Welcome to the thirty-fifth issue of *HIV This Week!* In this issue, we cover gender (women on top in treatment in southern Africa; nevirapine resistance post-pregnancy: what are the consequences?: when is a will just a piece of paper?), sexual transmission and prevention (how concepts of masculinity in Papua New Guinea increase HIV risk; problem solving and negotiation skills among serodiscordant couples in India, Thailand and Uganda; behavioural strategies falter among men who have sex with men in San Francisco; high acceptability of male circumcision for HIV risk reduction in Zambia), treatment and care (minimum threshold CD4 count for antiretroviral treatment initiation in Hong Kong; forced treatment interruptions due to law enforcement; support for WHO’s first line NNRTI-based regimens), orphans (with one-third of working adults caring for orphans in Botswana, what suffers?: effects of parental death on schooling in Kenya), HIV testing (provider-initiated testing in antenatal care achieves 78% acceptance in a Botswana regional hospital), stigma and social exclusion (similar conundrums for male-to-female transgender people and women), basic science (discovery of VIRIP a natural entry inhibitor), and epidemiology (how could HIV have travelled from Cameroon to Leopoldville in the 1920s?).

To find out how you can access a majority of scientific journals free of charge, please see the last page of this issue or check the *HIV This Week* blog on the UNAIDS website at http://hivthisweek.unaids.org.

We want to be as helpful to you as we can, so please let us know what your interests are and what you think of *HIV This Week* by sending a comment to hivthisweek@unaids.org or by posting one on the *HIV This Week* blog. If you would like to recommend an article for inclusion in *HIV This Week*, please let us know.

Don’t forget that you can find a wealth of information on the HIV epidemic and responses to it at http://www.unaids.org.

Cate Hankins  Tania Lemay  
Chief Scientific Adviser  Interim Research Officer

1. Gender


HIV and AIDS are significant and growing public health concerns in southern Africa. The majority of countries in the region have national adult HIV prevalence estimates exceeding 10 percent. The increasing availability of highly active antiretroviral therapy (HAART) has potential to mitigate the situation. There is however concern that women may experience more barriers in accessing treatment programs than men. A systematic review of the
literature was carried out to describe the gender distribution of patients accessing highly active antiretroviral therapy (HAART) in Southern Africa. Data on number of patients on treatment, their mean or median age and gender were obtained and compared across studies and reports. The median or mean age of patients in the studies ranged from 33 to 39 years. While female to male HIV infection prevalence ratios in the southern African countries ranged from 1.2:1 to 1.6:1, female to male ratios on HAART ranged from 0.8:1 to 2.3:1. The majority of the reports had a female: male ratio in treatment exceeding 1.6. Overall, there were more females on HAART than there were males and this was not solely explained by the higher HIV prevalence among females compared to males. In most Southern African countries, proportionally more females are on HIV antiretroviral treatment than men, even when the higher HIV infection prevalence in females is accounted for. There is need to identify the factors that are facilitating women’s accessibility to HIV treatment. As more patients access HAART in the region, it will be important to continue assessing the gender distribution of patients on HAART. Editors’ note: These results showing that women are accessing antiretroviral treatment proportionately more than men are not surprising in view of women’s overall higher utilization of health services compared to men. They do suggest that significant financial barriers are being overcome for many women. Continued close monitoring of the comparative treatment access of men and women remains important from the perspective of equity.


Chi and colleagues’ objective was to determine whether prior exposure to single-dose nevirapine (NVP) for prevention of mother-to-child HIV transmission (PMTCT) is associated with attenuated CD4 cell response, death, or clinical treatment failure in women starting antiretroviral therapy (ART) containing non-nucleoside reverse transcriptase inhibitors (NNRTI). The method used was an open cohort evaluation of outcomes for women in program sites across Zambia. HIV treatment was provided according to Zambian/World Health Organization guidelines. Peripartum NVP exposure status was known for 6740 women initiating NNRTI-containing ART, of whom 751 (11%) reported prior use of NVP for PMTCT. There was no significant difference in mean CD4 cell change between those exposed or unexposed to NVP at 6 (+202 versus +182 cells/mul; P = 0.20) or 12 (+201 versus +211 cells/mul; P = 0.60) months. Multivariable analyses showed no significant differences in mortality [adjusted hazard ratio (HR), 1.2; 95% confidence interval (CI), 0.8-1.8] or clinical treatment failure (adjusted HR, 1.1; 95% CI, 0.8-1.5). Comparison of recent NVP exposure with remote exposure suggested a less favourable CD4 cell response at 6 (+150 versus +219 cells/mul; P = 0.06) and 12 (+149 versus +215 cells/mul; P = 0.39) months. Women with recent NVP exposure also had a trend towards elevated risk for clinical treatment failure (adjusted HR, 1.6; 95% CI, 0.9-2.7). The authors conclude that exposure to maternal single-dose NVP was not associated with substantially different short-term treatment outcomes. However, evidence was suggestive that exposure within 6 months of ART initiation may be a risk factor for poor treatment outcomes, highlighting the importance of ART screening and initiation early in pregnancy. Editors’ note: This encouraging report suggests that even when women develop nevirapine resistance following a single dose of nevirapine it will not affect their own treatment prospects, particularly if treatment is not required for at least 6 months.
after delivering. However, the potential deleterious effects for women who do require early treatment are a concern. CD4 count testing for HIV-positive pregnant women and antiretroviral treatment combination regimes for those who are treatment eligible would accomplish both goals: preventing mother-to-child transmission and preserving the life of mothers.


High rates of HIV and poverty place women in a precarious economic situation in Lusaka, Zambia. Mortality from HIV infection is high, leaving many households single headed and creating almost a half a million orphans. One of the most prevalent forms of gender violence that creates poverty in women is when the male's family claims the property of the deceased from the widow and the children. The Zambia-Emory HIV Research Project collected 184 wills from individuals in monogamous unions where one or both of the individuals were HIV-positive. Despite the fact that many wills specifically stated that their extended family was not allowed to tamper with their possessions in the event of death, property grabbing proved to be a prevalent and difficult issue in Lusaka. In order to improve the lives of widowed women in Lusaka, the government and other civic and non-governmental organisations must inform women of their rights to own and protect their land and other assets in the event of their husbands' death, an issue of increasing importance in the area of HIV/AIDS. 

Editors' note: Informing women of their property and inheritance rights is a good first step but without legal redress to ensure those rights are upheld, wills are but pieces of paper.

2. Sexual transmission and prevention


Married women in rural Papua New Guinea are at risk for HIV primarily because of their husbands' extramarital relationships. Labour migration puts these men in social contexts that encourage infidelity. Moreover, many men do not view sexual fidelity as necessary for achieving a happy marriage, but they view drinking and « looking for women » as important for male friendships. Although fear of HIV infection is increasing, the concern that men most often articulated about the consequences of extramarital infidelity was possible violent retaliation for « stealing » another man's wife. Therefore, divorced or separated women who exchange sex for money are considered to be « safe » partners. Interventions that promote fidelity will fail in the absence of a social and economic infrastructure that supports fidelity. 

Editors' note: Strategies to reduce HIV risk for married women in this context will need to consider how to reduce family separation due to labour migration and how to engage men in discussions of culturally-bound concepts of masculinity which have negative consequences, including increased HIV risk for them and their families.


This study assessed the feasibility of a group-based couples intervention to increase condom use in HIV serodiscordant couples in three countries (India, Thailand and Uganda). The intervention focused on communication, problem solving, and negotiation skills. Forty-three
couples enrolled in the intervention (15 in India, 14 in Thailand, and 14 in Uganda) and 40 couples completed all study activities. Participants were interviewed at baseline and at one and three months post-intervention. The intervention consisted of two same sex sessions and two couples sessions with ‘homework’ to practice skills between sessions. The same intervention modules were used at each site, tailored for local appropriateness. Participants at each site were enthusiastic about the intervention, citing information about HIV serodiscordancy and the opportunity to meet couples ‘like us’ as important features. Participants reported increased comfort discussing sex and condoms with their partner, although some participants remain concerned about situations when condoms might not be used (e.g. when drunk). At three-month follow up 90% of the participants reported having been able to use the skills from the intervention with their partner. McGrath and colleagues’ results highlight the feasibility of this couples group-based intervention and the need for ongoing support for discordant couples. Editors’ note: With transmission within serodiscordant stable couples increasingly predominant in these and other countries, knowledge of HIV status is an important first step for couples. Many more interventions such as the one described here which break down the isolation of serodiscordant couples and support them as they introduce new skills and behaviours in their relationship are needed.


Osmond and colleagues assessed differences in HIV prevalence and sexual risk behaviour among men who have sex with men (MSM) between 1997 and 2002 in San Francisco. The authors used 2 population-based random-digit-dial telephone surveys of MSM households in San Francisco in 1997 (n=915) and 2002 (n=879). Their results showed that the estimated HIV prevalence increased from 19.6% in 1997 to 26.8% in 2002. Measures of sexual risk also increased. Unprotected anal intercourse with a partner of different or unknown HIV serostatus increased from 9.3% to 14.6%. Mean number of male partners increased from 10.7 to 13.8. The largest reported increase was 18.9% to 26.8% for «serosorting,» or choosing unprotected anal intercourse partners believed to have the same HIV serostatus as oneself. Men aged 30 to 50 reported the largest increase in unprotected anal intercourse, whereas men aged 18 to 29 reported the largest increase in serosorting. Changes in the age distribution did not explain the increase in risky behaviour. The authors concluded that both HIV prevalence and sexual risk increased substantially among MSM in San Francisco between 1997 and 2002. Serosorting is being adopted more frequently than condom use by young MSM, but its effectiveness as a harm reduction strategy is not known. Editors’ note: The increase in unprotected anal intercourse in older men suggests waning behavioural change maintenance whereas the tendency for younger men to practice serosorting suggests that this age group is more likely to believe that this strategy is effective. Discussing these findings with members of the community of men who have sex with men in San Francisco could provide useful information for designing tailored preventive strategies for the resurgence in HIV transmission.

Numerous observational studies and three clinical trials have shown male circumcision to be partially protective against HIV acquisition in heterosexual men. This has led to consideration of introducing circumcision as an HIV prevention strategy in parts of sub-Saharan Africa. This study assesses the acceptability of male circumcision as an intervention to improve male genital hygiene and reduce sexually transmitted infections, including HIV-1 in Zambia. Thirty-four focus group discussions were conducted - 17 with men and 17 with women - in four districts chosen to represent urban and rural communities where circumcision is and is not traditionally practiced. In communities where circumcision is little practiced, the main facilitators for acceptance were improved genital hygiene, HIV/STI prevention, and low cost. The main barriers were cultural tradition, high cost, pain, and concerns for safety. If male circumcision is proven to reduce risk for HIV and STIs, most participants reported that they would seek circumcision for themselves or their partners or their sons if it was free or at a minimal cost. Acceptability of male circumcision for STI and HIV prevention appears to be high in Zambia. Editors' note: This study joins thirteen others in sub-Saharan Africa with similar findings. Safety and cost are clear concerns which preoccupy everyone from local to national to global levels. Training modules based on the WHO/UNAIDS/JPIEGO surgical manual (Male Circumcision under Local Anaesthesia) are under development while work assessing resource needs and determining ways of minimizing costs is proceeding.

3. Treatment and care


The aim of this study by Ho and colleagues was to determine a minimum threshold CD4 count for highly active antiretroviral therapy (HAART) initiation in HIV-infected patients. A schema using longitudinal data from a clinical cohort was designed. The presenting CD4 counts of asymptomatic HIV-infected patients in Hong Kong were evaluated in relation to their progression to AIDS within 1 year of diagnosis of HIV infection. A graph was generated to depict the changes in the percentage of cumulative AIDS diagnoses for every 10 cell/microL increase in presenting CD4 count. Of 181 patients, 24 had developed AIDS within 1 year of diagnosis of HIV infection. Setting the CD4 count threshold at 150 cells/microL gave a good balance between the number of preventable AIDS-defining events and the number of non-AIDS patients initiating HAART. No extra AIDS-defining events occurred when the CD4 count threshold was reduced from 200 to 150 cells/microL, despite the addition of 13 more patients. In multivariate Cox regression analysis, presenting CD4 count was a significant predictor for AIDS occurrence. The relative hazard for AIDS occurrence of patients with presenting CD4 counts ≤150 cells/microL was 27-fold greater. The authors suggest a CD4 count of 150 cells/microL as the minimum threshold for HAART initiation in a cohort of Chinese HIV-infected patients. At this level, 20.8% of the AIDS-defining events could be prevented. While a cut-off of 200 cells/microL remains a standard for considering HAART initiation, the minimum threshold signifies a critical moment for timely intervention to be introduced. Editors' note: Expert opinions about when to start ART vary. Although these authors demonstrate that lowering the CD4 count threshold for starting ART from 200 to 150 led to no extra AIDS-defining events, acting on this
finding requires both knowledge of HIV status and regular clinical follow-up with CD4 counts to know when this threshold is reached. Know your status campaigns and increased access to CD4 count testing in low- and middle-income countries are both essential for good clinical management in any case.


Editors’ Summary: To date, in many countries, marginalized HIV-infected populations, such as ethnic minorities, migrants, those exchanging sex for survival and injecting drug users have been excluded or have been delayed from receiving appropriate care because other populations are given priority amidst concerns about adherence. Nevertheless, it has been shown that 'pretreatment' information is less predictive of adherence than patient’s experience with treatment, and that injecting drug users can adhere to ART as closely as other transmission groups if they receive adequate comprehensive care including substitution treatment. Incarceration as well as encounters with the police have already been shown to be highly associated with reduced adherence to ART and with virological failure. Depending on ART coverage, on the frequency of arbitrary detentions and 'forced treatment interruptions' as a result of incarceration, and on the prevalence of HIV in such 'bridging groups', the occurrence of HIV-resistant strains in these populations may become so sharply elevated that the public health benefits of ART scale-up are weakened, compromising the success of national public health policy for HIV prevention and care. The existence of cooperation between law enforcement agencies and public health institutions becomes the only constructive preamble for a successful scale-up that would also be accessible and effective for marginalized populations. Editors' note: Aside from re-examining incarceration policies generally, ensuring that there is no interruption in treatment for individuals entering detention is key to avoiding emergence of drug resistance and treatment failure. Prison health services need to work with the police and public health authorities to minimise treatment interruptions for people on antiretroviral treatment who will come under their responsibility. In some settings, enlightened police take individuals home to pick up their antiretroviral medication before they are transported to prison.


Sentinel testing programs for HIV drug resistance in resource-limited settings can inform policy on antiretroviral therapy (ART) and drug sequencing. Walensky and colleagues' objective was to examine the value of resistance surveillance in influencing recommendations toward effective and cost-effective sequencing of ART regimens. A state-transition model of HIV infection was adapted to simulate clinical care in Cote d'Ivoire and evaluate the incremental cost-effectiveness of (1) no ART; (2) ART beginning with a non-nucleoside reverse transcriptase inhibitor (NNRTI)-based regimen followed by a boosted protease inhibitor (PI)-based regimen; and (3) ART beginning with a boosted PI-based regimen followed by an NNRTI-based regimen. At a 5% prevalence of NNRTI resistance, a strategy that started with a PI-based regimen had a smaller health benefit and higher cost-effectiveness ratio than a strategy that started with an NNRTI-based regimen (cost-effectiveness ratio $910/year of life saved). Results consistently favoured initiation with an
NNRTI-based regimen, regardless of the population prevalence of NNRTI resistance (up to 76%) and the efficacy of an NNRTI-based regimen in the setting of resistance. The most influential parameters on the cost-effectiveness of sequencing strategies were boosted PI-based regimen costs and the efficacy of this regimen when used as second-line therapy. The authors conclude that drug costs and treatment efficacies, but not NNRTI resistance levels, were most influential in determining optimal HIV drug sequencing in Côte d'Ivoire. Results of surveillance for NNRTI resistance should not be used as a major guide to treatment policy in resource-limited settings. Editors' note: This modelling of the impact of population NNRTI resistance levels on treatment regimen choice provide support for the current first line regimens recommended by the World Health Organisation.

4. Orphans


While over 90 per cent of the 15 million children who have been orphaned by AIDS are cared for by family members, there is little information about whether adults can meet orphans' essential caregiving needs while working to economically survive. Using a survey Heymann and colleagues conducted in Botswana of 1033 working adults, the authors analyse the experience of adults who are caring for orphans. Over one-third of working adults were caring for orphans and many with few financial resources: 82% were living on household incomes below US$10 purchasing power parity adjusted per person per day. Because of their caregiving responsibilities, they were less able to supplement income with overtime, weekend, evening, or night work. At the same time caregiving responsibilities meant orphan caregivers spent fewer hours caring for their own children and other family members. Nearly half of orphan caregivers had difficulties meeting their children's needs, and nearly 75% weren't able to meet with children's teachers. Pay loss at work compounded the problems: One-quarter of orphan caregivers reported having to take unpaid leave to meet sick childcare needs and nearly half reported being absent from work for children's routine health care. This paper makes clear that if families are to provide adequate care for orphans while economically surviving there needs to be increases in social supports and improvements in working conditions. (McGill) Editors' note: Effective family support strategies require commitment from all levels and engagement from communities in defining responses tailored to their situation which reinforce family and community resilience.


AIDS deaths could have a major impact on economic development by affecting the human capital accumulation of the next generation. Evans and Miguel estimate the impact of parent death on primary school participation using an unusual five-year panel data set of over 20,000 Kenyan children. There is a substantial decrease in school participation following a parent death and a smaller drop before the death (presumably due to pre-death morbidity). Estimated impacts are smaller in specifications without individual fixed effects, suggesting that estimates based on cross-sectional data are biased toward zero. Effects are largest for children whose mothers died and, in a novel finding, for those with low baseline academic performance. Editors' note: Maternal deaths are more likely to lead to withdrawal from school of children, particularly girl children, who take on household and other tasks that
had been performed by their mother. The low baseline academic performance alluded to here may reflect changes in nutritional status, stress or school absenteeism as a result of parental illness. The impact of becoming an orphan on school attendance has long wave effects on social capital. Those who have less schooling than would have otherwise been the case will have reduced employment prospects and as a result their children may suffer increased socio-economic hardship.

5. HIV Testing


Botswana has high HIV prevalence among pregnant women (37.4% in 2003) and provides free services for prevention of mother-to-child transmission (PMTCT) of HIV. Nearly all pregnant women (>95%) have antenatal care (ANC) and deliver in hospital. Uptake of antenatal HIV testing was low from 1999 through 2003. In 2004, Botswana’s President declared that HIV testing should be « routine but not compulsory » in medical settings. Health workers were trained to provide group education and recommend HIV testing as part of routine ANC services. Logbook data on ANC attendance, HIV testing, and uptake of PMTCT interventions were reviewed before and after routine testing training, and ANC clients were interviewed. After routine testing started, the percentage of all HIV-infected women delivering in the regional hospital who knew their HIV status increased from 47% to 78% and the percentage receiving PMTCT interventions increased from 29% to 56%. ANC attendance and the percentage of HIV-positive women who disclosed their HIV status to others remained stable. Interviews indicated that ANC clients supported the policy. Routine HIV testing was more accepted than voluntary testing in this setting and led to substantial increases in the uptake of testing and PMTCT interventions without detectable adverse consequences. Routine testing in other settings may strengthen HIV care and prevention efforts. Editors’ note: The terminology in this report may be confusing (routine, opt-out, recommended) but the practice does follow the WHO/UNAIDS initiated testing and counselling guidelines. Practitioners are recommending HIV testing to pregnant women so this is provider-initiated testing and although more than three-quarters of women are accepting to be tested, there are some women who are deciding not to be tested, suggesting that it is voluntary testing. Botswana has very high antenatal care coverage which greatly improves the likelihood of higher PMTCT coverage.

6. Stigma and social exclusion


Scientific studies demonstrate high rates of HIV infection among male-to-female transgender individuals and that stigma and discrimination place them at increased risk for infection. However, there is little research examining how gender roles contribute to HIV risk. This paper reports on in-depth interviews with 20 male-to-female transgender individuals attending a community clinic. Data reveal that stigma and discrimination create a heightened need for them to feel safe and loved by a male companion and that in turn places them at a higher risk for acquiring HIV. Male-to-female transgender individuals appear to turn to men to feel loved and affirmed as women; their main HIV risk stems from their willingness to engage with sexual partners who provide a sense of love and acceptance but
who also may also request unsafe sexual behaviours. A model illustrating how HIV risk is generated from stigma and discrimination is presented. **Editors’ note:** Male-to-female transgender individuals may experience considerable stigma and discrimination which may make them more likely to accept risky sexual behaviour in exchange for protection from a male partner - not unlike many women who lack the power to negotiate safe sex practices.

7. **Basic Science**


A variety of molecules in human blood have been implicated in the inhibition of HIV-1. However, it remained elusive which circulating natural compounds are most effective in controlling viral replication in vivo. To identify natural HIV-1 inhibitors Munch and colleagues screened a comprehensive peptide library generated from human hemofiltrate. The most potent fraction contained a 20-residue peptide, designated VIRUS-INHIBITORY PEPTIDE (VIRIP), corresponding to the C-proximal region of alpha1-antitrypsin, the most abundant circulating serine protease inhibitor. The authors found that VIRIP inhibits a wide variety of HIV-1 strains including those resistant to current antiretroviral drugs. Further analysis demonstrated that VIRIP blocks HIV-1 entry by interacting with the gp41 fusion peptide and showed that a few amino acid changes increase its antiretroviral potency by two orders of magnitude. Thus, as a highly specific natural inhibitor of the HIV-1 gp41 fusion peptide, VIRIP may lead to the development of another class of antiretroviral drugs. **Editors’ note:** The identification of this natural defence and its action against even drug-resistant HIV is encouraging.

8. **Epidemiology**

Parris GE. How did the ancestral HIV-1 group M retrovirus get to Leopoldville from southeastern Cameroon? *Med Hypotheses* 2007 Apr 18; [Epub ahead of print]

In previous papers in this journal, Parris has described and elaborated a hypothesis for the origin and evolution of a strain of HIV that has produced a lethal pandemic. Here the author addresses the provocative question of how the ancestral HIV-1 group M retrovirus got to Leopoldville (Kinshasa, where the pandemic clearly spawned) from south-eastern Cameroon (where the HIV-1 strains all seemed to originate from transfer of SIV(cpz) to humans). Consistent with the phylogenetic history of HIV-1 group M (e.g., by Korber et al.), the author places the critical relocation of the ancestral HIV-1 in the timeframe 1920-1927. However, unlike other hypotheses, the author believes that the ancestral retrovirus was already well adapted to humans and can be identified as HIV-1 Group M subtype A(pre)-1927. Based on documents from that time period (1920-1928), it can be shown that it was not unusual for native Africans to be brought as far as 500 miles for treatment at the Leopoldville clinic (national borders were no issue because health agencies had mandates to work throughout Cameroon and Congo-Brazzaville). Specifically, sleeping sickness (trypanosomiasis) was one of the diseases of most concern at the Leopoldville clinic; in the period 1926-1928 there was an outbreak of sleeping sickness in Cameroon; and one of the native African children in the pamaquine (plasmoquineTM) study that the author believes selected for the major HIV-1 group M subgroups had trypanosomiasis. Thus, this child (or other patients/relatives from
Cameroon) could have brought the ancestral HIV-1 group M retrovirus to the Leopoldville laboratory and spread it among the group of children who were undergoing treatment for malaria between February and August 1927. The diagnosis and monitoring of these protozoan diseases (trypanosomiasis and malaria) involved repetitive sampling of blood, which provides many opportunities for spreading the ancestral HIV-1 infection. Editors’ note: This is an interesting hypothesis which remains exactly that - an hypothesis published in a journal of medical hypotheses.

That was HIV This Week, signing off.

---

Editors’ notes on journal access

For readers in all countries:
All abstracts in HIV This Week are freely available on the Web.

You can access a majority of scientific journals free of charge no matter where you are located, but for some journals you do need a subscription to access the full text of an article. Some journals are free to readers in all countries either through ScienceDirect or through the journal’s own website.

For articles available through ScienceDirect, you should follow the link http://www.sciencedirect.com/ to the ScienceDirect website. Then, type in the title of the journal for which you are searching.

Some journals are open access, available to readers in all countries: American Medical Association journals (http://pubs.ama-assn.org/), American Society of Clinical Oncology (2 journals), Australian Medical Association (1 journal), BioMed Central journals (http://www.biomedcentral.com/), BMJ journals (http://journals.bmj.com/), Canadian Medical Association (1 journal), Nature Publishing Group journals (http://www.nature.com/), Public Library of Science journal (http://medicine.plosjournals.org/) and Science (1 journal).

Other journals offer free access to full-text articles after a certain period of time (see lists at High Wire Press http://highwire.stanford.edu/lists/freeart.dtl and PubMed Central http://www.pubmedcentral.nih.gov/).

For residents of low- and middle-income countries: the Health InterNetwork Access to Research Initiative (HINARI)
HINARI, set up by the World Health Organisation (WHO) and major publishers, enables readers in low- and middle-income countries to gain access to one of the world’s largest collections of biomedical and health literature. Over 3400 journal titles are now available to health institutions in 113 countries, benefiting many thousands of health workers and researchers, and in turn, contributing to improved world health. More information on the HINARI programme and eligible countries is available at http://www.who.int/hinari/en/, e-mail: hinari@who.int.
Local, not-for-profit institutions in low- and middle-income countries may register for access to the journals through HINARI. Institutions in countries with GNP per capita below $1000 are eligible for free access. Institutions in countries with GNP per capita $1000-$3000 pay a fee of $1000 per year/institution.

For employees of UNAIDS or WHO:
If you work for WHO or UNAIDS, you can access a number of journals by going to the WHO library. You can also see the full list of journals you can access freely on the web (including usernames and passwords) by going to the WHO Library website, accessible through the home page of WHO intranet https://intranet.who.int/ under Information Resources. If you work for UNAIDS, HIV This Week is also available on the intranet at the link https://intranet.unaids.org/HIVThisWeek/2007/index.htm.