Welcome to the fifth issue of HIV This Week! In this issue you will find the following thematic areas as covered in the HIV scientific literature: mother-to-child transmission, HIV testing, sale of sexual services, epidemiology, nutrition, prevention, injecting drug use, and men who have sex with men.

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. Mother-to-child transmission

http://gateway.ut.ovid.com/gw2/ovidweb.cgi

The European Collaborative Study (ECS) investigators carried out an epidemiological analysis of the emerging epidemic in the Ukraine and compared its approach to prevention of mother-to-child transmission (MTCT) with that in Western Europe. The ECS is a prospective cohort study established in 1985 in Western Europe and extended to Ukraine in 2000. The authors analysed data on 5967 HIV-infected pregnant women and their infants (1251 from Ukraine and 4716 from Western/Central Europe) and used logistic regression to identify factors associated with transmission. They found that HIV-infection among pregnant women enrolled in Western European centres has shifted from being largely injecting drug use (IDU)-related to heterosexually-acquired; in Ukraine IDU also gradually declined with women increasingly identified without specific risk factors. In Ukraine in 2000-2004 most women (80%) received single dose nevirapine and/or short-course zidovudine prophylaxis (with MTCT rate of 4.2%, 95%CI 1.8–8.0); 2% received antenatal HAART and 33% delivered by elective Caesarean section; in Western European centres 72% of women received HAART (MTCT rate 1.0%, 95% CI 0.4–1.9) and 66% delivered by elective Caesarean section during the same period. The authors conclude that their findings indicate distinct differences in the epidemics in pregnant women across Europe. The evolution of the MTCT epidemic in Ukraine does not appear to be following the same pattern as that in Western Europe in the 1980s and 1990s. Although uptake of preventive MTCT prophylaxis has been rapid in both
Western Europe and Ukraine, substantial challenges remain in the more resource-constrained setting in Eastern Europe.

2. Testing


In Africa, prevention of mother-to-child HIV transmission (PMTCT) programs are hindered by limited uptake by women and their male partners. Routinely offering HIV counselling and testing during labour has been proposed as a way to increase PMTCT uptake, but little data exist on the impact of such intervention in a programmatic context in Africa. In May 2004, PMTCT services were established in the antenatal clinic (ANC) of a 200-bed hospital in rural Uganda; in December 2004, ANC PMTCT services became opt-out, and routine opt-out intrapartum HIV counselling and testing was established in the maternity ward. Homsy and colleagues compared acceptability, feasibility, and uptake of maternity and ANC PMTCT services between December 2004 and September 2005. They found routine HIV counselling and testing acceptance was 97% (3591/3741) among women and 97% (104/107) among accompanying men in the ANC and 86% (522/605) among women and 98% (176/180) among their male partners in the maternity. Thirty-four women were found to be HIV seropositive through intrapartum testing, representing a 12% (34/278) increase in HIV infection detection. Of these, 14 received their result and nevirapine before delivery. The percentage of women discharged from the maternity ward with documented HIV status increased from 39% (480/1235) to 88% (1395/1594) over the period. Only 2.8% undocumented women had their male partners tested in the ANC in contrast to 25% in the maternity ward. Of all male partners who presented to either unit, only 48% (51/107) came together and were counselled with their wife in the ANC, as compared with 72% (130/180) in the maternity ward. Couples counselled together represented 2.8% of all persons tested in the ANC, as compared with 37% of all persons tested in the maternity ward. The authors conclude that routine intrapartum HIV counselling and testing may be an acceptable and feasible way to increase individual and couple participation in PMTCT interventions. Editors' note: An important consultation is being convened this coming week by WHO and UNAIDS to examine the public health and individual benefits on one hand and the human rights concerns on the other associated with provider-initiated testing, with a view to developing operational guidance for countries.

3. Sex work


Vandepitte and colleagues collected subnational and national estimated numbers of female sex workers (FSW) from published and unpublished literature as well as from field investigators involved in research or interventions targeted at FSW. They then calculated the proportion of FSW in the adult female population, and extrapolated subnational estimates to national estimates where appropriate. The authors found that in sub-Saharan Africa, the FSW prevalence in the capitals ranged from 0.7% to 4.3% and in other urban areas from 0.4% to 4.3%. The national FSW prevalence in Asia ranged from 0.2% to 2.6%; in the ex-Russian Federation from 0.1% to 1.5%; in East Europe from 0.4% to 1.4%; in West Europe from 0.1% to 1.4%; and in Latin America from 0.2% to 7.4%. Estimates from rural areas were only available from one country. The authors conclude
that although it is well known and accepted that FSW are highly vulnerable to HIV exposure, most countries in the world do not know the size of this population group. The estimates of the prevalence of FSW presented in this paper show how important this hard-to-reach population group is in all parts of the world.

4. Epidemiology


Lu and colleagues used internationally recommended methods to make estimates of the number of people exposed to HIV in China, the number living with HIV, and the number of new HIV infections and deaths in 2005. The authors used local data to estimate the size of each risk population and HIV prevalence by risk group for every prefecture. These estimates were combined into provincial and national estimates. They used the UNAIDS Estimates and Projections Package and Spectrum to derive estimates of incidence and mortality from prevalence data, taking treatment into account. Lu and colleagues estimated that 650,000 people are living with HIV in China (range 540,000-760,000), of whom 70,000 were newly infected in 2005 (range 60,000-80,000). Between 20,000 and 30,000 people were estimated to have died of AIDS in 2005. The new estimate compares with an estimate of 840,000 people living with HIV in 2003 (range 650,000-1,020,000). The estimated number of infected former plasma donors fell from 199,000 to 55,000. Infections remain concentrated among drug injectors, those buying and selling sex, and men who have sex with men. Lu and colleagues conclude that the new estimates are based on a much wider range of surveillance data as well as mass screening of former plasma donors, and are made at the prefecture level. More limited data from high prevalence provincial surveillance sites led to past estimates that now seem too high. New infections outpace death, and the HIV epidemic in China is still growing.


Mishra and colleagues describe the methods used in the Demographic and Health Surveys (DHS) to collect nationally representative data on the prevalence of human immunodeficiency virus (HIV) and assess the value of such data to country HIV surveillance systems. During 2001–04, national samples of adult women and men in Burkina Faso, Cameroon, Dominican Republic, Ghana, Mali, Kenya, United Republic of Tanzania and Zambia were tested for HIV. Dried blood spot samples were collected for HIV testing, following internationally accepted ethical standards. The results for each country are presented by age, sex, and urban versus rural residence. To estimate the effects of non-response, HIV prevalence among non-responding males and females was predicted using multivariate statistical models for those who were tested, with a common set of predictor variables. Uptake rates of HIV testing in the DHS studies varied from 70% among Kenyan men to 92% among women in Burkina Faso and Cameroon. Despite large differences in HIV prevalence between the surveys (1-16%), fairly consistent patterns of HIV infection were observed by age, sex and urban versus rural residence, with considerably higher rates in urban areas and among women, especially at younger ages. Analysis of non-response bias indicates that although predicted HIV prevalence tended to be higher in non-tested males and females than in those tested, the overall effects of non-response on the observed national estimates of HIV prevalence are insignificant. Mishra and colleagues conclude that population-based surveys can provide reliable,
direct estimates of national and regional HIV seroprevalence among men and women irrespective of pregnancy status. Survey data greatly enhance surveillance systems and the accuracy of national estimates in generalized epidemics.

5. **Nutrition**


Between November 1997 and January 2001, Humphrey and colleagues randomly administered 400,000 IU vitamin A or placebo to 14,110 women within 96 hours post-partum, and monitored incidence among 9562 HIV-negative women. The authors found the cumulative incidence to be 3.4% (95% CI 3.0-3.8) and 6.5% (95% CI 5.7-7.4) over 12 and 24 months after delivery, respectively. Vitamin A supplementation had no impact on incidence [hazard ratio (HR) 1.08; 95% CI, 0.85-1.38]. However, among 398 women for whom baseline serum retinol was measured, those with levels indicative of deficiency (9.2% of those measured) were 10.4 (95% CI 3.0-36.3) times more likely to seroconvert than women with higher concentrations. Severe anaemia was associated with a 2.7-fold increase in the rate of new infections. Younger women were at higher risk of HIV infection: incidence declined by 5.7% (2.8-8.6) with each additional year of age. Humphrey and colleagues conclude that among post-partum women, a single large-dose vitamin A supplementation had no effect on incidence, and recommend that further investigations be carried out to determine whether vitamin A supplementation of vitamin-A-deficient women or treatment of anaemic women can reduce HIV incidence in women.

6. **Prevention**


New HIV infections stem from both people who are unaware and those who are aware of their HIV-positive status. Marks and colleagues estimated the relative contribution of these two groups in sexually transmitting new HIV infections to at-risk (HIV-negative or unknown serostatus) partners in the USA, using known parameters from previous studies. The authors found that the proportion of sexually transmitted HIV from the HIV-positive unaware group was estimated to range from 0.54 [assuming no difference in average number of at-risk unprotected anal and vaginal intercourse (UAV) partners between groups] to 0.70 (assuming twice as many at-risk UAV partners in the unaware group). Using the lower bounds, the transmission rate from the unaware group was 3.5 times that of the aware group after adjusting for population size differences between groups. The authors conclude that the results indicate that the HIV epidemic can be lessened substantially by increasing the number of HIV-positive persons who are aware of their status. Editors' note: Behavioural counselling, skills building for disclosure, access to male and female condoms, social support among people living with HIV and reduction of stigma and discrimination in communities are some of the factors that can help explain the epidemiological impact of knowing your status.
7. Injection drug use


Although syringe distribution is effective in preventing HIV transmission among injecting drug users (IDUs), there is little evidence on the required coverage to substantially reduce HIV transmission. Vickerman and colleagues developed a mathematical model to explore the relationship between endemic HIV prevalence among IDUs and the coverage of syringe distribution. They used data from IDU populations in the UK and Belarus to explore the implications of increasing coverage and the effect of changes in other behaviours. Their projections suggest that there is a coverage threshold, which, if reached, could lead to substantial decreases in HIV prevalence. The threshold largely depends on the frequency that IDUs inject and (safely) reuse their syringes, and corresponds to less than 4 syringe-sharing events per IDU per month. Other factors, such as the injecting cessation rate and efficacy of syringe cleaning, only have substantial impact near threshold coverage levels. Vickerman and colleagues conclude that their results support a policy of increasing the coverage of syringe distribution but highlight the difficulty in producing a universal coverage target. They continue by saying that great public health benefit could be conferred by encouraging the safe reuse of an IDU's own syringes and small stable injecting groups, and that policies which discourage this will negate the impact of syringe distribution interventions.

8. Men who have sex with men


Cáceres and colleagues conducted an exhaustive search for published and unpublished surveillance and research data on the prevalence of same sex sexual activity among male adults (including male-to-female transgenders and sex workers) in low and middle income countries. They operationalised key indicators (ever sex with a man, sex with a man last year, high risk sex last year (as defined by unprotected anal sex or commercial sex)). Cáceres and colleagues found that of 561 studies on male sexual behaviour and/or MSM population characteristics, 67 addressed prevalence of sex between men, with diverse numbers per region. There was virtual unavailability of data in sub-Saharan Africa, Middle East/North Africa, and the English speaking Caribbean. Overall, data on lifetime prevalence of sex with men (among males) yielded figures of 3-5% for East Asia, 6-12% for South and South East Asia, 6-15% for Eastern Europe, and 6-20% for Latin America. Last year figures were approximately half of lifetime experience figures, and prevalence of high risk sex among MSM last year was approximately 40-60% in all regions except South Asia, where it was 70-90%. The authors concluded that the data available on the prevalence of male same sex sexual activity across regions are scarce (non-existent in some areas), with validity and comparability problems. They went further to recommend a cross cultural analysis of terminology and practices as well as continued work on epidemiological and social analysis of male-male sexual practices in societies across regions.

That was *HIV This Week*, signing off.
Editors' notes on journal access

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