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HIV This Week: what scientific journals said

Welcome to the twenty-seventh issue of ***HIV This Week!*** In this issue, we cover **nutrition** (should you be taking micronutrients?), **herpes and HIV** (increased risk for mother-to-child HIV transmission), **dental services** (more education needed for dentists in Riyadh), **universal access** (stockouts in francophone Africa; stigma and discrimination in China), **epidemiology** (HIV genetic diversity – the wily virus), **child health** (maternal HIV and infant survival in Ghana), **TB/HIV** (why knowledge of HIV serostatus can help), **new HIV prevention technologies** (how microbicides could work), **sexual behaviour** (3.5 times more money for unprotected sex in Kinshasa), **substance use and HIV** (alcohol and sex in southern Africa; cocaine makes the difference in Vancouver), **treatment** (what are virostatics?; predictors of mortality in rural Africa; a new idea for preventing opportunistic infections), **HIV prevention trials** (making informed consent real for adolescents; why pregnant women are difficult to recruit); **young people** (meaningful sex education from your mother?), **traditional medicine and HIV** (challenges in initiating collaboration in Tanzania), **international initiatives** (the promise of UNITAID; the political economy of leadership).

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.

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1. Nutrition

Drain PK, Kupka R, Mugusi F, Fawzi WW. Micronutrients in HIV-positive persons receiving highly active antiretroviral therapy. *Am J Clin Nutr* 2007;85:333-45.

In HIV-infected persons, low serum concentrations of vitamins and minerals, termed micronutrients, are associated with an increased risk of HIV disease progression and mortality. Micronutrient supplements can delay HIV disease progression and reduce mortality in HIV-positive persons not receiving highly active antiretroviral therapy. With the transition to more universal access to antiretroviral therapy, a better understanding of micronutrient deficiencies and the role of micronutrient supplements in HIV-positive persons receiving antiretroviral therapy has become a priority. The provision of simple, inexpensive micronutrient supplements as an adjunct to antiretroviral therapy may have several cellular

and clinical benefits, such as a reduction in mitochondrial toxicity and oxidative stress and an improvement in immune reconstitution. Drain and colleagues reviewed observational and trial evidence on micronutrients in HIV-positive persons receiving antiretroviral therapy to summarize the current literature and to suggest future research priorities. A small number of observational studies have suggested that some, but not all, micronutrients may become replete after antiretroviral therapy initiation, and few intervention studies have found that certain micronutrients may be a beneficial adjunct to antiretroviral therapy. However, most of these studies had some major limitations, including a small sample size, a short duration of follow-up, a lack of adjustment for inflammatory markers, and an inadequate assessment of HIV-related outcomes. Therefore, few data are available to determine whether antiretroviral therapy ameliorates micronutrient deficiencies or to recommend or refute the benefit of providing micronutrient supplements to HIV-positive persons receiving antiretroviral therapy. Because micronutrient supplementation may cause harm, randomized placebo-controlled trials are needed. Future research should determine whether antiretroviral therapy initiation restores micronutrient concentrations, independent of inflammatory markers, and whether micronutrient supplements affect HIV-related outcomes in HIV-positive persons receiving antiretroviral therapy. **Editors' note: There is no doubt that nutrition is important in optimizing health status but, as this review suggests, it has not been demonstrated that micronutrient supplements provide benefit to people living with HIV, whether or not they are on antiretroviral treatment.**

2. Herpes and HIV

Drake AL, John-Stewart GC, Wald A, Mbori-Ngacha DA, Bosire R, Wamalwa DC, Lohman-Payne BL, Ashley-Morrow R, Corey L, Farquhar C. Herpes simplex virus type 2 and risk of intrapartum human immunodeficiency virus transmission. *Obstet Gynecol* 2007;109:403-9.

Drake and colleagues determined whether herpes simplex virus type 2 (HSV-2) infection was associated with risk of intrapartum human immunodeficiency virus type 1 (HIV-1) transmission and to define correlates of HSV-2 infection among HIV-1-seropositive pregnant women. The authors performed a nested case control study within a perinatal cohort in Nairobi, Kenya. Herpes simplex virus type 2 serostatus and the presence of genital ulcers were ascertained at 32 weeks of gestation. Maternal cervical and plasma HIV-1 RNA and cervical herpes simplex virus DNA were measured at delivery. Their results showed one hundred fifty-two (87%) of 175 HIV-1-infected mothers were herpes simplex virus 2 (HSV-2) seropositive. Among these 152 HSV-2-seropositive women, nine (6%) had genital ulcers at 32 weeks of gestation, and 13 (9%) were shedding herpes simplex virus in cervical secretions. Genital ulcers were associated with increased plasma HIV-1 RNA levels (P=.02) and an increased risk of intrapartum HIV-1 transmission (16% of transmitters versus 3% of nontransmitters had ulcers; P = .003), an association which was maintained in multivariable analysis adjusting for plasma HIV-1 RNA levels (P=.04). The authors found a borderline association for higher plasma HIV-1 RNA among women shedding HSV (P=.07) and no association between cervical herpes simplex virus shedding and either cervical HIV-1 RNA levels or intrapartum HIV-1 transmission (P=.04 and P=.05, respectively). The authors concluded that herpes simplex virus type 2 is the leading cause of genital ulcers among women in sub-Saharan Africa and was highly prevalent in this cohort of pregnant women receiving prophylactic zidovudine. After adjusting for plasma HIV-1 RNA levels, genital ulcers were associated with increased risk of intrapartum HIV-1 transmission. These data

suggest that management of herpes simplex virus 2 (HSV-2) during pregnancy may enhance mother-to-child HIV-1 transmission prevention efforts. **Editors' note: Genital herpes has been known for years to increase the risk of both HIV acquisition and transmission sexually so it is not surprising that it increases mother-to-child transmission. For overt genital ulceration detected during labour, Caesarean section is usually recommended to prevent neonatal herpes. Randomised controlled trials of herpes suppressive treatment to reduce HIV infectivity during sexual intercourse are underway however, clinical trials are also needed to assess whether long term herpes suppressive therapy in pregnancy will reduce mother-to-child transmission of HIV.**

3. Dental services

Al-Rabeah A, Moamed AG. Infection control in the private dental sector in Riyadh. *Ann Saudi Med* 2002;22:13-7.

With the global rise in the number of people infected with hepatitis B and C and HIV viruses, cross infection has become of paramount concern to dental health care workers and their patients. Al-Rabeah and Moamed assessed infection control practices in the private dental sector in Riyadh, Saudi Arabia. The authors conducted a cross-sectional survey of private dental practices in the city of Riyadh after choosing a total sample size of 132 dental units using the proportional allocation method. Three hospitals, 45 clinics and 39 centres were selected randomly. A self-administered questionnaire was completed by dentists working in the selected settings. Of the 206 questionnaires sent, 203 (98.5%) were completed. The mean age of the responding dentists was 36.8+/-6.7 years. A total of 139 dentists (68.5%) were general practitioners and 64 (31.5%) were specialists. A total of 129 (63.5%) stated that they had been vaccinated against hepatitis B virus and 189 (93.1%) stated that they always took a medical history of each patient before treatment. All the studied dentists reported that they always used gloves for every patient during dental treatment, and 90.6% stated that they always wore a face mask during dental treatment. The primary source of infection control information for the studied dentists was from the colleges (78.3%). Only 37.9% of the dentists sterilized their handpieces by autoclaving, while the other 53.7% used disinfectant. About <u>56% disposed of used needles and sharp instruments in special safety containers</u>. Multivariate logistic regression analysis revealed that working in clinics, age >40 years and knowledge of correct sterilization steps were independent promoting factors for adherence to infection control practice (OR=3.8, CI=1.2-12.1; OR=10.2, CI=1.61-64.8; OR=5.6, CI=1.04-29.9, respectively). The authors conclude that the development of infection control manual for dental practices, in addition to a campaign of health education for dentists in the private sector, is recommended. **Editors' note: Studies such as this demonstrate the extent to which universal precautions and safety measures can be improved even in well resourced settings. It is surprising that over a third of dentists in Riyadh have not been vaccinated against hepatitis B.**

4. Universal access

Boisseau C, Degui H, Bruneton C, Rey JL. [Poor access to antiretroviral treatment in French-speaking Africa: situation in 2004]. *Med Trop (Mars)* 2006;66:589-92.

Boisseau and colleagues carried out a survey by questionnaire and interview with persons in charge of purchasing in central structures and AIDS control programs in <u>18 French-speaking African countries</u> between June and October 2004. Survey data showed that a total of 3300

patients received antiretroviral treatment during the study period. This corresponds to a treatment rate of 0.1 to 9.6% of the number of patients requiring antiretroviral treatment. All countries reported interruptions of the antiretroviral supply for a variety of reasons. The main causes were budgetary issues and procedural complexity involving financial aid. The prices charged to the patients varied greatly in function of national policies. Cost price also varied in function of the negotiating leverage of the purchasing central. The authors conclude that in order to improve general access to antiretroviral treatment and to reduce the number of supply shortages more training will be required in management and distribution of medicines. They conclude that it would also be useful to improve communications between the persons in charge of national purchasing structures. **Editors' note: Patient access and adherence to treatment are known preoccupations of treatment programmes but antiretroviral drug shortages and financing problems are management concerns at the level of central procurement that have to be urgently addressed for effective supply chain management.**

Deng R, Li J, Sringernyuang L, Zhang K. Drug abuse, HIV/AIDS and stigmatisation in a Dai community in Yunnan, China. *Soc Sci Med* 2007 Jan 23; [Epub ahead of print]

The latest data indicate that between 540,000 and 760,000 people are infected with HIV in China. Although minority nationalities represent 8.1% of China's total population, they account for more than 30% of the reported HIV cases. Deng and colleagues examined stigma and discrimination against drug abusers and people living with HIV in a Dai minority nationality community in Yunnan, China. The authors used qualitative research methods, which included participatory observations, in-depth interviews, focus-group discussions, transect walking and community mapping. A combination of different sampling strategies was used to maximise diversity of the initially selected sample. The data revealed deeply entrenched stigma and overt discrimination against drug abusers and people living with HIV that manifested in familial, work, civil and institutional contexts. The stigma reflected pre-existing cultural, religious sanctions against "deviant behaviours". Intervention programmes that were insensitive to the local culture and religion may have also contributed in part to the stigmatisation of drug abusers and people living with HIV. The major impact of stigma was that it created a vicious cycle of social isolation, marginalisation and thus addiction relapse. This in turn reinforced the stigmatisation and discrimination against drug abusers and thus hindered efforts towards prevention and control of HIV. **Editors' note: Stigma and discrimination drive the epidemic underground, undermining HIV prevention and delaying treatment provision to those most in need. Sustained efforts to overcome them are essential to progress towards universal access.**

5. *Epidemiology*

Butler IF, Pandrea I, Marx PA, Apetrei C. HIV genetic diversity: biological and public health consequences. *Curr HIV Res* 2007;5:23-45.

The devastating consequences of the HIV pandemic will probably only be controlled when a vaccine is developed that is safe, effective, affordable, and simple enough to permit implementation in developing countries where the impact of HIV is most severe. However, the major obstacle for the control of the spread of HIV lies in the diversity of HIV and its enormous evolutionary potential. Butler and colleagues in this review article describe the numerous HIV forms that contribute to the HIV pandemic. Two viral types (HIV-1 and HIV-2), numerous groups (M, N and O for HIV-1 and A through H for HIV-2) and numerous

subtypes, sub-subtypes and circulating recombinant forms (CRF) have emerged during the last 50 years. At least nine different genetic HIV-1 subtypes and over 20 CRFs were defined within group M, which accounts for the majority of cases in the HIV pandemic. Even though HIV-1 subtype C and A predominate globally, the other viral forms co-circulate all over the world and may have a major impact for the strategies of pandemic control. The authors review the distribution of these divergent viral forms worldwide and they discuss the potential consequences of such a tremendous viral diversity for diagnostic, monitoring, treatment and the development of an effective vaccine. **Editors' note: This overview describes HIV viral diversity and the continuing rapid evolution of this wily virus. When two subtypes encounter each other in the same individual, they swap and trade gene segments, creating new 'recombinants' – yet another reason, beyond the personal risk, to avoid getting a second HIV infection.**

6. Child Health

Hong R, Banta JE, Kamau JK. Effect of maternal HIV infection on child survival in Ghana. *J Community Health* 2007;32:21-36.

Hong and colleagues measured the association between maternal HIV infection and infant mortality in Ghana. The authors used a censored synthetic cohort life table based on the birth history of 3639 childbirths during 1999-2003 obtained from the interviews of a nationally representative sample of 5691 women age 15-49 in 6251 households in the 2003 Ghana Demographic and Health Survey. The survey collected demographic, socioeconomic, and health data of the respondents and, as well, obtained voluntary counselling test for HIV infection from all eligible women. The effects of maternal HIV status and other factors on infant mortality were estimated using multivariate survival regression analysis and the results are presented as Hazard Ratios (HR) with 95% confident interval (95% CI). Children born to HIV infected mothers were three times as likely to die during infancy as those born to uninfected mothers (HR = 3.01; 95% CI: 1.64, 5.50). Controlling for other factors affecting infant mortality further sharpens this relationship (HR = 3.51; 95% CI: 1.87, 6.61). Not receiving antenatal care, low birth weight, and living in households that use high pollution cooking fuels were associated with a higher risk of infant mortality. The authors conclude that maternal HIV status is a strong predictor of infant mortality in Ghana, independent of several other factors. The results suggest that the HIV epidemic has had great impact on child well-being and child survival. This impact tends to increase as the HIV epidemic matures and infection in adults increases. **Editors' note: The association between maternal HIV infection and infant mortality is likely the result of direct effects of mother-to-child HIV transmission as well as indirect effects. The latter would include maternal illness affecting parenting capacity and immune deficiency leading to reduced levels of protective maternal antibodies to childhood diseases such as measles. The antibodies normally cross the placenta to provide passive protection during the first months of life.**

7. TB/HIV

Nahid P, Gonzalez LC, Rudoy I, de Jong BC, Unger A, Kawamura LM, Osmond DH, Hopewell PC, Daley CL. Treatment Outcomes of Patients with HIV and Tuberculosis. *Am J Respir Crit Care Med* 2007 Feb 8; [Epub ahead of print]

The optimal length of tuberculosis treatment in patients co-infected with human immunodeficiency virus (HIV) is unknown. Nahid and colleagues evaluated the treatment

outcomes for HIV-infected patients stratified by duration of rifamycin-based tuberculosis therapy. The authors retrospectively reviewed data on all patients with tuberculosis reported to the San Francisco Tuberculosis Control Program from 1990-2001. Patients were followed for up to 12 months after treatment completion. Of 700 patients, 264 (38%) were HIV infected, 315 (45%) were not infected, and 121 (17%) were not tested. For a variety of reasons, mean duration of treatment was extended to 10.2 months for HIV infected versus 8.4 months for uninfected/unknown (p<0.001). Seventeen percent of the HIV-infected and 37% of the HIV uninfected/unknown patients received 6-month "short-course" rifamycin-based therapy. The relapse rate among HIV-infected was 9.3 per 100 person-years versus 1.0 in HIV-uninfected/unknown (p<0.001). HIV-infected individuals who received a standard 6-month rifamycin-based regimen were more likely to relapse than those treated longer (adjusted hazard ratio [AHR], 4.33, p=0.02). HIV-infected individuals who received intermittent therapy were also more likely to relapse than those treated on daily basis (AHR, 4.12, p=0.04). Use of highly active antiretroviral therapy was associated with more rapid conversion of smears and cultures as well as improved survival. The authors concluded that HIV-infected patients who received a 6-month rifamycin-based course of tuberculosis treatment or received intermittent therapy had a higher relapse rate than HIV-infected subjects who received longer therapy or daily therapy, respectively. Standard 6-month therapy may be insufficient to prevent relapse in patients with HIV. **Editors' note: This study demonstrates the advantages of HIV serostatus knowledge in the context of tuberculosis treatment. Diagnostic testing, under the standard 3Cs conditions (confidentiality, informed consent and counselling), is recommended when a person presents signs or symptoms consistent with HIV-related disease. In the case of tuberculosis, treatment can be tailored to achieve better outcomes in co-infected persons.**

8. New HIV prevention technologies

Nikolic DS, Garcia E, Piguet V. Microbicides and other topical agents in the prevention of HIV and sexually transmitted infections. *Expert Rev Anti Infect Ther* 2007;5:77-88.

According to information from UNAIDS, more than 42 million individuals are living with HIV worldwide. Most infected individuals live in developing countries where the availability of antiretroviral agents is still limited. As this pandemic is increasing largely through mucosal transmission, new methods of prevention are urgently needed. Nikolic and colleagues discuss how if available, agents that block HIV prior to or early after contact with mucosal epithelia would decrease the incidence of HIV infection and, therefore, potentially save millions of lives over the next few decades. The authors subdivide topically applied microbicides acting against HIV-1 into four subgroups, including agents directly inhibiting pathogens, agents acting on genital pH, agents blocking pathogen entry and replication inhibitors. In addition, the authors note how microbicides might also allow fighting against other sexually transmitted infections, such as herpes simplex viruses. The authors conclude that with concerted efforts directed towards developing efficient microbicides, topical anti-infective compounds may well become a new weapon against sexually transmitted infections, including HIV, in everyday clinical practice. **Editors' note: Despite the recent stopping of the cellulose sulfate trials, the microbicide field remains very active with other products based on different subgroups continuing in Phase III trials.**

9. Sexual behaviour

Ntumbanzondo M, Dubrow R, Niccolai LM, Mwandagalirwa K, Merson MH. Unprotected intercourse for extra money among commercial sex workers in Kinshasa, Democratic Republic of Congo. *AIDS Care* 2006;18:777-85.

Nturnbanzado and colleagues assessed the extent and correlates of the practice of engaging in unprotected intercourse for extra money among sex workers in Kinshasa, Democratic Republic of the Congo. The authors conducted a cross-sectional survey using a structured, interviewer-administered questionnaire among a convenience sample of 136 sex workers. More than one-quarter of sex workers (26.5%) engaged in unprotected intercourse for extra money. These sex workers charged about 3.5 times more for unprotected intercourse than for protected intercourse. Multivariate logistic regression showed that sex workers who engaged in unprotected intercourse for extra money were significantly more likely to live or work in non-downtown (lower socioeconomic) areas of Kinshasa (odds ratio [OR] = 3.07), to have at least one child less than six years of age (OR = 2.95), and to know other sex workers who engaged in the same practice (OR = 9.38). We hypothesize that desperate socioeconomic conditions combined with peer/social norms drive the practice of engaging in unprotected intercourse for extra money. Additional circumstances under which Kinshasa sex workers engaged in unprotected intercourse included intercourse with clients who tore their condoms to increase sexual pleasure (58.8% of sex workers), episodes of condom failure (56.8% of sex workers), and unprotected intercourse with regular noncommercial partners (only 5.3% of sex workers with noncommercial partners always used condoms with these partners). **Editors' notes: These findings reflect the desperate socioeconomic situations of these sex workers and highlight the need to address poverty and other underlying determinants in HIV prevention programming.**

10. Substance use and HIV

Kalichman SC, Simbayi LC, Kaufman M, Cain D, Jooste S. Alcohol Use and Sexual Risks for HIV/AIDS in Sub-Saharan Africa: Systematic Review of Empirical Findings. *Prev Sci* 2007 Jan 31; [Epub ahead of print]

Alcohol consumption is associated with risks for sexually transmitted infections, including HIV. In this paper, Kalichman and colleagues systematically review the literature on alcohol use and sexual risk behaviour in southern Africa, the region of the world with the greatest HIV burden. Studies show a consistent association between alcohol use and sexual risks for HIV infection. Among people who drink, greater quantities of alcohol consumption predict greater sexual risks than does frequency of drinking. In addition, there are clear gender differences in alcohol use and sexual risks; men are more likely to drink and engage in higher risk behaviour whereas women's risks are often associated with their male sex partners' drinking. Factors that are most closely related to alcohol and sexual risks include drinking venues and alcohol serving establishments, sexual coercion, and poverty. Research conducted in southern Africa therefore confirms an association between alcohol use and sexual risks for HIV. The authors conclude that sexual risk reduction interventions are needed for men and women who drink and interventions should be targeted to alcohol serving establishments. **Editors' note: This article highlights the relevance of venue-based HIV prevention programmes to reach drinking men and women at risk for HIV.**

Wood E, Lloyd-Smith E, Li K, Strathdee SA, Small W, Tyndall MW, Montaner JS, Kerr T. Frequent needle exchange use and HIV incidence in Vancouver, Canada. *Am J Med* 2007;120:172-9.

Opposition to needle exchange programs has been fuelled by a Vancouver study showing an association between frequent program use and elevated rates of human immunodeficiency virus (HIV) infection among injection drug users. Wood and colleagues evaluated possible explanations for the observed association between elevated HIV rates and frequent needle exchange attendance using a prospective observational cohort study of injection drug users in Vancouver, BC, Canada. HIV incidence rates were examined using stratified Kaplan-Meier methods and Cox proportional hazards regression. Between May 1996 and December 2004, 1035 individuals were recruited. At 48 months after recruitment, the cumulative HIV incidence rate was 18.1% among those reporting daily needle exchange use at baseline, compared with 10.7% among those who did not report this behaviour (P <.001). However, comparing HIV incidence among daily versus nondaily exchange users, while stratifying the cohort into those who did (23.2% vs 16.8%; P=.157) and did not (11.4% vs 9.0%; P=.232) report daily cocaine injection at baseline, the association between daily exchange use and HIV incidence was no longer significant. In an adjusted Cox model, daily exchange use was not associated with the time to HIV seroconversion (relative hazard=1.41 [95% confidence interval, 0.95-2.09]). The authors concluded that the differential HIV incidence rates between frequent and nonfrequent needle exchange attendees can be explained by the higher risk profile of daily attendees. Causal factors, including the high rates of cocaine injection and other local injection drug user characteristics, explain the Vancouver HIV outbreak. **Editors' note: This study emphasises the importance of looking at confounding factors, in this case cocaine use, in explaining differences in HIV incidence, rather than jumping to conclusions.**

11. Treatment

Lori F, Foli A, Kelly LM, Lisziewicz J. Virostatics: a new class of anti-HIV drugs. *Curr Med Chem* 2007;14:233-41.

Lori and colleagues discuss in this review article we discuss the features of a new class of antiretroviral combinations, namely "Virostatics". Virostatics are characterized by the combination of a drug directly inhibiting virus production (viro), and another drug indirectly inhibiting the virus by reducing cellular proliferation (static). In particular, we will focus on the combination of hydroxyurea and didanosine against HIV-1. Hydroxyurea and didanosine synergize to control viral replication and present with a favourable resistance profile, suppressing several resistant quasi-species. Because virostatics target essential cellular proteins, they exert an immune modulating activity and reduce viral targets (CD4 T cells), possibly with limited immunosuppressive effects. Importantly, a dose-finding clinical study has shown that decreasing the dose of hydroxyurea not only diminishes toxicity but also increases antiviral potency. Therefore, the combination of hydroxyurea and didanosine strikes a balance between viral suppression, drug-related toxicity and viral escape, and could have a role both in induction and maintenance therapy. The authors appraise what is known about hydroxyurea and didanosine and specifically address the major advantages, i.e. novel mechanism of action leading to a new class of drugs and resistance profile providing durability, as well as the major criticisms of this combination, i.e. toxicity and reasons for prescribing a perceived immune suppressant to immune compromised patients. **Editors' note: This concept builds on the knowledge that part of the immune deficiency in HIV is the result of the body's own response in destroying HIV infected T-cell lymphocytes. Further study is needed to see if the promise of virostatic drug combinations is real.**

Erikstrup C, Kallestrup P, Zinyama R, Gomo E, Mudenge B, Gerstoft J, Ullum H. Predictors of Mortality in a Cohort of HIV-1-Infected Adults in Rural Africa. *J Acquir Immune Defic Syndr* 2007 Jan 25; [Epub ahead of print]

CD4 cell count and plasma HIV RNA level are used to monitor HIV-infected patients in high-income countries, but the applicability in an African context with frequent concomitant infections has only been studied sparsely. Moreover, alternative inexpensive markers are needed in the attempts to roll out antiretroviral treatment in the region. Erikstrup and colleagues explored the prognostic strengths of classic and alternative progression markers in this study set in rural Zimbabwe. The authors followed 196 treatment-naive HIV-1-infected patients from the Mupfure Schistosomiasis and HIV Cohort, Zimbabwe. CD4 cell count, HIV RNA level, hemoglobin (HB), total lymphocyte count (TLC), body mass index, clinical staging (Centers for Disease Control and Prevention [CDC] classification), and self-reported level of function (Karnofsky Performance Scale score) were assessed at baseline; participants were followed until death or last follow-up (3-4.3 years). All parameters except TLC predicted survival in univariate Cox models. HIV RNA level ($P = 0.001$), HB ($P = 0.018$), CD4 cell count ($P = 0.047$), and CDC category C ($P = 0.007$) remained significant in multivariate analysis. The authors conclude that <u>HIV RNA level and CD4 cell count predict mortality with prognostic capabilities similar to findings from high-income countries</u>. As well, hemoglobin and clinical staging were strong independent predictors and might be considered candidates for alternative HIV progression markers. **Editors' note: Although haemoglobin is often more easily available than RNA levels and CD4 counts, it is not specific to HIV and therefore cannot be relied on to assess HIV progression on its own.**

Wanchu A, Bhatnagar A, Bambery P, Singh S, Varma S. Prevention of opportunistic infections in HIV infection by pentoxiphylline. *Indian J Med Res* 2006;124:705-8.

Levels of tumour necrosis factor (TNF) are increased in patients with HIV infection leading to increased apoptosis and reduced CD4 cell life. Pentoxiphylline is a TNF inhibitor with properties that might make it useful for the treatment of HIV infection. These include improved cell mediated immunity and inhibition of viral replication. Wanch and colleagues carried out this study to determine the therapeutic utility of pentoxiphylline in improving constitutional manifestations, preventing opportunistic infections and sustaining CD4 counts among asymptomatic HIV infected individuals (i.e., those with no opportunistic infection). Individuals with HIV infection who were over 18 yr of age and free of opportunistic infections were recruited and followed up 4 weekly. Pentoxiphylline was prescribed in a dose of 400 mg thrice daily. Thirty three (18 males) patients with HIV infection were studied. During their follow up (mean 12.5 +/- 5.6 months) one patient each developed cryptococcal meningitis and fibrocavitary tuberculosis. Weight increased from 51.3 +/- 7.4 kg at baseline to 55.3 +/- 7.4 kg ($P<0.05$). Malaise, fatigue and appetite improved in all those with these complaints, except the two with opportunistic infections. Mean CD4 counts were 184 +/- 36.4/mul at baseline and increased to 210 +/- 28.6/mul(3) at four weeks ($P<0.05$). The patients had stable CD4 counts over the follow up period since then, i.e., within 25 per cent of the previous levels. <u>The authors concluded that pentoxiphylline therapy in HIV infected individuals, who were free of opportunistic infections, improved their body weight, minimized opportunistic infections, increased and sustained CD4 counts.</u> Given the low cost of the drug it could be recommended for the use in individuals who are at a high risk of developing opportunistic infections. **Editors' note: This observational study of a small number of patients (33 people) does not warrant such a recommendation. Larger comparative**

studies would help establish whether or not pentoxiphylline actually does have a role to play in HIV treatment.

12. HIV prevention trials

Murphy DA, Hoffman D, Seage GR 3rd, Belzer M, Xu J, Durako SJ, Geiger M; Adolescent Trials Network for HIV/AIDS Interventions. Improving comprehension for HIV vaccine trial information among adolescents at risk of HIV. *AIDS Care* 2007;19:42-51.

Murphy and colleagues developed a simplified version of the HIVNET prototype HIV vaccine process for adolescents at risk of HIV by:(1) reducing the reading level; (2) reorganizing; (3) adding illustrations; and (4) obtaining focus group feedback. Then adolescents (N = 187) in three cities were randomly assigned to the standard or simplified version. Adolescents receiving the simplified version had significantly higher comprehension scores (80% correct vs. 72% correct), with 37% of items significantly more likely to be answered correctly. They were also significantly more likely to recall study benefits and procedures. Overall, adolescents were less willing to participate in a potential HIV vaccine trial after presentation than prior to presentation. The authors indicate that it would be feasible for adolescents to participate in a vaccine trial, as simplification of vaccine information, combined with illustrations to depict key concepts, resulted in improved scores for adolescents on the comprehension and recall test. **Editors' note: Conducting HIV vaccine trials in adolescents is important because they would potentially be prioritized for an efficacious product. However, researchers should anticipate more difficulty in recruiting as they make the necessary efforts to simplify information to ensure that consent is fully informed.**

Brogly S, Read JS, Shapiro D, Stek A, Tuomala R. Participation of HIV-Infected Pregnant Women in Research in the United States. *AIDS Res Hum Retroviruses* 2007;23:51-3.

Previous studies suggested that some groups of HIV-infected women were underrepresented in studies of antiretrovirals (ARVs). Brogly and colleagues assessed rates of and reasons for nonenrollment in a U.S. prospective cohort study (protocol P1025), and differences in the characteristics of HIV-infected pregnant women who were and were not enrolled. Forty-one percent of women invited to participate were not enrolled. Clinic-related reasons for nonenrollment included staffing or site resources (26.7% of women) and clinician refusal because of the woman's nonadherence to prenatal care and/or poor research candidacy (10.8%). Patient-related reasons for nonenrollment included unavailability of women for enrollment (e.g., difficulty enrolling during labour/delivery, loss of clinic contact) (20.3%), refusal because of mistrust (10.1%), refusal because of time requirements (8.3%), refusal because of distance to the clinic (4.7%), and spontaneous abortion (4.7%). P1025 participants (N = 530) were significantly more likely to be Hispanic (32.1% vs. 19.8%), and less likely to be non-Hispanic black), to present in the first or second trimester for prenatal care (91.5% vs. 77.6%), and to be ARV-naive (32.8% vs. 23.0%) than nonparticipants (N = 2222). This high rate of nonenrollment can bias study results and generate findings that are applicable only to particular groups of women. The authors conclude that efforts should be taken to design protocols that facilitate enrollment of HIV-infected pregnant women. **Editors' note: The reasons for difficulty in recruiting pregnant women into this multicentre cohort have a universal ring to them: mistrust, lack of time, distance and, of course, being in labour.**

13. Young people

Mbugua N. Factors inhibiting educated mothers in Kenya from giving meaningful sex-education to their daughters. ***Soc Sci Med*** **2007;64:1079-89.**

Public health studies advocate the education of women, especially mothers, stating that educated mothers are highly likely to pass on their education to their children, as well as enforce in their homes healthy practices thereby protecting entire families from disease. Whereas this is usually true in regard to most infectious diseases such as influenza, it is not usually the case when it comes to sexually transmitted infections such as HIV. The research of Mbugua is based on a survey focus group discussion with high-school students (aged 17-19) and interviews with 10 high-school teachers in 1996. In 2003, data were collected from a focus group with fourth-form students and interviews with 4 teachers and 15 mothers whose daughters were in high school. The findings indicate that most educated mothers in urban Kenya experience socio-cultural and religious inhibitions which hinder them from providing meaningful sex-education to their pre-adolescent and adolescent daughters. The author discusses these inhibitions and the steps educated mothers take to ensure that their daughters receive some form of sex-education. **Editors' note: In the age of AIDS, appropriate ways need to be found to overcome traditional inhibitions and actively encourage and support mother-daughter, aunt-niece, sister-sister communication on sexual matters.**

14. Traditional medicine and HIV

Kayombo EJ, Uiso FC, Mbwambo ZH, Mahunnah RL, Moshi MM, Mgonda YH. Experience of initiating collaboration of traditional healers in managing HIV and AIDS in Tanzania. ***J Ethnobiol Ethnomedicine*** **2007;3(1):6**

Collaboration between traditional healers and biomedical practitioners is now being accepted by many African countries south of the Sahara because of the increasing problem of AIDS. The key problem, however, is how to initiate collaboration between two health systems which differ in theory of disease causation and management. Kayombo and colleagues present findings of the experience learned by initiation of collaboration between traditional healers and the Institute of Traditional Medicine in Arusha and Dar-es-Salaam Municipalities, Tanzania where 132 and 60 traditional healers respectively were interviewed. Of these healers, 110 traditional healers claimed to be treating HIV-related disease. The objective of the study was to initiate sustainable collaboration with traditional healers in managing HIV and AIDS. Consultative meetings with leaders of traditional healers associations and government officials were held, followed by surveys at respective traditional healers vilinge (traditional clinics). The findings were analysed using both qualitative and quantitative methods. The findings showed that influential people and leaders of traditional healers association appeared to be gatekeepers to access potential good healers in the two study areas. After consultative meetings these leaders showed to be willing to collaborate; and opened doors to other traditional healers, who too were willing to collaborate with the Institute of Traditional Medicine in managing AIDS patients. Seventy five percent of traditional healers who claimed to be treating AIDS knew some HIV-related symptoms; and some traditional healers attempted to manage these symptoms. Even though, they were willing to collaborate with the Institute of Traditional Medicine there were nevertheless some reservations based on questions surrounding sharing from collaboration. The reality of past experiences of mistreatment of traditional healers in the colonial period informed these reservations. The authors' findings suggest that initiating collaboration is not as easy as it

appears to be from the literature, if it is to be meaningful; and thus the authors conclude that there must be a call for appropriate strategies to access potential healers targeted for any study designed with sustainability in mind. **Editors' note: For further guidance on this topic, we recommend the 2006 UNAIDS Best Practice publication: *Collaborating with Traditional Healers for HIV Prevention and Care in sub-Saharan Africa: Suggestions for Programme Managers and Field Workers.***

15. International initiatives

Simon C, de Lemos G. [UNITAID: an innovative and collective financing system for the fight against malaria, AIDS and tuberculosis]. *Med Trop (Mars)* 2006;66:583-4.

Malaria, AIDS and tuberculosis cause more than 6 million deaths a year in developing countries. And yet medicines allowing effective treatment either exist already or could be designed in forms adapted to the populations most severely affected by these pandemics (e.g., pediatric antiretroviral formulations suitable for developing countries). Simon and de Lemos describe how by providing sustainable predictable revenues, UNITAID promises to be a powerful tool to respond to the specific needs of developing countries in terms not only of leveraging price reductions but also of developing appropriate drug forms and diagnostic techniques not currently on the market. Stable financing as well as negotiation of large-volume procurement programs for several countries will make it easier for manufacturers to predict requirements and avoid shortages. UNITAID is an independent structure that complements the existing organizations involved in the fight against these pandemics. It intervenes only at the request of beneficiary countries using local human resources and logistics and works to improve the infrastructure facilities whenever necessary.

Bor J. The political economy of AIDS leadership in developing countries: An exploratory analysis. *Soc Sci Med* 2007 Feb 2; [Epub ahead of print]

The commitment of high-level government leaders is widely recognized as a key factor in curbing national AIDS epidemics. But where does such leadership come from? Bor presents a quantitative analysis of the determinants of AIDS leadership in 54 developing countries, using the 2003 AIDS Program Effort Index "political support" score as an indicator of political commitment. Explanatory variables include measures of political institutions as well as economic development and integration. Models developed in the author's analysis explain over half of the variation in commitment across the countries in the sample. In particular, the author concludes press freedoms, income equality, and HIV prevalence stand out as determinants of political commitment.

That was ***HIV This Week***, signing off.

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