



THE WORLD BANK



USAID
FROM THE AMERICAN PEOPLE



Emerging Issues in Today's HIV Response: Debate 3 **Discordant Couples and HIV Transmission**



The World Bank 2010

Expert panelists debate the role of discordancy.



The World Bank 2010

More than 150 people attended the third debate in the Emerging Issues debate series held in Washington, DC.

Executive Summary¹

On August 26, 2010, the World Bank and the U.S. Agency for International Development (USAID) co-hosted the third in a series of debates on emerging issues in the global response to HIV. In an era when development aid is under heavy pressure and the dynamics of the pandemic are constantly changing, it is imperative that governments, civil society organizations, and other partners have the best evidence and knowledge to maximize the effectiveness of development dollars and achieve results. The debate series was created with this in mind and was designed to advance discussion and begin to build consensus about thorny issues within the HIV community. The World Bank's global video conferencing network and web-based technologies allowed country teams in Africa and other partners from across the globe to participate in real time in the debate (approximately 20 videoconference sites are connected at any given point in time). Additional information about the debate series can be found at <http://go.worldbank.org/A47FWU5140>. This website contains the links to all proceeding reports of previous debates, as well as links to download and watch all three previous debates.

Debate 3 focused on discordant couples and HIV transmission, and was based on the following proposition: Intracouple HIV transmission between couples in long-term stable partnerships drives a majority of HIV transmission and should receive the majority of HIV prevention funding. The debate was moderated by Karl Hofmann, President and CEO of Population Services International. Two panelists spoke in favor of the proposition: Dr. Elizabeth Marum, Senior Regional Advisor in HIV Prevention, Division of Global AIDS, Center for Global Health at the Centers for Disease Control and Prevention (CDC); and Dr. Susan Allen, Professor of Pathology and Laboratory Medicine at the School of Medicine, Emory University.

¹ The views expressed in this report are not necessarily those of USAID, the World Bank, or the organizations to which the panelists are affiliated. Statements in this document by the debate panelists have not been checked for factual accuracy and should not be cited.

The two panelists who spoke against the proposition were Dr. Ronald Gray, Robertson Professor of Reproductive Epidemiology at the Bloomberg School of Public Health, Johns Hopkins University; and Dr. Daniel Halperin, Lecturer on International Health at the Department of Global Health and Population, Harvard School of Public Health. The debate opened with remarks from Dr. Carolyn Ryan, Senior Technical Advisor-Prevention, Office of the U.S. Global AIDS Coordinator (OGAC).

The panelists who spoke in favor of the proposition asserted that discordancy², by definition, is at the core of sexual transmission of HIV, and provided data to demonstrate that most new infections are acquired within long-term, stable partnerships. In addition, they contended that couples testing and counseling services could potentially have a population-level prevention effect similar to that of male circumcision and are more cost-effective than treatment programs. The defenders of the proposition also said that all HIV testing, prevention, treatment, and care programs can easily and effectively integrate comprehensive services for couples with a focus on knowing one's status and supporting disclosure.

The opponents of the proposition disagreed with the two primary aspects of the proposition, arguing that the evidence for intracouple transmission is overstated and thus does not merit a major shift in prevention funding. They asserted that their data demonstrate that long-term, monogamous sexual partnerships are not the norm in all parts of Africa, and as a result, there are relatively fewer discordant couples than assumed by the panelists in favor of the proposition. These panelists postulated that most transmission of HIV in Africa does not occur between monogamous, long-term sexual partners, so programs to address discordant couples would not have a large population-level impact. Therefore, the opposing panelists felt it was ill-advised to invest the majority of prevention funds to address discordancy, given the complexity of identifying and targeting all the different types of couples, the low rates of long-term partnerships in Southern Africa, and the difficulties in and costs associated with scaling up couples-based testing and counseling across Africa. They argued that programs that address multiple and concurrent partnerships would be more effective in addressing the epidemic's drivers. However, the panelists agreed that couple-based testing and counseling services are a valuable intervention and a key component of comprehensive HIV prevention programming in contexts where the majority of the population are in such relationships.

Following the arguments for and against the proposition, the panelists answered questions about how to target discordant couples for interventions, addressing gender-based violence following diagnosis, and the relevance of discordancy in Africa for other regions. The debate was accessible via the internet and videoconference. Over 150 people attended the live debate at the World Bank, while more than 100 participated in the live webcast. The debate was also broadcast at 20 videoconference sites in Africa, Asia, and Europe.

This report summarizes the arguments panelists made for and against the proposition, and the questions and answers that occurred after the debate. It also provides additional resources to learn more about the topic. Not all data presented in this report have been checked for factual accuracy and should not be cited.

² For this debate, discordancy is defined as a situation in which one person in the relationship is HIV-positive and the other is HIV-negative.

Debate Proceedings

The moderator introduced the topic for the debate: Intracouple HIV transmission between couples in long-term stable partnerships drives most HIV transmission and should receive the majority of HIV prevention funding. The four panelists each had 10 minutes to present their arguments in favor of or against the proposition. Following the final presentation, each panelist had two minutes to rebut arguments made during the debate. Once the rebuttals concluded, the moderator posed questions submitted by participants. Technical difficulties prevented Dr. Elly Katabira, President of the International AIDS Society, from providing closing remarks.

Arguments Defending the Proposition

The following is a summary of key points panelists made in defense of the proposition.

Most new infections are acquired from stable, long-term partners.

According to one panelist, data from Demographic and Health Surveys (DHS) in a number of countries indicate that 45 to 75 percent of spouses of partners living with HIV are not living with HIV. In most sub-Saharan African countries, three-quarters of adults aged 20 to 49 years are in a cohabiting union. Once married, more than 90 percent of reported sexual exposures are with cohabitating spouses. Genetic sequencing of incident HIV infections in almost 600 discordant couples in Lusaka, Zambia, and Kigali, Rwanda, confirmed that 79 percent of new infections are acquired from the spouse. When this figure is broken out by gender, 75 percent of seroconversions that occur in men and 84 percent of seroconversions that occur in women are acquired in marriage.

Couples' testing and counseling is a proven prevention intervention with potential to be just as effective as male circumcision in reducing HIV incidence.

A panelist described the current status of discordancy in East, Central, and Southern Africa. In studies of jointly counseled couples, HIV incidence is higher in Southern African couples at roughly 7 to 8 percent per year, compared to East and Central African couples, for whom rates are 2.5 to 4.5 percent per year. The panelist remarked that the reasons for the discrepancy in the two regions are unclear but could be due to host genetic markers and other cofactors, such as circumcision and genital ulcerations.

The panelist then offered evidence from two studies in Uganda and one in Tanzania that were used to compare HIV incidence in counseled couples to HIV incidence in couples who are not counseled. A study based in Rakai, Uganda (Quinn et al. 2000), reported an incidence of 11 to 12 percent per year, and the remaining two studies (Carpenter et al. 1999; Hugonnet et al. 2002) reported rates of 7.7 percent per year for couples who do not receive joint counseling. Combining incidence³ from the three studies, the panelist calculated that 130 seroconversions would occur in 1,281 person-years, for an incidence rate of 10.2 percent per year.

On a related note, two of the studies referenced above also reported new infections in couples who were both negative at baseline: only 3 out of 18 Tanzanian (Hugonnet et al. 2002) and 3 out of 29 Ugandan (Carpenter et al. 1999) adults who acquired HIV outside the marriage transmitted to their spouses within the year. This suggests that most transmissions in marriage are from a chronically infected partner and that the role of acute infection in HIV spread may be overstated.

The panelist noted that there is only one published study available from the early 1990s that examined uncounseled discordant couples in Southern Africa (Hira et al. 1990). The study showed

³ The three rates are 90 infections per 760 person-years (PY) in Rakai, Uganda; 34 infections per 441 PY in Masaka, Uganda; and 6 infections per 80 PY in Mwanza, Tanzania.

that 11 out of 52 partners of patients living with HIV on ART seroconverted within one year, a rate of 21 percent. Another source of data comes from a large discordant couple cohort followed at the Zambia-Emory HIV Research Project. In Lusaka, Zambia, seroincidence between enrollment and the first follow-up visit three months later, which includes some partners living with HIV who were in the “window period” (infected but not yet seropositive at enrollment), was 13 percent per year (Dunkel et al. 2008). Thereafter, the rate was 7 percent per year. The 13 percent rate actually underestimates the rate in “uncounseled couples” because the impact of couples’ testing is felt in the first three months; the reduction from 13 to 7 percent confirms that seroincidence is reduced after couples’ testing.

The panelist summed up by pointing out that the difference in HIV incidence between clients counseled as individuals and jointly counseled couples is 10 percent versus 3.5 percent in East and Central Africa, and between 13 to 20 percent versus 7 percent in Southern Africa. Based on these studies, she extrapolated that couples’ counseling could thus lead to a minimum of 50 percent reduction in transmission, which is comparable to the protective effect of medical circumcision for men who are not living with HIV. Furthermore, couples’ counseling has the added advantages of not involving surgery and of providing protective effects for both men and women.

Couples’ testing and counseling is more cost-effective than other interventions, such as ART.

To calculate the cost-effectiveness of testing and counseling, the proponents stressed that it is important to know how well an intervention works and how much it costs. The proponents used the actual program costs from the aforementioned studies in Zambia and Rwanda to estimate that couples’ testing prevents half of new infections in discordant couples. Based on these assumptions, the proponents calculated the average cost per infection averted at around US\$300 in Southern Africa and US\$800 in East and Central Africa. When compared with the annual cost of ART (US\$675 to \$1,100), the proponents asserted testing and counseling could be “considered a bargain.”

Discordancy is at the core of HIV sexual transmission, and diagnosing it is key to HIV prevention.

A proponent of the proposition pointed out that discordancy is at the core of HIV sexual transmission, because all sexual transmission occurs in the context of discordancy (i.e., everyone who has acquired HIV sexually was at one point HIV-negative and involved in a sexual relationship with someone who was already infected). Thus, diagnosing discordancy is key to HIV prevention. Even in countries with low marriage rates, most adults are in some form of a relationship. She added that couples’ testing and counseling should be offered to adults regardless of marital status or type of relationship.

The panelist cautioned that prevention programming that does not address discordancy could hinder HIV prevention. Messages promoting partner reduction without addressing discordancy can give a false sense of security to people who equate faithfulness with reduced risk; the key issue is to be faithful to a partner with a known HIV status. “Know your status” messaging and campaigns to promote HIV testing that do not explain discordancy and its risks ignore the fact that most people assume that members of a couple must be seroconcordant (i.e., if one partner tests positive, his/her partner[s] must share that same status) and can potentially contribute to intracouple transmission.

Disclosure is important for HIV prevention.

A panelist cited the example of how other sexually transmitted infections (STIs) are controlled with partner notification and treatment. Given the stigma surrounding HIV infection, partner notification has not been part of HIV control efforts, but it is nonetheless necessary to inform partners.

Couples’ testing and counseling services provide an alternate and preferable approach to partner notification because both partners consent to the process and both learn and disclose their status

together, prompting one panelist to suggest that couples' testing and counseling should be relabeled "counselor-assisted mutual disclosure." The panelist emphasized that service providers must withhold judgment about which relationships are long-term or stable because all relationships start out as short-term.

Comprehensive services for couples should be integrated into all HIV prevention and care programs.

The proponents contended that HIV prevention programs should address the issue of discordancy and promote couples' testing and counseling to prevent further transmission. They gave the following examples of situations where couples-based approaches could be integrated into current programming:

- School-based and youth-focused education programs can emphasize the importance of knowing one's own status and one's partner's status before having sex or getting married.
- All persons receiving HIV care both before and during ART should be encouraged to bring in all of their sexual partners for couples' testing and counseling.
- Pregnant women receiving antenatal care should be educated about the importance of bringing their partners for testing, and couple-friendly services should be made available.
- Male circumcision services should encourage young men requesting circumcision to bring in their wives or girlfriends for couples' testing, just as fathers are now encouraged to come for couples' testing in the context of pregnancy care.
- Community mobilization campaigns should help people understand the risks of discordancy and the importance of mutual disclosure.
- Mass media campaigns about HIV prevention should include messages about the risk of discordancy and the importance of mutual knowledge of HIV status.
- Health care workers should help empower couples to care for, support, and protect each other when facing a catastrophic diagnosis such as HIV infection.

Proponents also argued that there is demand for couples' counseling, citing a mass media campaign in Zambia that promoted couples' testing. Within one month, couples' testing rates increased from 5 to 14 percent, but the mass media campaign ended early due to inadequate funding. The panelist concluded that these kinds of programs need more funding.

Arguments Opposing the Proposition

The following is a summary of key points panelists made in opposition to the proposition.

Cohort studies in Rakai, Uganda, show that less than half of transmissions were intracouple.

The opponents cited different data to refute proponents' claims that discordancy is the major driver of HIV transmission in generalized epidemics. The opponents cited annual biological and survey data collected from adults aged 15 to 49 years from 50 villages in the rural Rakai region of Uganda. These data helped determine the distribution of new HIV infections by marital status. Prior to the availability of ART in 2004, data from 2002 to 2003 showed that among 5,862 married individuals, transmissions within known HIV-discordant couples accounted for 18.3 percent of all new infections. Twenty-three percent of all infections observed occurred in initially concordant negative couples; an estimated 11.6 percent of these newly introduced infections came from external relationships. Adding these rates together, the panelist estimated that 29 to 30 percent of all new HIV infections in Rakai came from intracouple transmission between partners of known HIV

status. He concluded that in Rakai, intracouple transmission within discordant couples is not contributing to the majority of HIV infections in the general population.

The panelist noted that in analyses conducted after the introduction of ART, about 13 percent of all new infections in Rakai were observed in discordant couples, while 23 percent of new infections came from couples who were initially not living with HIV. Assuming that half of those new infections were acquired outside the couple's relationship and the other half were transmitted within, it was estimated that about 26 percent of all infections occurred in stable, potentially discordant couples. Given this evidence, the panelist concluded that discordancy is not the dominant driver of the epidemic in Rakai.

To determine whether the situation in Rakai is typical of a generalized epidemic, he compared the 4.6 percent of all married couples in Rakai who are HIV-discordant against a Uganda DHS behavioral survey (Ministry of Health, Kampala, and ORC Macro 2006) that shows 4.1 percent of all married couples are serodiscordant. The comparison shows that the Rakai epidemic is generalizable. The panelist argued that in Uganda, which represents a typical generalized epidemic, transmission in discordant couples is so low that it is hard to conceive of how it could drive the majority of HIV transmissions within the population.

Couples' testing and counseling services are challenging interventions that will not work for all types of relationships.

A panelist noted several dilemmas with diverting the majority of funding to programs focusing on discordant couples. The first dilemma is identifying discordancy among couples. Disclosure is an emotional and laborious effort that requires weeks, and even months, of counselors' time and the client's willingness to disclose. Second, it is important to identify these couples before transmission occurs. Third, to be most effective, discordancy has to be identified during the early, acute phase of HIV infection. A period of acute infectivity occurs immediately following infection and before the HIV virus is detectable in some HIV tests. During this period, if couples are not aware that they are discordant, transmission can occur. Other difficulties with implementing couples' testing and counseling include the reality that while discordancy is a necessary element of sexual transmission, the individuals involved are not necessarily a couple (i.e., sex workers and their clients, or two men who just met in a bar). The panelist questioned how realistic it is to target these kinds of couples for couples' testing and counseling.

It was also noted that in Southern Africa, most adults are not married or living together. A panelist commented that in Swaziland, the majority of adults are not in stable relationships; casual sex and long-term concurrent partnerships are more common. The panelist questioned the implications of targeting such relationships for couples' counseling; for example, is it realistic to expect men to bring in both their mistresses and wives?

Current evidence on discordancy does not merit a dramatic shift in funding.

The opponents outlined several concerns about the rigor of the data presented by the proponents. A panelist noted that an intuitive sense about the appropriateness or effectiveness of an intervention should not be a basis for massive change in policies or programming. The history of programming for HIV and STIs has many examples of activities or approaches that appeared to be intuitively rational but which were later shown to be ineffective in randomized, controlled trials and by objective evidence.

One concern the panelist raised is the proponents' assertion that intracouple transmission is the main mode of sexual HIV transmission in generalized epidemics. He cited evidence from Kenya showing that there are many more serodiscordant couples than there are seroconcordant couples where both partners are infected. The panelist wondered why, if serodiscordancy is the massive risk described by the proponents, some couples remain serodiscordant over time. The panelist also

offered evidence from a CDC analysis in Uganda that initially described more than half of new HIV infections as attributable to serodiscordant couples. The data showed that 13 percent of new infections came from a spouse with a recent infection, and 38 percent of new infections came from a spouse with a long-standing infection, adding up to a 50 percent intracouple transmission rate. However, when the data were reanalyzed, it became clear that the 13 percent of new infections could be attributed to someone outside the relationship, and thus transmission occurred outside the couple. The panelist observed that the CDC data and the earlier data presented from Rakai suggest that about a third or less than a third of new infections come from inside a serodiscordant relationship in East Africa and in Southern Africa, where rates of marriage and regular partnerships are generally much lower.

It was also asserted that the proponent data from Zambia were based mainly on modeling rather than on randomized, controlled studies or empirical data. He went on to argue that many of those enrolled in the Zambia cohort were in the advanced stages of AIDS, when individuals are much more infectious, adding bias to the data. He said that there is potential for confounding and bias as a result of using these studies to make policy and noted it would be a “grave error” to radically transform prevention policies based on a few studies and modeling. He stressed that there needs to be a robust burden of evidence and demonstration of effectiveness for couples-based approaches, using the same level of rigor as the research that proved the protective effect of male circumcision.

Couples’ testing and counseling interventions would be difficult to scale up.

Given the limited data on the effectiveness of couples’ counseling, a panelist argued that to make an impact, couples’ testing and counseling would have to be implemented at levels similar to what is being implemented by the proponents in Rwanda and Zambia. He noted that even with dedicated and passionate researchers and programmers, the intensity and expense of these kinds of interventions make it very difficult to take them to scale to reach millions of people across Africa.

Key Points Raised During the Rebuttal

By Panelists Defending the Proposition

The panelists defending the proposition made the following points in response to the opponents’ arguments:

- The proponents clarified that the data they cited were not from modeling, as asserted by the opponents. The data from Rwanda and Zambia came from observational studies, and the sample size was 100,000, not a couple of hundred. Moreover, the Zambia cohort was a seroprevalent cohort and not a cohort of sick people in the advanced stages of AIDS.
- At the HIV Implementers’ Meeting in 2009, a modeling effort from UNAIDS and the World Bank showed that the majority of new infections are acquired either from a steady partner who is monogamous but unknowingly already infected coming into the relationship, or from a partner who has become HIV-infected outside the relationship and brought the infection to the union.
- Claiming that couples’ testing and counseling services are too expensive and complicated to scale up is reminiscent of arguments against scaling up ART. Despite all trepidation about ART scale up, millions of people in Africa are now benefiting from ART.
- Couples’ testing and counseling services are not complicated; the experience from Zambia, Rwanda, and other countries shows that successful implementation is possible, and it is always more cost-effective to prevent a second infection in a family than to put someone on treatment.

- People will access couples' counseling if discordancy and its risks are adequately explained. Mass media and community mobilization efforts that promote couples' counseling and explain these risks and benefits have demonstrated results.
- HIV is one of the only infectious diseases with a cheap and rapid test, yet HIV testing is not routine. Given that HIV is an STI, testing should be used as an opportunity to engage couples in preventing intracouple transmission.

By Panelists Opposing the Proposition

The panelists opposing the proposition made the following points in response to the proponents' arguments:

- The stability of relationships needs to be considered in the studies presented. Marital disruption may also explain why there are fewer concordant positive than discordant couples (i.e., positive concordant couples may split up or experience the death of one partner).
- One cannot judge acceptability and viability of couples' testing and counseling based on current couples' counseling clients, since people who are willing to go together to a voluntary testing and counseling session and to disclose their status are a highly self-selected group. Unless one can include the population of those not using voluntary testing and counseling services in assessments, acceptability cannot be assumed.
- Promoting and implementing couples' counseling is arduous, and while HIV testing and counseling services need to be offered as a human right, opponents question if the investment in testing will have a significant impact on the epidemic.
- DHS data cited by the proponents are notoriously unreliable for self-reported sexual behavior; for example, in a Zimbabwe household study, about a third of the young women who were HIV-positive reported being virgins.
- Epidemiologically, what drives the transmission of HIV is the broader societal issue of high-risk sex involving casual encounters and longer-term concurrent partnerships.

Key Themes Covered During the Question and Answer Session

Definition of "Couple" and How to Target Discordant Couples

An audience member asked the panelists to define "couple." A panelist responded that a long-term couple is one that is together for more than six months. Using the DHS definition, 75 percent of adults aged 20 to 49 years are in cohabiting unions. However, the panelist noted that other types of long-term partnerships are amenable to couples' testing, such as polygamous households that get tested together. Regardless of the formal definition of what a couple is, the panelist commented that there should be no limitations on which couples should receive testing and counseling. She explained that a couple could constitute two people having regular sex, of the same or different gender, cohabiting or not, or legally recognized or not. Another panelist commented that the difficulty of defining a couple is that people do not stick to these definitions. Furthermore, there are nebulous relationships, like clandestine relationships, in which partners are unlikely to seek testing and counseling together for fear of being revealed.

An audience member then asked how to best target prevention activities for discordant and concordant couples. A panelist disputed the predominant image of a discordant couple in which the man is always living with HIV and the woman is not and must be protected. Meanwhile, data from

Kenya and elsewhere across Africa show that the woman is frequently the partner living with HIV in the serodiscordant couple. Based on these data, the panelist recommended male circumcision to prevent seroconversion of a man not living with HIV. A panelist noted that interventions to address discordancy must include simultaneous diagnosis and disclosure, long-term support and treatment (as clinically indicated) for the partner who is living with HIV, regular joint counseling, and routine retesting of the partner who is not living with HIV. Also important are prevention education, condom provision, family planning, and referral to male circumcision if the man is not living with HIV.

Issues of Domestic or Gender-based Violence Once HIV-positive Status of One Partner Has Been Acknowledged

An audience member asked how to address discrimination and violence issues within discordant couples. A proponent cited research on the low incidence of adverse post-testing events in discordant couples. There are very few reports of a previously peaceful relationship becoming an abusive one; in most cases, where there is post-testing violence, it occurs within an already abusive relationship. She added that counseling for discordant couples cannot be a one-off intervention, which would not be able to handle the overwhelming impact of the diagnosis.

An opponent noted a study in Tanzania (Maman et al. 2002) that showed little indication of violence against women who disclosed their status to partners. However, when the data focused on women living with HIV who disclosed, 7 percent reported being beaten and/or abandoned. The panelist believes this demonstrates that violence is an issue in disclosure. Another opponent added that in Rakai, he observed no increase in intimate partner violence after testing, but also noted that couples with a history of violence generally do not undergo couples' testing and counseling.

Relevance of East, Central, and Southern African Data on Discordancy for Other Region

An attendee from India questioned how relevant the data and their conclusions are for the concentrated epidemics seen in Asia and elsewhere. A panelist asserted that couples' counseling is a human right and should be provided on that basis, regardless of its impact on the epidemic. Another panelist added that in settings where the epidemic is driven by sex work, more funding should be available for prevention programs targeting sex workers, including frequent testing and early access to ART to decrease transmission. She added that because many sex workers have steady partners, there are opportunities for couples-based prevention approaches shown to be effective on a small scale in Thailand and Vietnam. It was noted that while couples' counseling for sex workers can be difficult, good training for counselors can make it effective.

Another attendee asked whether it is dangerous to make simplistic statements about where to allocate the majority of HIV funding, when most countries do not have generalized epidemics. A panelist agreed that the HIV epidemic is complex and different for every country. While she does not believe that couples' testing and counseling should receive most of the prevention funding in all countries, this service should receive more funding than it currently does, especially in Africa. Prevention messaging must emphasize the risk of discordancy, and increased availability of couples' testing is necessary. The panelist recounted a visit to a health center where she was told that pregnant women who test negative are simply sent home without further prevention counseling. The panelist expressed great concern that those women may go home to a spouse who is living with HIV and who has not yet been tested, and remain at high risk for acquisition of HIV infection.

Approaches to Improving Diagnosis of Discordancy

An audience member asked about the best way to generate timely strategic information and national-level evidence on discordancy and concordancy to support policy and programming. A panelist responded that testing should be promoted for pregnant women, blood donors, and VCT clients. Sexual partners of these individuals should also be tested because of the risks associated with

discordancy. Services can also be improved by expanding hours of service and giving counselors time to focus on prevention messaging. The panelist added that the observational data she provided earlier show that testing and counseling services work.

One panelist disagreed with the assertion that testing and counseling services are an evidence-based form of prevention. The only randomized, controlled trial looking at the effect of testing and counseling on HIV incidence (Corbett et al. 2006) found an almost statistically significant higher HIV incidence in those receiving intensive VCT. He believes that sexual behavior needs to be addressed in prevention messaging; simply encouraging couples to get testing and counseling is not enough. Another panelist theorized that in the Corbett study mentioned by the panelist, it is likely that the young men, many of whom were likely in a relationship, tested alone; these men may have made the common assumption that if they are negative, then their partners are also negative. The panelist stressed that as long as people are having sex together, behavioral interventions should be delivered to both at the same time.

Next Debate

The next debate will be held on October 27, 2010, and will focus on the role of concurrent sexual partnerships in driving HIV transmission.

References

- Carpenter, L. M., A. Kamali, A. Ruberantwari, S. S. Malamba, and J. A. Whitworth. 1999. Rates of HIV-1 Transmission Within Marriage in Rural Uganda in Relation to the HIV Sero-Status of the Partners. *AIDS* 13:1083–1089.
- Corbett E. L., E. Dauya, R. Matambo, et al. 2006. Uptake of Workplace HIV Counseling and Testing: A Cluster-Randomised Trial in Zimbabwe. *Public Library of Science Medicine* 3(7):e238.
- Hira, S. K., B. M. Nkowane, J. Kamanga, et al. 1990. Epidemiology of Human Immunodeficiency Virus in Families in Lusaka, Zambia. *Journal of Acquired Immune Deficiency Syndromes* 3:83–86.
- Hugonnet S., F. Mosha, J. Todd, et al. 2002. Incidence of HIV Infection in Stable Sexual Partnerships: A Retrospective Cohort Study of 1802 Couples in Mwanza Region, Tanzania. *Journal of Acquired Immune Deficiency Syndromes* 30:73–80.
- Maman, S, J. Mbwambo, et al. 2002. HIV-1 Positive Women Report More Lifetime Experiences with Violence: Findings from a Voluntary HIV-1 Counseling and Testing Clinic in Dar es Salaam, Tanzania. *American Journal of Public Health* 92(8) 1331-7.
- Ministry of Health, Kampala, and ORC Macro. 2006. *Uganda HIV/AIDS Sero-Behavioural Survey 2004-2005*. Calverton, MD: Ministry of Health and ORC Macro.
- Quinn, T. C., M. J. Wawer, N. Sewankambo, et al. 2000. Viral Load and Heterosexual Transmission of Human Immunodeficiency Virus Type 1. Rakai Project Study Group. *New England Journal of Medicine* 342:921–929.

Resources

- Boily, M.-C., R. F. Baggaley, L. Wang, et al. 2009. Heterosexual Risk of HIV-1 Infection per Sex Act: Systematic Review and Meta-Analysis of Observational Studies. *Lancet Infectious Diseases* 9(2):118–129.
- Bunnell, R., A. Opio, J. Musinguzi, et al. 2008. HIV Transmission Risk Behavior among HIV-Infected Adults in Uganda: Results of a Nationally Representative Survey. *AIDS* 22(5):617–624.
- De Walque, D. 2007. Sero-Discordant Couples in Five African Countries: Implications for Prevention Strategies. *Population and Development Review* 33(3):501–523.
- Dunkle, K., R. Stephenson, E. Karita, et al. 2008. New Heterosexually Transmitted HIV Infections in Married or Cohabiting Couples in Urban Zambia and Rwanda: An Analysis of Survey and Clinical Data. *The Lancet* 371:2183–2191.
- Guthrie, B. L., G. de Bruyn, and C. Farquhar. 2007. HIV-1-Discordant Couples in Sub-Saharan Africa: Explanations and Implications for High Rates of Discordancy. *Current HIV Research* 5(4):416–229.
- Pinkerton, S. D. 2008. Probability of HIV Transmission During Acute Infection in Rakai, Uganda. *AIDS and Behavior* 12(5):677–684.
- Shelton, J. D. 2010. A Tale of Two-Component Generalised HIV Epidemics. *The Lancet* 375(9719):964–966.

This publication was produced for review by the U.S. Agency for International Development. It was prepared by the AIDSTAR-One Project.

The authors' views expressed in this publication do not necessarily reflect the views of the U.S. Agency for International Development or the United States Government.

AIDSTAR-One

John Snow, Inc.

1616 Fort Myer Drive, 11th Floor

Arlington, VA 22209 USA

Phone: 703-528-7474

Fax: 703-528-7480

Email: aidstarone-info@jsi.com

Internet: aidstar-one.com