

# *Highly Active Antiretroviral Therapy (HAART), Sexually Transmitted Infections (STIs) and People Living with HIV/AIDS (PLWHA):*

## **A COMPLEX SET OF INTERACTIONS**

### **Draft Discussion Paper**

**December 2004**

*This is an initial discussion document attempting to identify the way forward in addressing the sexual health needs of PLWHA and the broader implications of the return of STIs amongst PLWHA.*

The arrival of HAART in the mid 1990s was accompanied by increased episodes of unprotected anal intercourse in casual encounters amongst gay men in many countries<sup>1,2</sup>, including Australia<sup>3,4</sup>. A number of studies have indicated a correlation between these behaviour changes and 'treatments optimism'<sup>1,3,6</sup>. Most of these studies identify increased numbers of episodes of unprotected sex by both HIV-positive and HIV-negative men<sup>5,6</sup>. (Those studies from the United States that wrongly include both episodes of unprotected sex between positive men in casual encounters and unprotected oral sex in their increased risk calculation for HIV transmissions have not been included). One study did not show increases in episodes of unprotected sex by positive men, even in the context of rising rates of new HIV infections<sup>7</sup>.

These behavioural changes did not result in rises in rates of new HIV infections amongst gay men until 1999 in the West Coast of USA<sup>8</sup> and Amsterdam in 2001<sup>9</sup>, and were then documented in Victoria in 2001, NSW and Qld in 2002 and SA in 2003<sup>10</sup>. Rates of new HIV infections have now stabilised (or fallen) in NSW and Victoria. While gay men were taking more behavioural risks for HIV transmission, this was balanced by the impact of HIV treatments reducing HIV infectivity in people with HIV. However, while HIV infections rates have (mainly) stayed stable, rates of



AUSTRALIAN  
FEDERATION OF  
AIDS ORGANISATIONS  
INC.

PO BOX 51  
NEWTOWN  
NSW 2042 AUSTRALIA

Ph +61 2 9557 9399  
Fx +61 2 9557 9867

Email: [afao@afao.org.au](mailto:afao@afao.org.au)

Web: [www.afao.org.au](http://www.afao.org.au)

<sup>1</sup> High-risk sexual behaviour increases among London gay men between 1998 and 2001: what is the role of HIV optimism? J Elford, G Bolding, and L Sherr. *AIDS*, Jul 2002; 16: 1537-44.

<sup>2</sup> Gay Asian men in San Francisco follow the international trend: increases in rates of unprotected anal intercourse and sexually transmitted diseases, 1999-2002. W McFarland, S Chen, D Weide, R Kohn, and J Klausner *AIDS Educ Prev*, Feb 2004; 16: 13-8.

<sup>3</sup> HIV treatments optimism and sexual behaviour among gay men in Sydney and Melbourne. P Van de Ven, S Kippax, S Knox, G Prestage, and J Crawford. *AIDS*, Nov 1999; 13: 2289-94.

<sup>4</sup> HIV/AIDS, Hepatitis C & Related Diseases in Australia. Annual Report of Behaviour 2001. National Centre in HIV Social Research

<sup>5</sup> Increasing risk behaviour and high levels of undiagnosed HIV infection in a community sample of homosexual men. JP Dodds, DE Mercey, JV Parry, and AM Johnson. *Sex. Transm. Inf.*, Jun 2004; 80: 236-40.

<sup>6</sup> Sexual risk behaviour increases and is associated with HIV optimism among HIV-negative and HIV-positive gay men in Sydney over the 4 year period to February 2000. P Van de Ven, G Prestage, J Crawford, A Grulich, and S Kippax. *AIDS*, Dec 2000; 14: 2951-3.

<sup>7</sup> Is unsafe sexual behaviour increasing among HIV-infected individuals? TR Glass, J Young, PL Vernazza, M Rickenbach, R Weber, M Cavassini, B Hirschel, M Battegay, HC Bucher, and Swiss HIV Cohort Study. *AIDS*, Aug 2004; 18: 1707-14.

<sup>8</sup> Russell S. SF HIV rate surges. *San Francisco Chronicle*. A-1. June 30, 2000

<sup>9</sup> [HIV-infection and AIDS in the Netherlands: prevalence and incidence, 1987-2001] EL Op de Coul, RJ Beuker, M Prins, JS Fennema, WI van der Meijden, RA Coutinho, and MJ van de Laar. *Ned Tijdschr Geneesk*, May 2003; 147: 1071-6.

<sup>10</sup> HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia. Annual Surveillance Report, 2004. National Centre in HIV Epidemiology and Clinical Research.

particular STIs amongst gay men in Australia have been climbing<sup>10,11</sup>. These epidemics have sometimes been initially associated with gay men with HIV<sup>12</sup>.

Because of the known epidemiological synergy between HIV and STIs<sup>13</sup> recently called a “lethal synergy”<sup>14</sup>, there is concern that eventually rising rates of STIs will start making a significant contribution to rises in new HIV infections.

One response made by gay men to HIV has been termed “serosorting”<sup>15</sup>, where people seek partners of the same HIV antibody status – part of the motivation for which is to have unprotected sex. While serosorting can prevent HIV transmissions, it may result in increased STI transmissions because it is associated with unprotected anal intercourse. Anal intercourse is the most efficient mechanism for transmission of both HIV and many STIs.

Avoiding the transmission of HIV has been the primary motivation behind the sexual behavioural strategies adopted by gay men. As a result, ‘safe sex’ is practised in the vast majority of cases where HIV seroconcordance is not present. However, there may be misunderstanding amongst gay men that ‘safe sex’ provides effective protection against STIs. For example, oral sex – for which condoms are rarely used – may be a choice when sex involves two people who know they are HIV serodiscordant. Oral sex, unless there are particular cofactors present that facilitate HIV transmission, is considered relatively (but not 100%) safe for HIV. However, oral sex has been significantly implicated in the resurgent syphilis epidemics amongst gay men in Chicago<sup>16</sup> and Manchester<sup>17</sup> (and perhaps in gonorrhoea transmissions in Sydney<sup>18</sup>).

In the early 1980s when gay men first responded to HIV, there was no HIV antibody test and every sexually active gay man had to consider himself at risk of HIV infection. The message was ‘safe sex for all’ and ‘use a condom every time’. Universal safe sex, together with a possible reduction in the number of partners, resulted in the decline of rates of common bacterial STIs, almost to zero levels. The arrival of the HIV antibody test in 1985 and the rapid uptake of getting tested by gay men, meant it was possible for gay men to develop other strategies for living with HIV. Social research identified the practices of negotiated safety by HIV-negative men in relationships and increasing rates unprotected sex between positive men - practises later collectively described as ‘serosorting’.

Unprotected sex between casual partners who are both HIV-negative has not been endorsed as a legitimate or safe method of HIV prevention. However, for HIV-positive men, unprotected sex between casual partners carries no risk of HIV transmission.

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<sup>11</sup> Annual report of the Australian Gonococcal Surveillance Programme, 1997. *Commun Dis Intell*, Oct 1998; 22: 212-6.

<sup>12</sup> Characteristics of homosexually-active men with gonorrhoea during an epidemic in Sydney, Australia. Donovan B, Bodsworth NJ, Rohrsheim R, McNulty A, Tapsall JW. *Int J STD AIDS*. 2001 Jul;12(7):437-43.

<sup>13</sup> Epidemiologic synergy: Interrelationships between human immunodeficiency virus infection and other sexually transmitted diseases. Wasserheit JN. 1992. *Sexual Transmitted Diseases* 9:61-77.

<sup>14</sup> HIV and Sexually Transmitted Diseases: Lethal Synergy. MS Cohen. *Top HIV Med*, Sep 2004; 12: 104-7.

<sup>15</sup> San Francisco serosorting may explain odd HIV data. STDs have risen, but not new HIV infections. *Aids Alert*, May 2004; 19: 55-6

<sup>16</sup> Transmission of primary and secondary syphilis by oral sex--Chicago, Illinois, 1998-2002. Centers for Disease Control and Prevention (CDC). *MMWR Morb Mortal Wkly Rep*, Oct 2004; 53: 966-8.

<sup>17</sup> An outbreak no longer: factors contributing to the return of syphilis in Greater Manchester. M Ashton, W Sopwith, P Clark, D McKelvey, L Lighton, and D Mandal. *Sex. Transm. Inf.*, Aug 2003; 79: 291-3.

<sup>18</sup> Health in Men data - Presentation by Andrew Grulich at NSW HIV Epidemiology Forum in 2004

These behavioural changes by gay men since the early 1980s, while only slightly increasing HIV transmission risks, act to significantly increase the risk of many sexually transmitted infections – and the changes positive men made, and the formation of positive sexual networks, make them more vulnerable to rises in STIs.

HAART has had a great impact on survival. Over time, this results in greater HIV seroprevalence<sup>10</sup>. Mathematical modelling suggests that every 20 per 100,000 decrease in mortality resulting from HAART causes an estimated 7-12% increase in the incidence of syphilis<sup>19</sup>. Another modelling study<sup>20</sup> showed that even with no increases in risk behaviour by people with HIV, taking into account the impact of HAART on survival and population level increases in risk behaviour it is possible to have large increases in rates of bacterial STIs whilst there are no corresponding increases in HIV infection. This model – an attempt to describe what is actually happening – challenge common understandings of the meanings of rises in STIs amongst gay men with HIV that automatically assume increases in risk behaviour.

A recent meta-analysis of the impact of HAART on sexual behaviour <sup>21</sup> showed that “in the studies reviewed, HIV-positive patients receiving HAART did not exhibit increased sexual risk behaviour, even when therapy achieved an undetectable viral load. However, people's beliefs about HAART and viral load may promote unprotected sex and may be amenable to change through prevention messages.” However, when sexual activity, rather than risk taking is measured, one study<sup>22</sup> showed “that the proportion of people who reported any sexual activity increased over time from 55 to 61% for the HAART-treated group, but decreased from 67 to 63% in the untreated group (P = 0.03)” – even though HAART is significantly associated with higher levels of sexual dysfunction<sup>23,24</sup>. The widespread availability of Viagra and other drugs for erectile dysfunction, and their use by people with HIV in Australia<sup>25</sup> may diminish the impact of sexual dysfunction. There have been significant concerns about a potential Viagra – HIV -STI transmission link<sup>26,27</sup> - although no proven link has been established for HIV.

Issues of sexual health that have been of concern to people with HIV during the HIV/AIDS epidemic include HIV superinfection/reinfection and infections that are sexually transmissible that could become serious opportunistic illnesses in advanced HIV disease. By the early 1990s the consensus of scientific opinion was that HIV superinfection or reinfection did not occur often, or if it did it was not very clinically

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<sup>19</sup> AIDS mortality may have contributed to the decline in syphilis rates in the United States in the 1990s. HW Chesson, TS Dee, and SO Aral. *Sex Transm Dis*, May 2003; 30: 419-24.

<sup>20</sup> Changes in the transmission dynamics of the HIV epidemic after the wide-scale use of antiretroviral therapy could explain increases in sexually transmitted infections: results from mathematical models. MC Boily, FI Bastos, K Desai, and B Masse *Sex Transm Dis*, Feb 2004; 31: 100-13.

<sup>21</sup> Highly active antiretroviral therapy and sexual risk behavior: a meta-analytic review. N Crepaz, TA Hart, and G Marks. *JAMA*, Jul 2004; 292: 224-36.

<sup>22</sup> Sexual and drug risk-related behaviours after initiating highly active antiretroviral therapy among injection drug users. D Vlahov, M Safaen, S Lai, SA Strathdee, L Johnson, T Sterling, and DD Celentano. *AIDS*, Nov 2001; 15: 2311-6.

<sup>23</sup> Antiretroviral therapy is associated with sexual dysfunction and with increased serum oestradiol levels in men. Lamba, D Goldmeier, NE Mackie, and G Scullard. *Int J STD AIDS*, Apr 2004; 15: 234-7.

<sup>24</sup> Sexual dysfunction in HIV-infected patients treated with highly active antiretroviral therapy. J Collazos, E Martinez, J Mayo, and S Ibarra. *J Acquir Immune Defic Syndr*, Nov 2002; 31: 322-6.

<sup>25</sup> HIV Futures 3. Positive Australians on Services, Health and Well-Being. Jeffery Grierson, Sebastian Missin, Karalyn McDonald, Marian Pitts and Mary O'Brien. Monograph Series Number 37, May 2002. Australian Research Centre on Sex, Health and Society.

<sup>26</sup> Increasing incidence and importance of HIV/AIDS and gonorrhoea among men aged  $\geq 50$  years in the US in the era of erectile dysfunction therapy. M Karlovsky, B Lebed, and JH Mydlo *Scand J Urol Nephrol*, Jan 2004; 38: 247-52.

<sup>27</sup> HIV-STD synergy worries public health officials. Drugs, Viagra play role in problem. *Aids Alert*, Jul 2004; 19: 81-3.

significant. The advent of HAART diminished concerns about infections that could become opportunistic illnesses. When HAART first commenced in the mid-1990s there were concerns about transmission of drug resistant strains. Over time, there emerged evidence of drug resistant strains in primary HIV infection – but not through superinfection or reinfection. Post-HAART there were thus no well-publicised, significant health concerns in relation to unprotected sex between HIV-positive gay men. While there has been more recent evidence about the reality of superinfection<sup>28,29</sup>, it appears to mainly occur in people who have been recently infected.

The factors so far discussed have been:

- The changing behavioural responses to HIV over time – particularly in people with HIV;
- The different behavioural strategies that prevent HIV infections compared to those that prevent STIs – with serosorting for HIV increasing STI transmission risks but not impacting greatly on new HIV infections – and more so in people with HIV;
- The impact of HAART in people with HIV:
  - increasing survival and seroprevalence;
  - increasing treatments optimism and behaviour;
  - and
  - increasing sexual activity.
- The possible impact of Viagra;
- and
- The perceived lack of serious sexual health concerns associated with unprotected sex with other positive partners.

These factors all tend to increase STIs amongst people with HIV. When put together with possible decreased knowledge about STIs amongst all gay men, the primary focus on HIV, the reorientation of private sexual health clinics for gay men in the 1980s from primarily being STI focussed to HIV focussed, the complexities of HIV management and the pressures of HIV General Practice then there are understandable reasons why some STIs have been particularly associated with gay men with HIV.

It would be easy for the high rates of STIs amongst positive men to be used to construct a narrative of irresponsibility, as STIs are often used a surrogate marker for HIV transmission risk<sup>30</sup>. Increased sexual activity is not a characteristic of all HIV-positive gay men. The vast majority of sexual activity involving HIV-positive gay men in Australia is safe for HIV transmission. The recent Futures 4 survey<sup>31</sup>

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<sup>28</sup> HIV-1 superinfection and viral diversity. KL Gross, TC Porco, and RM Grant AIDS, Jul 2004;

<sup>29</sup> HIV-1 superinfection: evidence and impact. DJ Chan Curr HIV Res, Jul 2004; 2: 271-4

<sup>30</sup> Effect of highly active antiretroviral therapy on diagnoses of sexually transmitted diseases in people with AIDS. S Scheer, PL Chu, JD Klausner, MH Katz, and SK Schwarcz Lancet, Feb 2001; 357: 432-5.

<sup>31</sup> <sup>31</sup> HIV Futures 4. State of the [Positive] Nation. Jeffery Grierson, Rachel Thorpe, Mark Saunders and Marian Pitts. Monograph Series Number 48, October 2004. Australian Research Centre on Sex, Health and Society.

constructs a map of HIV-positive sexuality in Australia, with 24.3% of the sample having no sex at all and 17.4% in a monogamous relationship.

STI prevention is now an issue for all gay men – both HIV-positive and HIV-negative. However, in HIV prevention education, messages need to be both inclusive and at the same time separately address the particular and different issues of HIV-positive and HIV-negative gay men. The ‘risk’ is not being ‘HIV-positive’ but having many sexual partners.

Importantly, there are now significant health reasons why we should particularly address the potential impact of some STIs in HIV-positive gay men. Recent evidence about the impact of new syphilis infections in gay men with HIV<sup>32</sup> shows that in people with HIV syphilis is harder to treat, more likely to have neurological complications in primary infection, more likely to progress faster and more associated with drug resistance. Recently, sexually transmitted epidemics of hepatitis C have begun to be documented in gay men with HIV in London<sup>33</sup> and Paris<sup>34</sup>. Hepatitis C and HIV co-infection makes both conditions harder to treat, and liver failure associated with Hepatitis B and/or Hepatitis C infection is now one of the most frequent causes of death amongst people with HIV.

Rises in STIs and changes in behaviour could result in over “problematizing” HIV treatments. There is another way to tell this story. Treatments for HIV improved and people with HIV are living longer, more fulfilled lives. For some, that includes a return to sexual activity or the maintenance of sexual activity. This is a good thing! A side effect has been increased rates of some STIs – particularly in gay men with HIV. This is not some major new crisis – but something that we can do something about. What we can’t do is pretend it is not happening – or silence ourselves for fear of the political consequences for gay men – and gay men with HIV in particular.

We have some choices about how we approach the problem. We could choose to make gay men with HIV the top priority target, which is what is being done in the United States. While there are some good aspects to their approach – particularly integrating STI and HIV medical care for people with HIV – their approach also includes supporting “serosorting” and disclosure of HIV status as central strategies. There is no evidence that increased rates of HIV disclosure leads to reduced HIV infections. Increases in “serosorting”, while they may or may not be effective HIV prevention strategies, are precisely what is likely to be facilitating increased STI transmissions. Australian social research identified the significance of serosorting strategies and educational advice for gay men openly discussed these strategies years before their adoption by the United States. Rises in STIs – rather than being a reason for the endorsement of serosorting strategies – instead challenge us to develop advice that takes into account both STIs and HIV.

The mechanisms for STI prevention and control amongst gay men are known. They include:

- Increased resourcing for STI medical services for gay men

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<sup>32</sup> “HIV-positive syphilis patients harder to treat for neurological complications” Gus Cairns on [www.aidsmap.com](http://www.aidsmap.com)

<sup>33</sup> The New HCV Gay Epidemic. Sanjay Bhagani, Royal Free Hospital, London. 2004 Powerpoint presentation

<sup>34</sup> Acute hepatitis C in HIV-infected men who have sex with men. J Ghosn, S Pierre-Francois, V Thibault, C Duvivier, R Tubiana, A Simon, MA Valantin, S Dominguez, E Caumes, and C Katlama. HIV Med, Jul 2004; 5: 303-6.

- The integration of HIV and STI medical care for gay men with HIV
- The national endorsement and adoption of the ACSHP guidelines
- The return to a regular screening and testing culture amongst gay men and the removal of policy and funding barriers to achieve this
- Community education of all gay men about STIs
- Community education of gay men with HIV about the particular impact of STIs in people with HIV
- Working with gay men and gay men with HIV as partners
- Political will and leadership

They do not include:

- Making this a crisis
- Silence and ignoring the issue
- Finger-pointing and blame
- Further stigmatisation of gay men and gay men with HIV

