studies to identify gender-related factors that are likely to affect microbicide acceptability, access and
adherence. We make recommendations on product design, trial implementation, positioning, marketing and delivery of microbicides in a way that takes into account the gender-related norms and inequalities identified in the review.

Methods: We conducted PubMed searches for microbicide studies published in journals between 2000 and 2013. Search terms included trial names (e.g. "MDP301"), microbicide product names (e.g. "BufferGel"), researchers' names (e.g. "van der Straten") and other relevant terms (e.g. "microbicide"). We included microbicide clinical trials; surrogate studies in which a vaginal gel, ring or diaphragm was used without an active ingredient; and hypothetical studies in which no product was used. Social and behavioural studies implemented in conjunction with clinical trials and surrogate studies were also included. Although we recognize the importance of rectal microbicides to women, we did not include studies of rectal microbicides, as most of them focused on men who have sex with men. Using a standardized review template, three reviewers read the articles and looked for gender-related findings in key domains (e.g. product acceptability, sexual pleasure, partner communication, microbicide access and adherence).

Results and discussion: The gendered norms, roles and relations that will likely affect women’s ability to access and use microbicides are related to two broad categories: norms regulating women's and men's sexuality and power dynamics within intimate relationships. Though norms about women's and men's sexuality vary among cultural contexts, women's sexual behaviour and pleasure are typically less socially acceptable and more restricted than men's. These norms drive the need for woman-initiated HIV prevention, but also have implications for microbicide acceptability and how they are likely to be used by women of different ages and relationship types. Women's limited power to negotiate the circumstances of their intimate relationships and sex lives will impact their ability to access and use microbicides. Men's role in women's effective microbicide use can range from opposition to non-interference to active support.

Conclusions: Identifying an effective microbicide that women can use consistently is vital to the future of HIV prevention for women. Once such a microbicide is identified and licensed, positioning, marketing and delivering microbicides in a way that takes into account the gendered norms and inequalities we have identified would help maximize access and adherence. It also has the potential to improve communication about sexuality, strengthen relationships between women and men and increase women's agency over their bodies and their health.

Abstract   Full-text [free] access

Editor’s notes: This paper presents a review of the evidence of microbicides research to understand gender-associated factors that could impact on acceptability, access and adherence. These gender norms include women and men’s sexual norms and power differentials in intimate partner relationships. This review included studies conducted between 2000 and 2013 and thus only includes papers on hypothetical research and clinical trials. While the studies were conducted in a variety of contexts the authors found a number of similar norms and power differentials.

In relation to sexual norms, the review revealed findings on sexual risk, sexual pleasure, and sexual preferences. In terms of sexual risk there were differing opinions across the studies of which women were most likely to need microbicides. Some studies suggested that microbicides should be focused on women in steady partnerships where condom negotiation is difficult, while others suggested focusing on key populations such as sex workers. Across many studies the potential for promoting sexual pleasure for both women and men emerged as an advantage of microbicides, and had an
impact on acceptability. However, many of the studies highlighted how men’s sexual pleasure takes precedence. In relation to sexual preferences, the much touted idea that men prefer ‘dry’ or ‘tight’ sex was challenged by some of the studies, which found that the lubricating effect of the gel was acceptable.

The review also uncovered issues associated to power inequalities in intimate partner relationships, including power to control time of sex, male partner engagement and communication, and intimate-partner violence. Women reported in many studies their lack of power to control the timing of sex and this is seen as likely to impact on their ability to use coitally-dependant microbicides. However, there is some evidence that men supported women’s use of the gel, although this depended on the type of relationship. While microbicides have been promoted as products that women can use without a partner’s knowledge the review illustrated that women do prefer to communicate with their partners about their use and there is evidence of joint-decision making. Further, there was evidence of women experiencing intimate partner violence in relation to trial participation. There is also some evidence that women were less likely to discuss or use microbicides in violent relationships.

This highly comprehensive review concludes that while microbicides will not empower women they do have the potential to enhance women’s agency in relation to their health and sexuality and may improve communication in their relationships. However, the authors conclude that gender norms and power differentials may impact on acceptability, access and adherence.

**Targeted screening of at-risk adults for acute HIV-1 infection in sub-Saharan Africa.**


Background: Patients with acute HIV-1 infection (AHI) have elevated infectivity, but cannot be diagnosed using antibody-based testing. Approaches to screen patients for AHI are urgently needed to enable counselling and treatment to reduce onward transmission.

Methods: We pooled data from four African studies of high-risk adults that evaluated symptoms and signs compatible with acute retroviral syndrome and tested for HIV-1 at each visit. AHI was defined as detectable plasma viral load or p24 antigen in an HIV-1-antibody-negative patient who subsequently seroconverted. Using generalized estimating equation, we identified symptoms, signs, and demographic factors predictive of AHI, adjusting for study site. We assigned a predictor score to each statistically significant predictor based on its beta coefficient, summing predictor scores to calculate a risk score for each participant. We evaluated the performance of this algorithm overall and at each site.

Results: We compared 122 AHI visits with 45 961 visits by uninfected patients. Younger age (18-29 years), fever, fatigue, body pains, diarrhoea, sore throat, and genital ulcer disease were independent predictors of AHI. The overall area under the receiver operating characteristics curve (AUC) for the algorithm was 0.78, with site-specific AUCs ranging from 0.61 to 0.89. A risk score of at least 2 would indicate AHI testing for 5-50% of participants, substantially decreasing the number needing testing.

Conclusion: Our targeted risk score algorithm based on seven characteristics reduced the number of patients needing AHI testing and had good performance overall. We recommend this risk score algorithm for use by HIV programs in sub-Saharan Africa with capacity to test high-risk patients for AHI.
Editor’s notes: This analysis adds to the literature around the performance of risk score algorithms to guide testing for acute HIV infection (AHI). The four studies included in this analysis involved key populations in different African settings. In common with previous analyses, genital ulcer disease had by far the strongest association with AHI. The derived algorithm had modest accuracy overall and poor performance in South Africa, where symptoms and signs were particularly infrequent.

Most studies included in this analysis were cohort studies following key individuals. Whether or not algorithms based on recording of symptoms and signs during intensive follow-up for AHI can be translated for use in a real world situation of unselected people presenting for health care remains unproven. Ultimately, we really need evidence about the impact and cost-effectiveness of detecting AHI in different populations. This is in order to define the role of testing for AHI, and in particular whether rationalising testing with algorithms such as this is necessary (especially for key populations).

2. Prevent HIV among drug users

Motivators and barriers to HIV testing among street-based female sex workers in St. Petersburg, Russia.


Female sex workers are particularly susceptible to HIV infection in Russia. However, a dearth of information exists on their utilisation of HIV services. A mixed-methods, cross-sectional study was conducted to examine motivators and barriers to HIV testing among street-based sex workers in St. Petersburg, Russia. The health belief model was the theoretical framework for the study. Twenty-nine sex workers participated in in-depth interviews, and 139 sex workers completed interviewer-administered surveys between February and September 2009. Barriers to getting an HIV test were fear of learning the results, worrying that other people would think they were sick, and the distance needed to travel to obtain services. Motivators for getting tested were protecting others from infection, wanting to know one’s status and getting treatment if diagnosed. Logistic regression analysis demonstrated that knowing people living with HIV [aOR = 6.75, 95% CI (1.11, 41.10)] and length of time since start of injection drug use [aOR = 0.30, 95% CI (0.09, 0.97)] were significantly associated with recently getting tested. These results are important to consider when developing public health interventions to help female sex workers in Russia learn their HIV status and get linked to care and treatment services if needed.

Editor’s notes: This paper summarises findings from a mixed-method study among a sample of female sex workers in St Petersburg, Russian Federation, the majority of whom also inject drugs. This is an important study, allowing the voices of a highly marginalised group to be heard and highlighting barriers and facilitators to HIV testing. Improving access to testing among this population is particularly important given the increased risk of HIV infection that they face. They are susceptible to HIV infection through both sexual and injecting transmission routes. The paper raises some important points such as the widespread misunderstanding about the severity of HIV in the absence of symptoms. HIV was not perceived to be a major problem among the population; there were more immediate problems associated with drug use and sex work. The necessity to travel for testing was seen as a barrier to HIV testing. For a population with multiple and complex health needs this is an
acute problem given the vertical structure of the Russian health system. There is a lack of integration across sexual health, drug dependency and HIV and other infectious disease treatment services necessary for this population. Many other structural barriers were reported to testing including fear of being registered as having HIV, fear of stigma from friends and health care workers, fear of the unknown associated with infection and disease progression and uncertainty about availability of HIV treatment. Concerns about treatment availability are particularly relevant since people who inject drugs are often denied HIV treatment in the Russian Federation while they continue to use drugs. This point is important in understanding the context in which HIV testing is accessed. Further discussion on what real benefits knowing your status brings weighed up against the disadvantages of knowing, warrants further discussion in the paper. We know that there is much stigma associated with being HIV positive. People living with HIV experience frequent problems with employment and concerns about having children taken into care. All these problems are compounded if you use drugs or sell sex. In this context, the benefits of knowing your status is questionable and is bound to influence uptake of testing.


Background: Many migrants face adverse socioeconomic conditions and barriers to health services that can impair timely HIV diagnosis and access to life-saving treatments. We aimed to assess the differences in overall mortality by geographical origin in HIV-positive men and women using data from COHERE, a large European collaboration of HIV cohorts from 1997 to 2013.

Methods: In this observational cohort study, we included HIV-positive, antiretroviral-naive people accessing care in western Europe from COHERE. Individuals were eligible if enrolled in a cohort that collected information on geographical origin or ethnic origin from Jan 1, 1997, to March 19, 2013, aged 18-75 years, they had available information about sex, they were not infected perinatally or after the receipt of clotting factor concentrates, and were naive to combination antiretroviral therapy at cohort entry. Migrants' origins were grouped into seven regions: western Europe and similar countries (Australia, Canada, New Zealand, and the USA); eastern Europe; North Africa and the Middle East; sub-Saharan Africa; Latin America; the Caribbean; and Asia and the rest of Oceania (excluding Australia and New Zealand). Crude and adjusted mortality rate ratios were calculated by use of Poisson regression stratified by sex, comparing each group with the native population. Multiple imputation with chained equations was used to account for missing values.

Findings: Between Oct 25, 1979, and March 19, 2013, we recruited 279 659 individuals to the COHERE collaboration in EuroCoord. Of these 123 344 men and 45 877 women met the inclusion criteria. Our data suggested effect modification by transmission route (pinteraction=0.12 for men; pinteraction=0.002 for women). No significant difference in mortality was identified by geographical origin in men who have sex with men. In heterosexual populations, most migrant men had mortality lower than or equal to that of native men, whereas no group of migrant women had mortality lower than that in native women. High mortality was identified in heterosexual men from Latin America (rate ratio [RR] 1.46, 95% CI 1.00-2.12, p=0.049) and heterosexual women from the Caribbean (1.48, 1.29-1.70, p<0.0001). Compared with that in the native population, mortality in injecting drug users was similar or low for all migrant groups.
Interpretation: Characteristics of and risks faced by migrant populations with HIV differ for men and women and for populations infected heterosexually, by sex between men, or by injecting drug use. Further research is needed to understand how inequalities are generated and maintained for the groups with higher mortality identified in this study.

Abstract access

*Editor’s notes*: This topical analysis on migrant health from the large COHERE collaboration examined mortality in people living with HIV who are treatment-naive and enrolling for care in 11 western European countries. Routinely collected data were analysed to explore differences in mortality by region of origin. Overall, few differences in mortality were seen between migrant and native populations, with a general trend of similar or lower mortality among migrants than native populations. However, diversity within migrant groups even from the same region makes it challenging to interpret summary data. The authors provide interesting insights into these difficulties. For example, the reasons for migration are likely to result in different socio-economic conditions in the host country, but heterogeneity in mortality between sub-groups may be masked when looking at overall mortality in migrants compared with the native population. The authors discuss both the “healthy migrant effect” (the fact that it is often healthier, younger populations who are able to migrate), and the “salmon bias” (the fact people who are ill often return to their place of origin). Both of these effects can lead to an observed lower disease burden in migrants than native populations. At a time when immigration is a hotly debated issue in western Europe this study highlights the challenges in assessing migrant health and the need for further empirical and methodological research in this area.

3. Eliminate new HIV infections among children

No perinatal hiv-1 transmission from women with effective antiretroviral therapy starting before conception.


Background: The efficacy of preventing perinatal transmission (PT) of human immunodeficiency virus type 1 (HIV-1) depends on both viral load (VL) and treatment duration. The objective of this study was to determine whether initiating highly active antiretroviral therapy (ART) before conception has the potential to eliminate PT.

Methods: A total of 8075 HIV-infected mother/infant pairs included from 2000 to 2011 in the national prospective multicenter French Perinatal Cohort (ANRS-EPF) received ART, delivered live-born children with determined HIV infection status, and did not breastfeed. PT was analyzed according to maternal VL at delivery and timing of ART initiation.

Results: The overall rate of PT was 0.7% (56 of 8075). No transmission occurred among 2651 infants born to women who were receiving ART before conception, continued ART throughout the pregnancy, and delivered with a plasma VL <50 copies/mL (upper 95% confidence interval [CI], 0.1%). VL and timing of ART initiation were independently associated with PT in logistic regression. Regardless of VL, the PT rate increased from 0.2% (6 of 3505) for women starting ART before conception to 0.4% (3 of 709), 0.9% (24 of 2810), and 2.2% (23 of 1051) for those starting...
during the first, second, or third trimester (P < .001). Regardless of when ART was initiated, the PT rate was higher for women with VLs of 50-400 copies/mL near delivery than for those with <50 copies/mL (adjusted odds ratio, 4.0; 95% CI, 1.9-8.2).

Conclusions: Perinatal HIV-1 transmission is virtually zero in mothers who start ART before conception and maintain suppression of plasma VL.

Abstract access

Editor’s notes: The risk of HIV transmission from mother-to-child is around 15-45% in the absence of maternal antiretroviral therapy (ART). This study illustrates that the risk of mother-to-child transmission is virtually eliminated when ART is started prior to conception and plasma viral load (VL) is undetectable at delivery. These findings provide further evidence supporting the implementation of Option B+ (lifelong ART as early as possible in all HIV-positive pregnant women regardless of CD4 count and VL) in low-income countries. In these settings, effectiveness of pre-conception ART will be dependent on retention in care so that women remain virologically suppressed for subsequent pregnancies. Robust surveillance data of pregnancy outcomes and other short-term and long-term risks of ART on the foetus, such as congenital malformations, and on the infant, such as pre-term birth, are also necessary to confirm that the benefit of pre-conception ART outweighs any harm.

4. 15 million accessing treatment

Association between injectable progestin-only contraceptives and HIV acquisition and HIV target cell frequency in the female genital tract in South African women: a prospective cohort study.


Background: The use of injectable progestin-only contraceptives has been associated with increased risk of HIV acquisition in observational studies, but the biological mechanisms of this risk remain poorly understood. We aimed to assess the effects of progestins on HIV acquisition risk and the immune environment in the female genital tract.

Methods: In this prospective cohort, we enrolled HIV-negative South African women aged 18-23 years who were not pregnant and were living in Umlazi, South Africa from the Females Rising through Education, Support, and Health (FRESH) study. We tested for HIV-1 twice per week to monitor incident infection. Every 3 months, we collected demographic and behavioural data in addition to blood and cervical samples. The study objective was to characterise host immune determinants of HIV acquisition risk, including those associated with injectable progestin-only contraceptive use. Hazard ratios (HRs) were estimated using Cox proportional hazards methods.

Findings: Between Nov 19, 2012, and May 31, 2015, we characterised 432 HIV-uninfected South African women from the FRESH study. In this cohort, 152 women used injectable progestin-only contraceptives, 43 used other forms of contraception, and 222 women used no method of long-term contraception. Women using injectable progestin-only contraceptives were at substantially higher risk of acquiring HIV (12.06 per 100 person-years, 95% CI 6.41-20.63) than women using no long-term contraception (3.71 per 100 person-years, 1.36-8.07; adjusted hazard ratio [aHR] 2.93, 95% CI 1.09-7.868, p=0.0326). HIV-negative injectable progestin-only contraceptive users
had 3.92 times the frequency of cervical HIV target cells (CCR5+ CD4 T cells) compared with
women using no long-term contraceptive (p=0.0241). Women using no long-term contraceptive in
the luteal phase of the menstrual cycle also had a 3.25 times higher frequency of cervical target cells
compared with those in the follicular phase (p=0.0488), suggesting that a naturally high progestin
state had similar immunological effects to injectable progestin-only contraceptives.

Interpretation: Injectable progestin-only contraceptive use and high endogenous progesterone
are both associated with increased frequency of activated HIV targets cells at the cervix, the
site of initial HIV entry in most women, providing a possible biological mechanism underlying
increased HIV acquisition in women with high progestin exposure.

Abstract access

Editor’s notes: Several observational studies have reported increased risk of HIV acquisition in
women using injectable progestin-only contraception. In this study, injectable progestin-only
contraceptive use was associated with a higher frequency of activated CCR5+ CD4 T cells in the
cervix. These cells are the target for HIV, and thus an increase in their number may increase the risk
of HIV acquisition by accelerating viral dissemination after genital tract exposure to HIV. This study
also found a significantly higher frequency of activated cervical target cells during the luteal phase of
the menstrual cycle in women who were not using injectable progestin-only contraception. These
findings suggest that the increased HIV acquisition risk may be mediated by both exogenous and
endogenous progestin exposure. This study provides novel insights into the role of progestins, and
provides a potential biological explanation for an increased risk of HIV acquisition among women
using injectable progestin-only contraception. This work will hopefully inform the development of
biological prophylactics to reduce HIV acquisition in women. Whether these findings will influence
recommendations for contraceptive use in women living in high HIV incidence settings remains to be
determined.

HIV, antiretroviral treatment, hypertension, and stroke in Malawian adults: A case-control
study.

Benjamin LA, Corbett EL, Connor MD, Mzinganjira H, Kampondeni S, Choko A, Hopkins M, Emsley
10.1212/WNL.000000000002278. [Epub ahead of print]

Objective: To investigate HIV, its treatment, and hypertension as stroke risk factors in Malawian
adults.

Methods: We performed a case-control study of 222 adults with acute stroke, confirmed by MRI
in 86%, and 503 population controls, frequency-matched for age, sex, and place of residence,
using Global Positioning System for random selection. Multivariate logistic regression models were
used for case-control comparisons.

Results: HIV infection (population attributable fraction [PAF] 15%) and hypertension (PAF 46%) were strongly linked to stroke. HIV was the predominant risk factor for young stroke (≤45 years), with a prevalence of 67% and an adjusted odds ratio (aOR) (95% confidence interval) of 5.57 (2.43-12.8) (PAF 42%). There was an increased risk of a stroke in patients with untreated HIV infection (aOR 4.48 [2.44-8.24], p < 0.001), but the highest risk was in the first 6 months after
starting antiretroviral therapy (ART) (aOR 15.6 [4.21-46.6], p < 0.001); this group had a lower
median CD4+ T-lymphocyte count (92 vs 375 cells/mm³, p = 0.004). In older participants (HIV
prevalence 17%), HIV was associated with stroke, but with a lower PAF than hypertension (5% vs 68%). There was no interaction between HIV and hypertension on stroke risk.

Conclusions: In a population with high HIV prevalence, where stroke incidence is increasing, we have shown that HIV is an important risk factor. Early ART use in immunosuppressed patients poses an additional and potentially treatable stroke risk. Immune reconstitution inflammatory syndrome may be contributing to the disease mechanisms.

Abstract Full-text [free] access

Editor’s notes: Stroke incidence is increasing across sub-Saharan Africa. Globally, hypertension accounts for most of the strokes. However, in sub-Saharan Africa, stroke is not uncommon among younger people, among whom the prevalence of hypertension is low. Therefore other factors may play a role.

This article reports on a case-control study with prospective recruitment of cases and community controls, examining the role of HIV, antiretroviral therapy, and the interaction between HIV and hypertension as risk factors for stroke in a setting with high HIV prevalence.

The investigators confirmed 86% of their cases with brain imaging, and found that the majority (78%) had findings consistent with ischemic stroke. Not surprisingly they found that overall, hypertension accounted for about half (46%) of the stroke cases. Interestingly only one-quarter of all people with hypertension in the study (cases and controls) were on hypertensive treatment.

However, among younger people (≤45 years) with stroke, HIV infection was the most important risk factor and accounted for 42% of the cases. HIV-positive people experienced the greatest risk of stroke during their first six months after ART initiation.

The HIV-positive stroke cases had a lower CD4 cell count compared to HIV-positive controls on the same duration of ART. Immunosuppression is a risk factor for immune constitution inflammatory syndrome (IRIS), and IRIS could thus be a plausible mechanism of stroke among people initiating ART.

The results of this study reinforce the need to start ART before people have advanced immunosuppression, which will reduce IRIS-associated morbidity. The latest WHO guidelines, ‘Treat all’, which recommend starting all HIV-positive people on antiretroviral therapy as soon after diagnosis as possible, have the potential to contribute to this.

5. Avoid TB deaths

What happens after a negative test for tuberculosis? Evaluating adherence to TB diagnostic algorithms in South African primary health clinics.


Introduction and background: Diagnostic tests for tuberculosis (TB) using sputum have suboptimal sensitivity among HIV-positive persons. We assessed health care worker adherence to TB diagnostic algorithms after negative sputum test result/s.

Methods: The XTEND trial compared outcomes among people tested for TB in primary care clinics using Xpert® MTB/RIF vs. smear microscopy as the initial test. We analysed data from XTEND participants who were HIV-positive or HIV status unknown, whose initial sputum Xpert®
MTB/RIF or microscopy result was negative. If chest radiography, sputum culture or hospital referral took place, the algorithm for TB diagnosis was considered followed. Analysis of intervention (Xpert® MTB/RIF) effect on algorithm adherence used methods for cluster-randomised trials with small number of clusters.

Results: Amongst 4037 XTEND participants with initial negative test results, 2155 (53%) reported being or testing HIV positive and 540 (14%) had unknown HIV status. Amongst 2155 HIV-positive participants (684 [32%] male, mean age 37 years [range 18-79 years]), there was evidence of algorithm adherence amongst 515 (24%). Adherence was less likely among persons tested initially with Xpert® MTB/RIF vs. smear (14% [142/1031] vs 32% [364/1122], adjusted risk ratio 0.34 [95% CI 0.17-0.65]) and for participants with unknown vs. positive HIV status (59/540 [11%] vs. 507/2155 [24%]).

Conclusions: We observed poorer adherence to TB diagnostic algorithms amongst HIV-positive persons tested initially with Xpert® MTB/RIF vs. microscopy. Poor adherence to TB diagnostic algorithms and incomplete coverage of HIV testing represents a missed opportunity to diagnose TB and HIV, and may contribute to TB mortality.

Abstract access

Editor’s notes: Despite advances in the TB diagnostic field in recent years, molecular tests such as Xpert® MTB/RIF will still miss a substantial proportion of HIV-positive people with active TB disease. For that reason, diagnostic algorithms have been developed to guide further evaluation of people with symptoms suggestive of TB who test negative with Xpert®. This paper presents findings from South Africa that, in the context of a cluster-randomised trial, few people received further investigation according to the algorithm.

Only one in seven of the HIV-positive people with a negative Xpert® MTB/RIF had any further investigations recorded. Sputum culture was the most common investigation in this group but was done for only around one in ten. It should be noted that the outcome of having further investigations was largely based on review of clinic and laboratory records. As a result, it is possible that additional investigations were performed but remained undocumented. Although considerable between-clinic variation in performance was noted, the reasons underlying this were not explored in this analysis.

The algorithm for people living with HIV was not overly complex and was broadly similar to the algorithm in place previously for investigation of people with a negative sputum smear. The observation that algorithm adherence was lower than for people with a negative smear suggests that health care workers might have had false confidence in the negative Xpert® result. In the broader context, this study took place at a time when there was much hype around Xpert® as a tool that would revolutionise the diagnosis of TB. It would not be surprising if this resulted in health care workers being over-confident in their interpretation of negative test results.

There are other possible explanations for the low numbers having additional investigations:

- People may not have returned for their initial test result so further investigation was not possible (this is not quantified here)
- People did return but symptoms had fully resolved or they were unable to produce sputum for further investigation
- Health care workers used clinical judgement to decide on the need for further investigation rather than adhering strictly to the algorithm. This is supported at least partly by the fact that people with more TB symptoms were more likely to receive additional investigations. The yield of culture is not reported here – that might have given a further clue as to whether the people selected to have further investigations were individuals with a high likelihood of TB.
These issues and others may need to be explored in future analyses to determine whether modifications to the algorithm are required or whether strengthened training and support of health care workers would improve adherence to the algorithm.

6. Close the resource gap

Financing the response to HIV among gay men and other men who have sex with men: case studies from eight diverse countries.


Despite reductions in the number of new HIV infections globally, the HIV epidemic among men who have sex with men (MSM) is expanding. This study characterises financing of HIV programmes for MSM and the impact of criminalisation on levels of funding, using data from five countries that criminalise same-sex sexual practices (Ethiopia, Mozambique, Guyana, India and Nigeria) and three that do not (China, Ukraine and Vietnam). For each country, all publicly available documents from the Global Fund to Fight AIDS, Tuberculosis and Malaria for approved HIV/AIDS grants in Rounds 5-9 and Country Operational Plans detailing investments made through the President’s Emergency Plan for AIDS Relief (PEPFAR) from US fiscal year (FY) 2007-2009 were examined. Eleven of 20 HIV proposals to the Global Fund contained programmes for MSM totalling approximately $40 million or 6% of proposed budgets. In six countries providing activity-level data on MSM programming, PEPFAR funding that served this population and others ranged from $23.3 million in FY2007 to $35.4 million in FY2009, representing 0.5-25.9% of overall, non-treatment funding over this period. Countries that criminalise same-sex sexual practices spend fewer resources on HIV programmes serving MSM. However, they also show consistent underfunding of programmes serving MSM regardless of context or geography.

Abstract access

Editor’s notes: Despite encouraging indicators on the reduction of new HIV infections worldwide, the epidemic among gay men and other men who have sex with men continues to grow. This is due to both biological and structural factors. With many governments failing to take responsibility for this at-risk population, funding for gay men and other men who have sex with men-specific programmes often comes from international donors. This study looks at Global Fund and PEPFAR financing of programmes for gay men and other men who have sex with men, comparing funding availability and services offered both in settings where homosexuality is criminalised and settings where it is not.

The study finds that most proposed funding focuses on behaviour change communication, and less frequently on improving sexual health services, community outreach and education. Nations that criminalise homosexuality allocated about 2% of funding towards gay men and other men who have sex with men services, while countries without punitive measures allocated close to 7%. Importantly, both were felt to be inadequately small sums of money in relation to the size of the epidemic. Key stakeholder interviews from criminalising countries suggest that legal restrictions make it more difficult to provide services focused on gay men and other men who have sex with men. Although, little is known about the degree to which gay men and other men who have sex with men access services focused on the general population. The authors also note that countries that criminalise homosexuality may request funds for gay men and other men who have sex with men believing that
Donors will look favourably on budgets that include these activities. After receiving funds, these countries may re-programme activities, reducing or removing these focussed programmes.

There is comparatively little research done on HIV and gay men and other men who have sex with men in low- and middle-income countries, in particular in African settings. This article contributes to an expanding literature on the subject and raises questions about the role that international donors should play in ensuring an equitable access to services, particularly in the context of reprogramming. This highlights how real impact on the incidence of HIV among gay men and other men who have sex with men requires both demand generation and accountability in equal measure.

7. Eliminate gender inequalities

Violence. Enough already: findings from a global participatory survey among women living with HIV.


Introduction: Women living with HIV are vulnerable to gender-based violence (GBV) before and after diagnosis, in multiple settings. This study’s aim was to explore how GBV is experienced by women living with HIV, how this affects women’s sexual and reproductive health (SRH) and human rights (HR), and the implications for policymakers.

Methods: A community-based, participatory, user-led, mixed-methods study was conducted, with women living with HIV from key affected populations. Simple descriptive frequencies were used for quantitative data. Thematic coding of open qualitative responses was performed and validated with key respondents.

Results: In total, 945 women living with HIV from 94 countries participated in the study. Eighty-nine percent of 480 respondents to an optional section on GBV reported having experienced or feared violence, either, before, since and/or because of their HIV diagnosis. GBV reporting was higher after HIV diagnosis (intimate partner, family/neighbours, community and health settings). Women described a complex and iterative relationship between GBV and HIV occurring throughout their lives, including breaches of confidentiality and lack of SRH choice in healthcare settings, forced/coerced treatments, HR abuses, moralistic and judgemental attitudes (including towards women from key populations), and fear of losing child custody. Respondents recommended healthcare practitioners and policymakers address stigma and discrimination, training, awareness-raising, and HR abuses in healthcare settings.

Conclusions: Respondents reported increased GBV with partners and in families, communities and healthcare settings after their HIV diagnosis and across the life-cycle. Measures of GBV must be sought and monitored, particularly within healthcare settings that should be safe. Respondents offered policymakers a comprehensive range of recommendations to achieve their SRH and HR goals. Global guidance documents and policies are more likely to succeed for the end-users if lived experiences are used.

Abstract Full-text [free] access

Editor’s notes: Violence against women who are living with HIV is common globally. This paper reports on a study of 832 women living with HIV from 94 countries who participated in an online survey, recruited through a non-random snowball sampling model. The survey comprised quantitative
and qualitative (free text) components. Participants included women who had ever or were currently using injection drugs (14%), who had ever or were currently selling sex (14%), and who had ever or were currently homeless (14%). Lifetime experience of violence among respondents was high (86%). Perpetrators included: intimate partner (59%), family member / neighbour (45%), community member (53%), health care workers (53%) and police, military, prison or detention services (17%). Findings suggest that violence is not a one off occurrence and cannot easily be packaged as a cause or a consequence of HIV. Instead violence occurs throughout women’s lives, takes multiple forms, and has a complex and iterative relationship with HIV.

The study population did not represent all women living with HIV, and was biased towards women with internet access who have an activist interest. Nonetheless, the study provides further evidence of the breadth and frequency of gender based violence experienced by women living with HIV. Key recommendations for policy makers include training of health care workers working in sexual and reproductive services to offer non-discriminatory services to women living with HIV and to effectively respond to disclosures of gender based violence (such as intimate partner violence) as part of the package of care.

8. Eliminate stigma and discrimination

Exposure to violence predicts poor educational outcomes in young children in South Africa and Malawi.


Background: Violence during childhood may affect short and long-term educational factors. There is scant literature on younger children from resource poor settings.

Methods: This study assessed child violence experiences (harsh punishment and exposure to domestic or community violence) and school enrolment, progress and attendance in children attending community-based organisations in South Africa and Malawi (n=989) at baseline and at 15 months’ follow-up, examining differential experience of HIV positive, HIV affected and HIV unaffected children.

Results: Violence exposure was high: 45.4% experienced some form of psychological violence, 47.8% physical violence, 46.7% domestic violence and 41.8% community violence. Primary school enrolment was 96%. Violence was not associated with school enrolment at baseline but, controlling for baseline, children exposed to psychological violence for discipline were more than ten times less likely to be enrolled at follow-up (OR 0.09; 95% CI 0.01 to 0.57). Harsh discipline was associated with poor school progress. For children HIV positive a detrimental effect of harsh physical discipline was found on school performance (OR 0.10; 95% CI 0.02 to 0.61).

Conclusion: Violence experiences were associated with a number of educational outcomes, which may have long-term consequences. Community-based organisations may be well placed to address such violence, with a particular emphasis on the challenges faced by children who are HIV positive.

Abstract Full-text [free] access

Editor’s notes: There is substantial evidence that demonstrates the negative effects of the experience of violence in childhood on child mental health. However, there is little evidence on the
impact of violence on educational outcomes. This is due to measurement and study design, such as data being primarily cross-sectional and studies being confined to adolescents, where younger children are excluded. This study reports data from a longitudinal study of young children aged 4–13 years affected by HIV enrolled at community-based organisations (CBOs) in South Africa and Malawi. The study examined the relationship between exposure to violence at home or in the community on educational outcomes at baseline and follow-up (12–15 months later). In particular, attention was given to HIV positive and HIV affected children in order to explore the effects of HIV as a factor of either violence experience or educational risk in this age group. HIV affected children are children who may not be HIV positive themselves, but living in a household with a HIV positive member.

In this sample of young children (n=989), close to 14% were HIV positive. School enrolment and attendance was high, although HIV positive children had slightly lower attendance and enrolment in the correct grade for their age, compared to HIV affected children. At baseline, overall exposure to violence at home and in the community was very high. Over half of the sample had been exposed to two or more types of violence, whereas less than one in six reported no violence exposure at all. At both baseline and at follow-up, there was no association found between community violence and school enrolment and attendance or grade progression. In terms of violence experienced at home (domestic violence), at baseline there was an association with grade progression for children in households with no HIV. At follow-up, in particular for children living with HIV, use of physical violence to discipline the child had a detrimental effect on grade progression. Furthermore, at follow-up, the use of psychological violence to discipline children had an effect on school enrolment. Hence, children of caregivers using psychological violence for discipline were significantly less likely to be enrolled in school at follow-up, if they were not enrolled at baseline. Thus, findings from this study highlight that despite high rates of violence exposure in this population, children who are HIV positive, in particular, appear to be most at risk of poor educational outcomes. This is likely to be due to a range of inter-related risk factors that affect educational outcomes: parental death, shifting care arrangements, change in school, illness-induced poverty and increased care-giving responsibilities. All these factors might affect a child’s ability to access schooling and perform well in the context of HIV. As shown, educational outcomes were specifically linked to harsh punishment, as opposed to community or domestic violence. Thus, CBOs that provide services for children affected by HIV might be key to intervening on this issue. Furthermore, younger children in HIV endemic countries are particularly vulnerable and educational achievement in the early years is an important pre-requisite for ongoing educational milestones.