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HIV/AIDS, hepatitis and sexually transmissible infections in Australia

Annual report of trends in behaviour 2006

Edited by
Juliet Richters

NCHSR

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in collaboration with
Australian Research Centre in Sex, Health and Society
National Centre in HIV Epidemiology and Clinical Research

NCHSR

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Queensland Injectors Health Network

Queensland Positive People

Tasmanian Council on AIDS and Related Diseases

Taylor Square Clinic

The Tree

Victorian AIDS Council/Gay Men's Health Centre

Victorian Department of Human Services

VIVAIDS

Western Australian AIDS Council

Western Australian Centre for Health Promotion Research

Western Australian Substance Users Association.

Glossary

lipodystrophy An abnormal body-fat redistribution that is an effect of some antiretroviral drugs.

negotiated safety agreement The agreement between a **seroconcordant** couple to have unprotected sex with each other, but not to have sex (or unprotected sex) with other people.

person-year A measure of a period (e.g. of use of a method or treatment) aggregated across a group of people. Fifty person-years of use of a method may be 50 people using it for one year, or 25 people for two years, or a combination of different periods.

post-exposure prophylaxis A drug or procedure used to reduce the risk of infection after potential exposure has occurred, e.g. antiretrovirals administered to reduce the risk of HIV transmission after a condom has broken during sex.

seroconcordant Of the same HIV **serostatus.**

seroconversion The process of becoming HIV-positive on antibody testing; the appearance of HIV antibodies in the blood serum. Seroconversion is often accompanied by a flu-like illness.

seroconverter Someone who is in the process of serocoverting, i.e. becoming antibody-positive to HIV, or has recently done so.

serodiscordant Known to be of different HIV **serostatus**, e.g. HIV-positive and HIV-negative.

serononconcordant Not of the same HIV serostatus, e.g. HIV-positive and untested.

serosorting The attempt to avoid HIV transmission by selecting sexual partners of the same **serostatus.**

serostatus A person's antibody status in relation to HIV infection, i.e. HIV-negative, HIV-positive, untested or unknown, as ascertained by testing for HIV antibodies in the blood serum.

Preface

This report is the eighth in the annual series to review behavioural data relevant to the transmission of human immunodeficiency virus (HIV), viral hepatitis and sexually transmissible infections (STIs) in Australia. It also examines other behavioural data relevant to prevention (such as uptake of testing and treatment) and to the social aspects of treatment and care of those who have been infected with hepatitis C virus or HIV, including those who are living with acquired immune deficiency syndrome (AIDS). It does not include all research done by the National Centre in HIV Social Research, but concentrates on data giving trends or repeated measures.

Unless stated otherwise, all data in this report are from the five-year period 2001 to 2005 inclusive. This annual report builds on the previous reports by comparing data from the past year with data from the previous four. Data pertaining to trends over time in behaviour relevant to the risk of HIV transmission over a period extending from 1984 to 1995 can be found in *Valuing the past … investing in the future: Evaluation of the National HIV/AIDS Strategy 1993–94 to 1995–96* (Feachem, 1995) and its Technical Appendices 3 (Crawford et al., 1996), 4 (Crofts et al., 1995) and 5 (A. Smith et al., 1995). Data from periods after the Feachem evaluation were presented in the seven earlier reports in this series, *HIV/AIDS and related diseases in Australia: Annual report of behaviour* (National Centre in HIV Social Research, 1999, 2000, 2001; Rawstorne et al., 2005c; Van de Ven et al., 2002, 2003, 2004).

As in previous years, this report is published as a companion to *HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2006* compiled by the National Centre in HIV Epidemiology and Clinical Research (National Centre in HIV Epidemiology and Clinical Research [NCHECR], 2006. For earlier reports in the series, see NCHECR, 2004, 2005). A small number of the tables in this report provide data that overlap with or duplicate those in the NCHECR report.

We thank a large number of organisations and people involved in health throughout Australia for their help and support. Their contributions to this report are very gratefully acknowledged. In particular, we acknowledge the contribution of the National Centre in HIV Epidemiology and Clinical Research at the University of New South Wales and the Australian Research Centre in Sex, Health and Society at La Trobe University in Victoria.

Note: Throughout this report the letter '*N*' denotes the denominator in each specific analysis (i.e. the number of people in the study or who responded to a particular question) while '*n*' denotes the frequency corresponding with the percentage (i.e. the number of people who reported a particular practice or said 'yes' to a particular question). Unless stated otherwise, missing values have been ignored and '*N*' refers to the number of people who responded to a particular question.

Executive summary

Sexual behaviour among gay and homosexually active men

Information about gay men comes from several questionnaire studies—the gay community periodic surveys (conducted in most Australian state capital cities), the Health in Men study, the Positive Health study and the Asian Gay Community Periodic Survey—and from in-depth interviews with men who had recently acquired HIV infection (Seroconversion study), with sexually adventurous men and with men diagnosed with syphilis.

Relationships

- **Regular relationships** About 60% to 70% of gay men reported having had sex with a regular partner in the six months before they were surveyed. This has not changed over the past few years.
- **Casual relationships** Around 65% to 75% of men had had sex with a casual partner in the previous six months. This has not changed over the past few years.
- **Sex with both regular and casual partners** 40% to 50% of men had had sex with both regular and casual partners in the six months before the survey.

Anal sex and condom use

- **Overall** Around 75% to 85% of gay men had engaged in any anal intercourse in the previous six months.
- **Unprotected anal intercourse** Over the past five years, the proportion of men who had had unprotected anal intercourse (i.e. without using a condom) at least once in the six months before the survey has remained constant, though varying between about 40% and 60% in different groups.
- **Unprotected anal intercourse in casual encounters** Across many studies, the proportion of men who had had unprotected anal intercourse with a casual partner at least once in the six months before the survey rose from the mid-1990s to 2001, after which it levelled off at around 23% (see Figure 1). Overall, HIV-positive men were more likely to have had unprotected anal intercourse with casual partners than were HIV-negative men. Some (but not all) unprotected casual sex reported by HIV-positive men was with partners who were also HIV-positive.
- **Unprotected anal intercourse in regular relationships** Between half and two-thirds of the men in a regular relationship had had unprotected anal intercourse in the relationship.

Safe sex agreements in relationships

- **'Safe sex' agreements** In relationships where both men were HIV-negative or both were HIV-positive, around 70% had a 'safe sex' agreement. In other words, they generally agreed to have unprotected anal intercourse with each other, but not to do so with other people.
- **Broken agreements** During the past five years, the proportion of men in a regular relationship who had a safe sex agreement but who reported having had unprotected sex outside the relationship in the previous six months varied between around 5% and 10% in different groups.
- **Agreements in serodiscordant relationships** Of men in relationships in which both men's HIV status was unknown, or in which one man was HIV-positive and the other HIV-negative, 25% to 35% had safe sex agreements, i.e. they agreed not to have any unprotected anal intercouse.

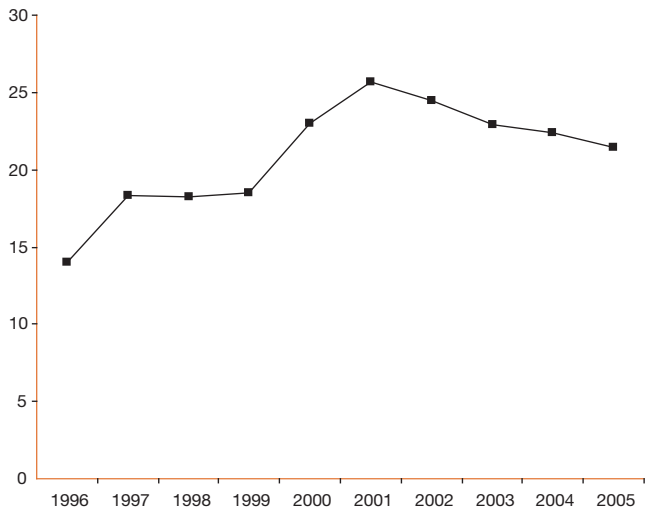

Figure 1: Percentage of men in the Sydney Gay Community Periodic Surveys who reported any unprotected anal intercourse with casual partners in the six months before the survey. In other states, rates are a little lower and changes often occur a little later.

HIV transmission and prevention

The Health in Men study found that, out of 100 HIV-negative gay men in Sydney, one every year acquired HIV infection. Men who became infected were more likely to:

- have other sexually transmissible infections such as gonorrhoea
- be part of sexually adventurous subcultures
- have unprotected receptive anal intercourse.

Unprotected sex sometimes occurred because of:

- the complexities of sex, love and HIV risk in a relationship between an HIV-positive and an HIV-negative man
- mistaken assumptions and miscommunication in the early stages of a new relationship
- previous contact or friendship with a casual sexual partner leading to reduced awareness of risk
- intimacy, sexual attraction and romance overwhelming considerations of risk.

HIV testing

- **Gay men ever tested** Most studies showed that over 80% of gay men had ever been tested for HIV. (Testing rates were a little lower among Asian gay men and in Perth.)
- **Gay men recently tested** Around 40% to 50% of the men had had an HIV test in the previous six months. The Sydney and Melbourne periodic surveys showed an increase in recent HIV testing.
- **Younger gay men** Around 65% to 75% of men under 25 had ever been tested for HIV.

Other sexually transmissible infections

- In-depth interviews with gay and sexually adventurous men suggested that infections other than HIV (such as gonorrhoea, chlamydia and herpes) were often seen as an inevitable or acceptable risk of sexual activity, and that sexually transmissible infections were not considered sufficiently serious for some men to change their sexual practices.
- More men have been undergoing testing recently. Most studies showed a significant increase in testing for sexually transmissible infections, mostly through testing of urine and blood samples (see Figure 2).

Women in contact with Sydney's gay community

The Sydney Women and Sexual Health study has been conducted every two years since 1996, targeting women who are in contact with the gay and lesbian communities in Sydney. Most of the sample is recruited at the Sydney Gay and Lesbian Mardi Gras Fair Day.

- **Sexual identity** In 2004, 69% of the women identified as lesbian/dyke/homosexual/gay, 10% as bisexual, 16% as heterosexual and 5% as 'other'.
- **Sexual contact with women** 83% of respondents had had sex with a woman, 67% in the six months prior to the survey.
- **Sexual contact with gay men** 25% of respondents had had sex with a gay or bisexual man in the six months before the survey, and 1% had had unprotected vaginal or anal intercourse with a gay or bisexual male partner in that time.

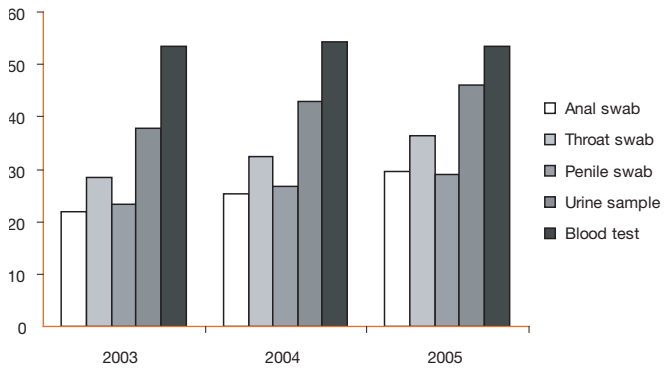

Figure 2: Average percentage of men in the Brisbane, Sydney and Melbourne gay community periodic surveys who reported having been tested for STIs in the previous six months, by type of test they had undergone. Information from periodic surveys in other cities has not been included because of a lack of continuous data.

- **Protected sex** Of the women who had had oral sex with a woman in the previous six months, 9% had used a dental dam, and most had done so only once. Of those who had had sex with a woman, 13% had used gloves and 18% had used condoms (perhaps for toys), and condoms were used more frequently. Only a minority of woman reported having had oral sex during menstruation, but it was more common to do so with a tampon in place than to use a dam.
- **HIV testing** 55% of the women reported ever having been tested for HIV.
- **Testing for other sexually transmissible infections** 75% reported having been tested for STIs other than HIV, with one quarter reporting having had a test within the six months prior to the survey.

Living with HIV

The data on living with HIV are drawn from the Positive Health cohort of HIV-positive gay men and from the cross-sectional HIV Futures survey of HIV-positive gay and heterosexual men and women.

Sexual practice

- **HIV-positive gay men** More than half of the men who had had casual partners reported unprotected sex with a casual partner. Men were more likely to have had unprotected sex with a casual partner whom they knew (or believed) to be also HIV-positive.
- **HIV-positive heterosexuals** Both men and women were more likely to have had unprotected sex with an HIV-positive than an HIV-negative regular partner. A quarter of the HIV-positive men and a handful of the women had had unprotected casual sex.

Self-rated health

HIV-positive people largely rated their health as excellent or good, with no trend over time.

Treatments and viral load

High proportions of HIV-positive men were on antiretroviral therapy, and 65% to 85% of HIV-positive men on antiretroviral therapy reported having an 'undetectable' viral load, compared with 10% to 30% of those not on treatments.

Treatment experiences

Experiences of diarrhoea/nausea, anxiety/depression/fear and lipodystrophy (body shape change due to fat redistribution) appear to be the norm among respondents on antiretroviral therapy.

Adherence

Data suggests that a high proportion of HIV-positive men are adhering to treatment regimens. However, approximately half reported having trouble taking pills on time. There was a correlation between missing doses and regarding medication as an unwanted reminder of HIV status and/or having depressive symptoms.

Recreational drug use

Young people at music festivals

Among young people sampled at music festivals in 2004, the majority reported illicit drug use in their lifetime, with cannabis the most commonly reported drug. Drug use was common in the social networks of the participants, many of whom reported drug use with friends and partners.

Of the total sample, 5% reported ever having injected a drug and 1% reporting having done so in the previous six months.

Women in contact with Sydney's gay and lesbian community

Women in contact with the gay and lesbian community reported higher rates of illicit drug use than the general community, but lower rates than gay men.

Gay and homosexually active men

- **Illicit drug use** Gay men reported higher levels of illicit drug use than the general community, with strong regional variation. There was more drug use in Sydney than in other cities.
- **Injecting drug use** Rates of injecting drug use were much lower than rates of other drug use, with more HIV-positive men injecting than HIV-negative men. In general, there is no evidence of a trend over time, but there has been a significant decline in injecting drug use in Brisbane.

Hepatitis C

NCHSR does not currently conduct projects that routinely survey people living with hepatitis C. The projects reported on below are qualitative and quantitative cross-sectional studies focused on particular issues of hepatitis C treatment. These reports do not provide results which can be examined over time.

However, the findings presented below are very useful for examining issues associated with the uptake and experience of hepatitis C treatment. The psychological, social and physical aspects of hepatitis C treatment have bearing on the health and well-being of individuals, and on the capacity of the public health system to manage a large and growing number of people suffering long-term ill-health as a result of hepatitis C infection.

Side effects of hepatitis C treatment

A variety of studies show that interferon-based treatments produce severe physical and psychiatric side effects, including fatigue, aching muscles, major depression and anxiety.

The latest regimen (pegylated interferon and ribavirin) provides a better cure rate and broader access to treatment. However, research suggests that treatment will continue to have a high attrition rate as a result of side effects.

Management of side effects and treatment experience

In-depth interview studies with people receiving hepatitis C treatment and with health care workers showed:

- **Adaptive responses** To manage side effects, participants drew upon adaptive coping strategies they had learnt in response to past adversity.
- **Resilience** Assessment before the start of hepatitis C treatment may be useful in gauging a person's emotional capacity to cope with side effects.
- **Unrealistic optimism** Some people beginning hepatitis C treatment had an unrealistically optimistic view of their capacity to cope with the side effects of treatment.
- **Stigma and discrimination** Some people with hepatitis C experienced discrimination and poor treatment, often by health workers, after they disclosed that they were infected or in treatment.
- **Illicit drug use** It was common for people with hepatitis C to continue illicit drug use both before and during treatment, although this is rarely acknowledged in the clinical literature.
- **Everyday coping strategies** Participants adopted a wide variety of everyday strategies for coping with treatment side effects, including using other medications, reorganising work and other activities, relaxation, positive changes to diet and exercise, and a positive mental attitude.

Barriers to treatment among current injecting drug users

In the study of those who attended a methadone clinic and primary health care facility for injecting drug users:

- **23% were refused treatment for hepatitis C** The most commonly reported reasons for being refused treatment were that the participant's liver disease was not sufficiently advanced or that the participant was a current injecting drug user.
- **30% were offered treatment but declined** The most common reasons for declining treatment were concern about adverse side effects or not feeling ill enough to commence treatment.

More than 80% would consider treatment for hepatitis C despite the difficulties, especially if medication were given to reduce side effects.

Note: This is a selected summary of key issues, especially those where behavioural trends have been followed over the years. See the complete report for more detail and more topics.

1 Sexual practice

During the period covered by this report (2001 to 2005), much of the research into sexual practice conducted by the National Centre in HIV Social Research (NCHSR) was focused on documenting the behaviour of homosexually active men, the population most affected by HIV in Australia. NCHSR has also concerned itself with research into sexual practice among other groups, including young people, women in contact with the gay and lesbian community, and the general population.

In this report a distinction is made between regular and casual sexual partners. This distinction is important because the meanings of sexual behaviour change depending on whether such behaviour occurs within a regular or committed relationship with a boyfriend or lover, or in a casual encounter. Moreover, strategies for safe sex take into account the context (regular partner or casual encounter) of sexual practice (Crawford et al., 2006). Among homosexually active men, many of whom have both regular and casual partners, the distinction is especially relevant.

1.1 Sexual practice among homosexually active men

With respect to homosexually active men, information in this report comes mostly from studies based in the state capitals of Australia. Studies of the general population (such as the Australian Study of Health and Relationships, A. Smith et al., 2003a) and earlier national studies of homosexually active men such as the Male Out and Male Call surveys (Kippax et al., 1994; Crawford et al., 1998; Van de Ven et al., 2001) show that these targeted studies in the capital cities reach men who are more likely to be closely attached to gay communities than homosexually active men elsewhere. These community-attached gay men tend to have many gay friends, spend time with gay men, and have sex only with men. In general, data from state-based studies such as the gay community periodic surveys, the Health in Men cohort of HIV-negative men and the Positive Health cohort of HIV-positive people are based mainly on men recruited from gay communities.

Sexual practice data in the Positive Health study were first collected in 2001 in Sydney and in 2003 in Melbourne. Therefore, no sexual practice data are reported in the Melbourne arm of the Positive Health study earlier than 2003. In the tables and figures in this annual report of trends in behaviour, Positive Health data for New South Wales and Victoria are referred to as 'Sydney' and 'Melbourne' respectively. While most of the data were collected from participants living in the two capital cities, data from participants living in rural and regional areas of both states are also included.

The most complete state-based data are from Sydney, where data from Health in Men (Mao et al., 2002) and Positive Health (Fogarty et al., 2003) have been available from 2001. The Sydney gay community periodic surveys, funded by the NSW Department of Health, have been carried out in Sydney every six months since February 1996. Results from these surveys have been reported in the form of six-monthly updates as well as annual summary reports (Prestage et al., 1999; Hull et al., 2003). For the purpose of this report, Sydney Gay Community Periodic Survey data have been aggregated in order to report on an annual basis. Data were also available from the Asian Gay Community Periodic Survey (Gay Asian Men) conducted in Sydney in 2002 (Mao et al., 2003).

Similar gay community periodic surveys were also carried out annually in Melbourne (Hull et al., 2004c) and Queensland (Hull et al., 2005b), and every two years in Adelaide (Hull et al., 2004b) and Perth (Hull et al., 2005a). The Canberra survey was carried out in 2000 and 2003 (Hull et al., 2004a). Annual Queensland gay community periodic surveys covered Brisbane and the Sunshine Coast and Gold Coast from 1998 to 2004. Cairns was included from 1999. (In the tables and figures, Queensland periodic survey data are referred to as 'Brisbane'. Most of the participants were recruited in Brisbane but data from the Sunshine Coast, the Gold Coast and Cairns are included.)

Nationwide information relating to people living with HIV comes from HIV Futures 3 of 2001 (Grierson et al., 2002) and HIV Futures 4 of 2003 (Grierson et al., 2004). Data were collected for HIV Futures 5 in 2005 but were not available for inclusion in this report.

In each of the surveys from which data are included in this chapter, men were asked about their sexual practice in the six months prior to the survey. Key indicators in this area were:

- the percentage of men who had had regular and/or casual partners
- the percentage of men who had engaged in unprotected anal intercourse (with either regular or casual partners or both)
- the percentage of men who had engaged in unprotected anal intercourse with casual partners
- the percentage of men who had engaged in unprotected anal intercourse with regular partner(s)
- mean scores on a scale of esoteric practices for men who had engaged in (a) any unprotected anal intercourse, (b) unprotected anal intercourse with regular partners and (c) unprotected anal intercourse with casual partners.

A sizeable proportion of homosexually active men reported having had sex with both regular and casual partners.

Tables 1.1.1 to 1.1.6 show the percentages of men who had engaged in the above practices over the period 2001 to 2005. Information that enables an assessment of change in behaviour over the whole of this period is available for studies in which there are more than two data points.

1.1.1 Percentage reporting regular, casual, and both regular and casual, partners

As mentioned above, sexual behaviour often depends on the context, in particular the relationship between the people involved. Table 1.1.1 shows the percentage of men who reported having had regular or casual partners, and who reported having had both regular and casual partners, in the six months before the survey. These percentages are derived from responses about sexual behaviour with regular and/or casual partners. These are not mutually exclusive categories, since those who had had sex with both regular and casual partners were also counted as having had sex with each category of partner.

Around 60% to 70% of gay men reported having had sex with a regular partner in the six months prior to each survey. A slightly lower proportion of men, 50% to 60%, reported this from the Positive Health study in Sydney and Melbourne, and from the Asian Gay Community Periodic Survey in Sydney in 2002. Over time, there were no significant trends in the proportion who had had regular partners.

The picture for those who had had casual partners was one of fairly consistent percentages (around 65% to 75%); a slightly higher proportion of participants in the Health in Men study reported this. Over time, there were no

Table 1.1.1: Percentage of men who reported sex with (a) regular, (b) casual and (c) both regular and casual partners[1]

Source	2001		2002		2003		2004		2005	
	N[2]	%	*N*	%	*N*	%	*N*	%	*N*	%
(a) Men with regular partners										
Sydney										
Health in Men	450	68.2	823	75.0	1179	71.9	1103	70.4	942	68.7
Positive Health	265	49.4			282	60.3	254	55.9	259	54.8
Periodic	2862	64.2	2884	63.0	2541	59.6	2821	61.6	3413	60.1
Gay Asian Men			457	56.5						
Melbourne										
Positive Health					61	57.4	53	43.4	40	57.5
Periodic	1830	65.5	1877	63.6	2064	62.9	1962	65.0	1804	64.6
Brisbane										
Periodic	1571	61.7	1787	59.3	1511	59.4	1667	61.8	1382	61.6
Perth										
Periodic			790	63.3			1014	65.3		
Adelaide										
Periodic	565	65.7			834	61.3			629	65.2
Canberra										
Periodic					255	62.7				
(b) Men with casual partners										
Sydney										
Health in Men	450	80.0	823	77.9	1179	79.1	1103	78.1	942	74.1
Positive Health	265	57.0			282	75.9	254	76.8	259	78.8
Periodic	2862	73.3	2884	71.5	2541	70.0	2821	69.7	3413	70.0
Gay Asian Men			457	76.8						
Melbourne										
Positive Health					61	62.3	53	73.6	40	65.0
Periodic	1830	66.1	1877	67.6	2064	69.2	1962	68.2	1804	68.5
Brisbane										
Periodic	1570	71.5	1787	69.8	1511	69.9	1667	69.3	1382	70.5
Perth										
Periodic			790	62.5			1014	61.2		
Adelaide										
Periodic	565	68.0			834	72.4			629	64.1
Canberra										
Periodic					255	70.6				
(c) Men with both regular and casual partners										
Sydney										
Health in Men	450	49.6	823	55.0	1179	52.9	1103	50.7	942	46.1
Positive Health	265	29.4			282	44.0	254	41.7	259	40.9
Periodic	2862	42.7	2884	40.9	2541	37.5	2821	38.9	3431	37.7
Gay Asian Men			457	43.8						
Melbourne										
Positive Health					61	41.0	53	30.2	40	40.0
Periodic	1830	39.0	1877	39.7	2064	40.1	1962	42.0	1804	41.9
Brisbane										
Periodic	1571	40.9	1787	38.4	1511	39.8	1667	40.3	1382	42.5
Perth										
Periodic			790	35.6			1014	37.1		
Adelaide										
Periodic	565	41.2			834	40.6			629	37.8
Canberra										
Periodic					255	38.8				

[1] Based on responses to questions about sexual behaviour with regular and/or casual partners.

[2] '*N*' means the number in the study on which the percentage given is based. Thus in 2001 in Health in Men, 307 men (68.2% of 450) reported that they had had sex with a regular partner.

significant trends in the proportion who had had casual partners, except in the periodic survey data from Sydney, which indicated a slight decrease in the proportion of men who had had casual partners ($p < 0.01$).

Around 40% to 50% of men reported having had sex with both regular and casual partners in the six months preceding data collection. The highest proportion was in the Sydney Health in Men cohort, with a decrease from a peak in 2002 ($p < 0.01$). A slightly lower proportion of participants in the Perth and Canberra periodic surveys and in the Melbourne arm of the Positive Health study reported having both regular and casual partners. There was a small but significant rise over time in the proportion reporting this in the Melbourne periodic survey ($p < 0.05$). However, Sydney periodic survey data show a decrease ($p < 0.001$).

As in earlier periods, HIV-positive men were less likely to report having regular partners than HIV-negative men. Thus, fewer of the men in the Sydney Positive Health study reported having regular partners than did their HIV-negative counterparts in Health in Men. Therefore, in drawing conclusions throughout this report, it is important to differentiate between studies with samples comprised of HIV-negative participants only (Health in Men), HIV-positive participants only (Positive Health), and HIV-negative and HIV-positive men as well as men who did not know their serostatus (e.g. periodic surveys). (Note: See Table 1.1.7, page 14, for a breakdown of some sexual practice data by serostatus.)

1.1.2 Percentage engaging in any anal intercourse

Table 1.1.2 shows the percentage of men who reported having engaged in any anal intercourse with either regular or casual sex partners, including anal intercourse without ejaculation ('withdrawal'), during the six months prior to data collection.

Generally, around 75% to 85% of gay men had engaged in any anal intercourse during the six months prior to interview. The proportion among Health in Men participants was slightly higher (88% to 93%), with a decrease between 2001 and 2005 ($p < 0.05$). This was matched by a slight decrease in the Sydney periodic survey ($p < 0.05$), whereas the proportion rose slightly in the Melbourne period survey ($p < 0.05$). The proportions in other surveys have been quite stable over time, with no significant trends.

1.1.3 Percentage engaging in any unprotected anal intercourse

Table 1.1.3 shows, for the years 2001 to 2005, the percentage of men who reported having engaged in unprotected anal intercourse, including anal intercourse without ejaculation, with any male partner(s), regular or casual, at least once in the six months prior to data collection. This indicator varied considerably from sample to sample, reflecting differences between samples with respect to sex with regular and/or casual partners as shown in Table 1.1.1. Although significant upward trends in the rates of unprotected anal intercourse across most regions were reported in the equivalent report three years ago (Van de Ven et al., 2003), no such trends are evident from 2001 to 2005 except for a slight downward trend in the Sydney periodic survey ($p < 0.01$). These data confirm that over the past five years overall rates of unprotected anal intercourse have plateaued.

1.1.4 Percentage engaging in unprotected anal intercourse with casual partners

Tables 1.1.4a (based on total samples) and 1.1.4b (reduced base of those who had casual partners) show, for the years 2001 to 2005, the percentage of men who reported having engaged in any unprotected anal intercourse, including anal intercourse without ejaculation, with casual partners during the six months prior to the survey.

Table 1.1.2: Men engaging in any anal intercourse[1]

	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Sydney										
Health in Men	450	92.9	823	90.5	1179	90.4	1103	90.7	942	88.1
Positive Health	232	81.9			282	83.7	254	80.7	259	85.3
Periodic	2862	85.5	2884	84.4	2541	82.3	2821	83.5	3413	83.7
Gay Asian Men			457	74.6						
Melbourne										
Positive Health					61	63.9	53	81.1	40	72.5
Periodic	1830	78.9	1877	78.8	2064	79.8	1962	79.4	1804	81.7
Brisbane										
Periodic	1571	81.1	1787	78.8	1511	80.3	1667	80.6	1382	80.5
Perth										
Periodic			790	75.2			1014	77.6		
Adelaide										
Periodic	565	77.5			834	78.7			629	79.2
Canberra										
Periodic					255	83.5				

[1] In the national Male Out survey in 2000, the percentage of non-gay-community-attached men who had had any anal intercourse (76%) was generally lower than among the mostly gay-community-attached samples shown here.

For this period in Sydney, both in Health in Men ($p < 0.05$) and the periodic survey ($p < 0.001$), rates of unprotected anal intercourse with casual partners have decreased.

Key data from Table 1.1.4a, based on total samples, are also presented graphically in Figure 3. Where available, relevant data from surveys conducted since 1996 are also included. For the purposes of comparison with the periodic surveys, only data for gay-community-attached men are presented from the Male Call and Male Out surveys. (Note that for legibility the *y*-axis has been drawn from 0% to 60% rather than the complete 0% to 100%.) Figure 3 shows that, across many studies, rates of unprotected anal intercourse with casual partners rose from the mid- to late 1990s to 2001, after which they levelled off. Men in the Positive Health study reported the highest rate of unprotected anal intercourse with casual partners. This higher rate is partly attributable to the relatively large proportion of HIV-positive men who had engaged in unprotected anal intercourse with HIV-positive casual partners (Rawstorne et al., 2005a).

Table 1.1.4b, based on those men who had casual partners, shows, for the years 2001 to 2005, the percentage of men who reported having engaged in any unprotected anal intercourse, including anal intercourse without ejaculation, with casual partners during the six months prior to the survey. Data from the Sydney periodic survey showed a

Table 1.1.3: Men engaging in any unprotected anal intercourse

	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Sydney										
Health in Men	450	63.1	823	64.6	1179	65.3	1103	64.0	942	63.3
Positive Health	232	50.0			282	58.2	254	52.0	259	60.2
Periodic	2862	51.2	2884	51.3	2541	47.4	2821	49.3	3413	48.2
Gay Asian Men			457	31.9						
Melbourne										
Positive Health					61	34.3	53	52.8	40	55.0
Periodic	1830	46.8	1877	46.2	2064	43.7	1962	45.3	1804	47.5
Brisbane										
Periodic	1571	44.0	1787	45.1	1511	46.0	1667	46.3	1382	44.4
Perth										
Periodic			790	45.4			1014	45.8		
Adelaide										
Periodic	565	42.1			834	42.1			629	46.1
Canberra										
Periodic					255	42.4				

Table 1.1.4a: Men engaging in any unprotected anal intercourse with casual partners (based on all men who participated)

	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Sydney										
Health in Men	450	30.0	823	29.2	1179	29.0	1103	27.2	942	24.8
Positive Health	232	34.1			282	45.0	254	38.2	259	50.6
Periodic	2862	25.7	2884	24.5	2541	22.9	2821	22.4	3413	21.4
Gay Asian Men			457	14.4						
Melbourne										
Positive Health					61	24.6	53	37.7	40	35.0
Periodic	1830	17.0	1877	19.1	2064	20.5	1962	17.9	1804	20.3
Brisbane										
Periodic	1571	19.2	1787	22.1	1511	21.1	1667	21.7	1382	22.1
Perth										
Periodic			790	18.5			1014	17.4		
Adelaide										
Periodic	565	16.5			834	18.0			629	15.6
Canberra										
Periodic					255	16.1				

significant decrease in the proportion of men who had engaged in unprotected anal intercourse with their casual partners ($p < 0.001$). In all other cities since 2001, there has been no trend increase or decrease in rates of unprotected anal intercourse with casual partners.

1.1.5 Percentage engaging in unprotected anal intercourse with regular partners

Tables 1.1.5a (based on total samples) and 1.1.5b (reduced base of those who had regular partners) show, for the years 2001 to 2005, the number and percentage of men who reported having engaged in any unprotected anal intercourse, including anal intercourse without ejaculation,

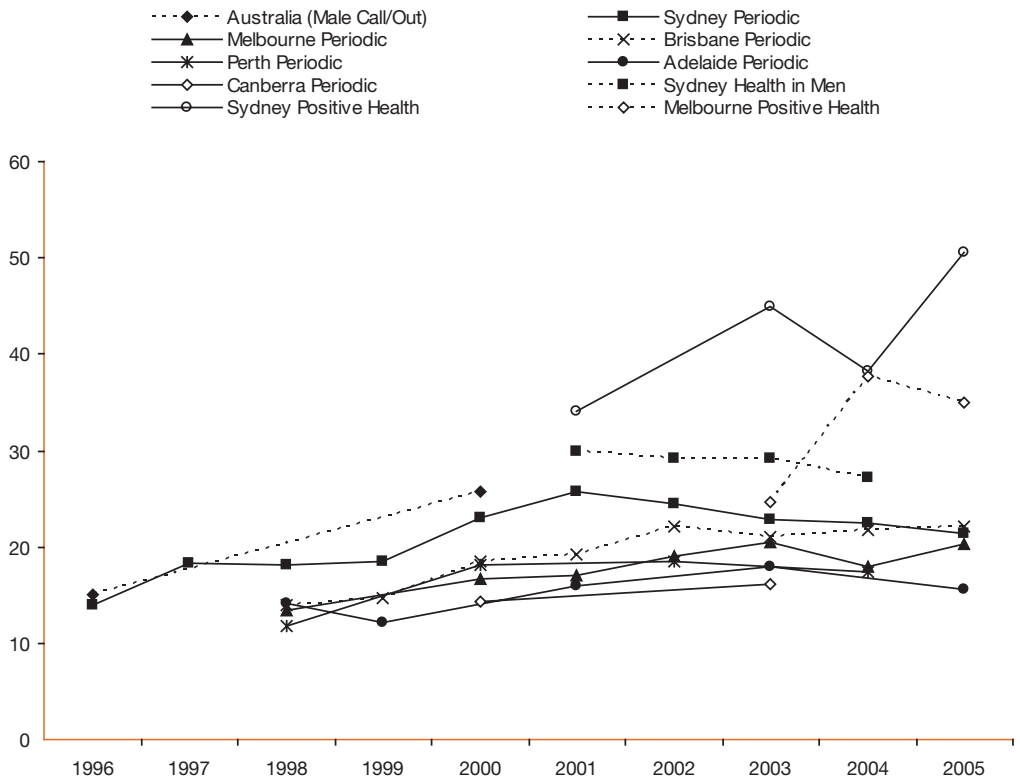

Figure 3: Percentage of men reporting any unprotected anal intercourse with casual partners in the six months prior to the survey

Table 1.1.4b: Men engaging in any unprotected anal intercourse with casual partners (based on the men who had casual partners)

	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Sydney										
Health in Men	360	37.5	641	37.4	932	36.7	861	34.8	698	33.5
Positive Health	151	52.3			214	59.3	195	49.7	204	64.2
Periodic	2098	35.0	2062	34.2	1779	32.8	1966	32.2	2388	30.5
Gay Asian Men			351	18.8						
Melbourne										
Positive Health					38	39.5	39	51.3	26	53.8
Periodic	1209	25.7	1268	28.3	1429	29.7	1338	26.2	1235	29.7
Brisbane										
Periodic	1124	26.9	1248	31.7	1056	30.2	1156	31.2	974	31.3
Perth										
Periodic			494	29.6			621	28.3		
Adelaide										
Periodic	384	24.2			604	24.8			403	24.3
Canberra										
Periodic					180	22.8				

with regular partners during the six months prior to each survey. Values for this indicator were steady across all data sets. Slightly higher proportions of men had engaged in unprotected anal intercourse with their regular partner than with casual partners.

Key data from Table 1.1.5a, based on total samples, are presented graphically in Figure 4. Again, where available, relevant data from surveys conducted since 1996 are also included. For the purposes of comparison with the periodic surveys, only data for gay-community-attached men are presented from the Male Call and Male Out surveys. (Note that for legibility the *y*-axis has been drawn from 0% to 60% rather than from 0% to 100%.)

Table 1.1.5b, based on those men who had regular partners, shows, for the years 2001 to 2005, the number and percentage of men who reported having engaged in unprotected anal intercourse, including anal intercourse without ejaculation, with regular partners during the six months prior to the respective survey. The only study to show a significant increase in the proportion of men who had engaged in unprotected anal intercourse with regular partners was the Sydney Health in Men study ($p < 0.05$).

Table 1.1.5a: Men engaging in any unprotected anal intercourse with regular partners (based on all men who participated)

	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Sydney										
Health in Men	450	43.1	823	49.5	1179	49.6	1103	48.6	942	48.5
Positive Health	232	29.3			282	31.6	254	28.0	259	27.0
Periodic	2862	35.8	2884	36.9	2541	33.4	2821	36.1	3413	35.2
Gay Asian Men			457	24.3						
Melbourne										
Positive Health					61	24.6	53	28.3	40	32.5
Periodic	1830	37.5	1877	34.9	2064	33.4	1962	36.5	1804	37.2
Brisbane										
Periodic	1571	33.5	1787	33.1	1511	34.7	1667	34.9	1382	33.1
Perth										
Periodic			790	34.7			1014	36.6		
Adelaide										
Periodic	565	34.7			834	31.8			629	37.0
Canberra										
Periodic					255	32.9				

Table 1.1.5b: Men engaging in any unprotected anal intercourse with regular partners (based on the men who had regular partners)

	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Sydney										
Health in Men	307	63.2	617	66.0	848	69.0	777	69.0	647	70.6
Positive Health	132	51.5			170	52.4	142	50.0	142	49.3
Periodic	1836	55.8	1816	58.6	1514	56.0	1738	58.6	2051	58.6
Gay Asian Men			258	43.0						
Melbourne										
Positive Health					35	42.9	23	65.2	23	56.5
Periodic	1199	57.2	1193	54.9	1298	53.2	1276	56.2		
Brisbane										
Periodic	969	54.3	1059	55.8	898	58.4	1031	56.4	851	53.8
Perth										
Periodic			500	54.8			662	56.0		
Adelaide										
Periodic	371	52.8			511	51.9			410	56.8
Canberra										
Periodic					160	52.5				

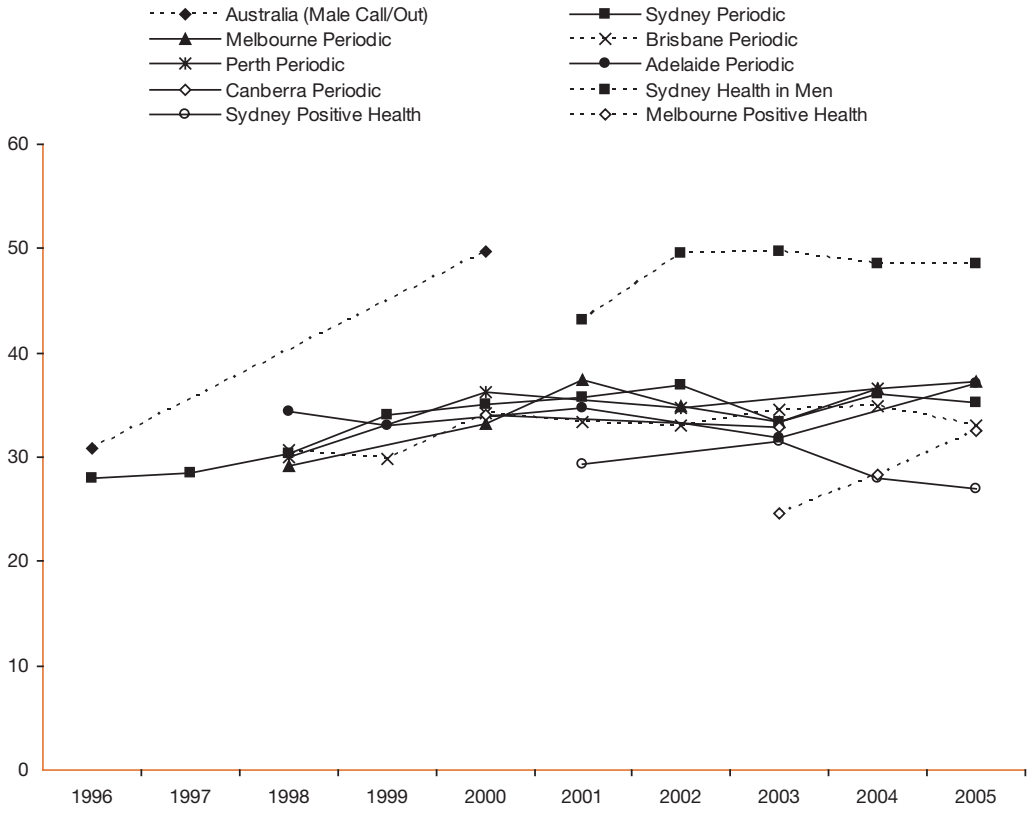

Figure 4: Percentage of men reporting any unprotected anal intercourse with regular partners in the six months prior to the survey

1.1.6 Esoteric practices and unprotected anal intercourse

Earlier research at NCHSR (Kippax et al., 1998) indicated that there was a significant relationship between becoming infected with HIV and having engaged in a range of esoteric practices, although most of the practices categorised as 'esoteric' are not in themselves likely to lead to transmission of HIV. These practices include fisting (inserting the hand or forearm in the rectum), urolagnia (water sports), use of sex toys, use of cock rings, engaging in bondage and discipline, sadomasochism or dominance and submission practices, and dressing up as part of fantasy. Table 1.1.6 gives the mean score on a scale of esoteric practices for men who reported any unprotected anal intercourse (UAI) and those who did not report any unprotected anal intercourse (no UAI). '*N*' is the number of men from which the mean was calculated. The data in Table 1.1.6 confirm that there is a significant relationship between engaging in esoteric practices and engaging in unprotected anal intercourse, but there is no evidence for change over time in the level of engagement in these practices.

Table 1.1.6: Mean scores on esoteric sexual practices scale, by whether men had unprotected anal intercourse (UAI)[1,2]

	2001		2002		2003		2004		2005	
	N	Mean	*N*	Mean	*N*	Mean	*N*	Mean	*N*	Mean
Sydney										
Health in Men[3]										
Any UAI	284	2.08	532	1.90	770	2.04	706	1.82	596	1.80
No UAI	166	1.14	291	1.25	409	1.23	397	1.15	346	1.12
Positive Health										
Any UAI	116	3.38			155	3.44	132	3.51	156	3.64
No UAI	116	1.39			129	1.49	122	1.49	103	1.18

[1] 'Esoteric sexual practices' are sexual practices less common than kissing/stroking or oral, vaginal and anal sex. Practices included are: fisting (inserting the hand or forearm in the rectum); urolagnia (urine play or 'water sports'); use of sex toys; use of cock rings; engaging in bondage and discipline, sadomasochism or dominance and submission; and dressing up as part of fantasy.

[2] The difference between the means for those who did and those who did not report unprotected anal intercourse was statistically significant for both studies.

[3] For Health in Men, all *p* values are less than 0.001 (i.e. significant differences).

1.1.7 Percentage engaging in unprotected anal intercourse with casual partners, by serostatus

Table 1.1.7 shows, by serostatus, for the years 2001 to 2005, the number and percentage of men who had engaged in any unprotected anal intercourse with casual partners during the six months prior to the survey. (See Chapter 2 for details of HIV testing rates.) It confirms that HIV-positive men were more likely to have engaged in unprotected anal intercourse with casual partners than were HIV-negative men. Some unprotected anal intercourse reported by people living with HIV is with partners who are also HIV-antibody-positive (Rawstorne et al., 2005a). Note, however, that information from the Sydney Men and Sexual Health (SMASH) survey (Grulich et al., 1998) showed that even if HIV-positive men who engaged in unprotected anal intercourse only with other HIV-positive men were removed from the analysis, the remainder of the HIV-positive men reported more unprotected anal intercourse with casual partners than did HIV-negative men.

Table 1.1.7: Men engaging in any unprotected anal intercourse with casual partners, by serostatus[1] (based on the men who had casual partners)

	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Australia										
HIV Futures[2]										
Positive	725	29.1			834	34.4			–[3]	
Sydney										
Health in Men										
Negative	360	37.5	641	37.4	932	36.7	861	34.8	698	33.5
Positive Health										
Positive	151	52.3			214	59.3	195	49.7	204	64.2
Periodic										
Positive	375	61.3	337	59.9	275	58.9	325	55.7	381	54.1
Negative	1521	28.8	1521	29.3	1312	27.8	1469	27.8	1802	25.9
Gay Asian Men										
Positive			16	–[4]						
Negative			255	15.7						
Melbourne										
Positive Health										
Positive					38	39.5	39	51.3	26	53.8
Periodic										
Positive	115	49.6	122	57.4	158	57.0	125	47.2	127	50.4
Negative	909	23.0	972	24.6	1083	26.5	1050	23.8	932	27.7
Brisbane										
Periodic										
Positive	74	48.6	96	47.9	84	56.0	98	48.0	66	45.5
Negative	869	25.1	963	30.1	810	28.1	896	29.0	761	30.5
Perth										
Periodic										
Positive			18	33.3			29	58.6		
Negative			381	28.9			484	26.7		
Adelaide										
Periodic										
Positive	29	41.4			35	42.9			27	22.6
Negative	296	24.0			497	24.5			310	25.8
Canberra										
Periodic										
Positive					11	–[4]				
Negative					138	21.0				

[1] This table excludes men whose serostatus was unknown, either because they reported that they had not been tested or because they did not provide information regarding serostatus. The difference between HIV-positive and HIV-negative men in the percentage who reported unprotected anal intercourse with casual partners is statistically significant throughout.

[2] HIV Futures figures are an underestimate as they are based on all homosexually active participants and not just on those who had had casual male partners; such a reduced base could not be determined because of the way the questions were asked.

[3] Data not yet available.

[4] Number of men was too small to calculate a meaningful percentage.

For the years 2001 to 2005, the periodic surveys provided evidence of decreasing engagement in unprotected anal intercourse with casual partners among HIV-positive and HIV-negative men in Sydney ($p < 0.05$). The percentage for HIV-positive men in Perth should be treated with caution as it is based on a small number of men. There were no trends in the data in other samples.

1.1.8 Agreements among homosexually active men with regular partners regarding unprotected anal intercourse

Agreements with regular partners to have only protected anal intercourse (or no anal intercourse) both within the relationship and with casual partners outside the relationship are regarded as 'safe sex' agreements, regardless of the serostatus of the partners. Agreements with regular partners to have some unprotected anal intercourse within the relationship can be assessed for safety only if both partners have been tested and each knows the serostatus of the other. That is, unless the seroconcordance (or otherwise) of men in regular relationships can be assessed reliably by such men, any agreement to have unprotected anal intercourse within the relationship is not a safe sex agreement. Table 1.1.8 shows the percentage of men with regular partners, both in seroconcordant relationships and in relationships which were not known to be seroconcordant (termed 'nonconcordant'), who had agreements to engage only in 'safe' sex. An agreement to have unprotected anal intercourse was classified as a safe sex agreement only when partners (a) were seroconcordant (both either HIV-positive or HIV-negative), (b) had a clear spoken agreement regarding anal intercourse within the relationship and (c) had a clear spoken agreement that

Table 1.1.8: Men with regular partners who had 'safe sex' agreements, by seroconcordance

	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Sydney										
Health in Men										
Seroconcordant	215	72.1	428	69.4	616	70.3	585	74.7	505	75.6
Nonconcordant	90	18.9	176	20.5	206	19.9	187	24.6	140	29.3
Positive Health										
Seroconcordant					57	42.1	55	52.7		
Nonconcordant					113	27.4	68	36.8		
Periodic										
Seroconcordant	857	71.8	885	72.9	717	73.6	833	73.0	966	70.9
Nonconcordant	489	35.6	430	30.0	360	33.9	342	33.9	407	32.9
Gay Asian Men										
Seroconcordant			102	52.0						
Nonconcordant			94	21.3						
Melbourne										
Positive Health										
Seroconcordant							11	–		
Nonconcordant							10	–		
Periodic										
Seroconcordant	571	73.2	515	71.7	578	69.4	592	69.9	493	70.4
Nonconcordant	329	26.1	323	25.4	320	35.0	288	31.9	267	36.7
Brisbane										
Periodic										
Seroconcordant	432	72.5	514	63.6	426	73.0	479	67.8	384	68.5
Nonconcordant	256	26.2	247	30.4	225	31.6	261	28.0	189	41.3
Perth										
Periodic										
Seroconcordant			204	67.6			332	74.1		
Nonconcordant			136	25.0			158	31.0		
Adelaide										
Periodic										
Seroconcordant	183	61.2			237	68.8			194	79.9
Nonconcordant	92	26.1			122	26.2			102	27.5
Canberra										
Periodic										
Seroconcordant					78	75.6				
Nonconcordant					31	38.7				

there would be no unprotected anal intercourse with casual partners outside the relationship. Earlier research at NCHSR highlighted the importance of agreements in a series of published papers relating to 'negotiated safety' (Kippax et al., 1993; Kippax et al., 1997; Van de Ven et al., 1999; Crawford et al., 2001). Findings from this research show that a high proportion of men have agreements and stick to them (Prestage et al., 2005).

Only men with regular partners were included in Table 1.1.8. In this table, 'nonconcordant' refers to relationships with regular partners in which the HIV serostatus of both partners was known and was discordant, or the serostatus of one or both partners was stated as 'unknown'. In every study, very few respondents reported being in a serodiscordant relationship (that is, where one partner was known to be HIV-positive and the other HIV-negative), and this is why data from such respondents have been included in the nonconcordant category rather than being reported separately. Men with regular partners who did not respond to questions regarding their own or their partner's serostatus were excluded from the table.

The data are consistent across a number of studies in suggesting that around 70% of men in seroconcordant relationships have an agreement to have safe sex only (that is, to have no unprotected anal intercourse outside the seroconcordant relationship). Two exceptions are among HIV-positive men in the Positive Health study and the Gay Asian Men in Sydney study, where approximately 50% of those in seroconcordant relationships have safe sex agreements.

There is evidence from the various studies that this percentage is changing: significant increases over the five years are apparent among HIV-negative men in seroconcordant relationships in Sydney in the Health in Men cohort ($p < 0.05$), and in the Adelaide periodic survey ($p < 0.001$).

Among nonconcordant couples, around 25% to 35% in most samples had an agreement to have only safe sex (that is, no unprotected anal intercourse at all, either within the relationship or with casual partners). This indicator showed an upward trend for the period 2001 to 2005 in the Melbourne ($p < 0.01$) and Brisbane periodic survey data ($p < 0.05$) and in the Sydney Health in Men study ($p < 0.05$).

Of those without safe sex agreements, both seroconcordant and nonconcordant, some had agreements that allowed the possibility of unsafe sex, some had no agreements and some did not answer the relevant questions. Lack of a safe sex agreement does not necessarily imply unsafe practice.

1.1.9 Negotiated safety and unprotected anal intercourse with casual partners

Table 1.1.9 shows the proportion of HIV-negative men with a negotiated safety agreement who broke their agreement and engaged in unprotected anal intercourse with casual partners. Data are reported from the Sydney, Melbourne and Brisbane periodic surveys, which provided sufficient sample sizes for reliable calculations. Table 1.1.9 shows the number of men practising negotiated safety (*N*) and the percentage of these men who had engaged in any unprotected anal intercourse with casual partners in the six months before the survey. ('*N*' is the number of men in a seroconcordant HIV-negative regular relationship for at least six months who engaged in unprotected anal intercourse within the relationship and who had an agreement not to have unprotected anal intercourse with casual partners.)

In each city, small proportions of men engaged in unprotected anal intercourse with casual partners. The percentages in each of the cities varied slightly from year to year, and for Sydney showed a statistically significant downward trend ($p < 0.05$).

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1.2 Sexual behaviour among the general population

In the past few years, the information available on populations other than homosexually active men has been transformed by the publication of the main report of the Australian Study of Health and Relationships, a grant-funded study carried out jointly by the Australian Research Centre in Sex, Health and Society (La Trobe University), NCHSR, the National Centre in HIV Epidemiology and Clinical Research (University of New South Wales) and the Health Promotion Unit of Central Sydney Area Health

Table 1.1.9: Percentage of HIV-negative men who engaged in unprotected anal intercourse with casual partners, among those who had a negotiated safety agreement

Source	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Sydney										
Periodic	312	10.6	330	8.2	276	9.4	311	9.3	346	5.2
Melbourne										
Periodic	222	5.0	174	6.3	192	11.5	213	4.7	184	6.5
Brisbane										
Periodic	132	3.8	153	9.2	141	7.8	132	3.8	117	6.8

Service. The study surveyed 19 307 Australians aged 16 to 59 and is thus the largest representative sample survey on sexual health behaviour, attitudes and knowledge ever carried out in Australia and one of the larger national sex surveys around the world (A. Smith et al., 2003a).

Telephone interviews were carried out from mid-2001 to mid-2002 with 10 173 men and 9134 women in households (i.e. not in institutions such as hospitals, boarding houses or prisons), with an overall response rate of 73.1%. The response rate was higher in women than men, but men in central Sydney were oversampled to give a large enough sample size to enable accurate comparisons with targeted samples of homosexually active men. The sample was weighted to reflect the location, age and sex distribution of the 2001 Census, and is therefore regarded as being broadly representative of the Australian population. The full report is available from NCHSR and from the Australian Research Centre in Sex, Health and Society at www.latrobe.edu.au/arcshs. A book based on the survey and written for the general reader by two of the project team, Juliet Richters and Chris Rissel, is now also available. (See the NCHSR website under 'Publications' for an order form for *Doing it down under: The sexual lives of Australians*.)

Three-quarters of the total sample (74% of men and 77% of women) were in a regular heterosexual relationship. Of those, 83% (62% of the total) lived together. People had had sex an average of 1.8 times per week in the four weeks before interview; younger people and people with regular partners had had sex more often than older people and people who had only casual partners. Among people who had had a regular partner for the past 12 months or longer, 5% of men and 3% of women had had sex with someone else in the past year (Rissel et al., 2003b).

For men, the median age at first vaginal intercourse declined from 18 among men in their 50s to 16 for men aged under 20. For women, the decline in median age was from 19 to 16. Contraceptive use at first intercourse increased from less than 30% of men and women in the 1950s to over 90% around 2000 (Rissel et al., 2003a).

Men had had more opposite-sex partners in their lifetime (mean 16.5, median 6) than women (mean 6.8, median 3) and also in the past year (men: mean 1.5, median 1; women: mean 1.0, median 1). Of the total sample, 92% had had experience of vaginal intercourse; 6% of men and women had never had intercourse and 2% did not disclose whether or not they had. More than half of those without experience of intercourse were under 20. From these figures we can infer that at least 3% of people never have intercourse in their lifetimes. Only a minority of these people are gay men or lesbians who have not had intercourse with an opposite-sex partner.

In the most recent sexual encounter in the past year with an opposite-sex partner, 96% of men and 94% of women had engaged in vaginal intercourse. Although 21% of men and 15% of women had tried anal intercourse, less than 1% had done it at their last heterosexual encounter (de Visser et al., 2003a).

Less than 3% of men and women thought of themselves as anything other than heterosexual (i.e. gay, lesbian, bisexual or other). However, more people (9% of men and 15% of women) reported some same-sex attraction or experience. Of the men with any lifetime sexual experience with other men, 40% identified as either gay or bisexual. Of women with any lifetime sexual experience with other women, only 24% identified as either lesbian or bisexual (A. Smith et al., 2003b).

In the most recent sexual encounter between men, 90% had engaged in manual stimulation of the partner and 89% had been stimulated by the partner, 75% had received fellatio and 76% had given it, and 38% had had insertive anal intercourse and 30% had had receptive (N = 185 for these questions). In the most recent sexual encounter between women, 91% had manually stimulated their partner and 95% had been stimulated by the partner, 66% had received cunnilingus and 62% had given it (N = 123; Grulich et al., 2003a).

Although the majority of respondents had used a condom at some time in their lives, fewer than half of the respondents who were sexually active in the past year had used a condom. Rates of condom use for vaginal intercourse in the past six months were low, even with casual partners (Table 1.2.1). Among men who had had anal intercourse with men in the six months prior to the survey, rates were higher (Table 1.2.2) (de Visser et al., 2003b).

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Table 1.2.1: Frequency of condom use for vaginal intercourse in the previous six months, by partner type—Australian Study of Health and Relationships[1]

	Men (%)	Women (%)
Regular live-in partner	***N = 5636***	***N = 557***
Never	77.4	82.3
Sometimes	14.4	11.7
Always	8.2	6.0
Regular non-live-in partner	***N = 1209***	***N = 1219***
Never	48.6	49.9
Sometimes	22.9	33.5
Always	28.5	16.7
Casual partner(s)	***N = 601***	***N = 324***
Never	28.9	30.7
Sometimes	26.5	34.0
Always	44.6	35.4

[1] From Table 2, p. 226, de Visser et al. (2003b).

Table 1.2.2: Frequency of condom use for anal intercourse with men in the previous six months, by partner type—Australian Study of Health and Relationships[1]

	Men (%)[2]
Regular live-in partner	***N = 61***
Never	74.2
Sometimes	3.0
Always	22.8
Regular non-live-in partner	***N = 25***
Never	28.3
Sometimes	33.7
Always	38.0
Casual partner(s)	***N = 41***
Never	6.3
Sometimes	6.9
Always	86.8

[1] From Table 2, p. 226, de Visser et al. (2003b).

[2] Percentages do not correspond to whole persons because data have been weighted.

1.3 Sexual behaviour among first-year university students

A sample of 1251 students was surveyed at the University of New South Wales in 2002 and 2003 from a stall during the annual Orientation Week. Students completed a two-page questionnaire and placed it in a ballot box. It was not possible to estimate a response rate since students could easily avoid the stall. About 95% of the students recruited were full-time first-year students. The main results from these samples were published in the *Annual report of behaviour 2004* (Van de Ven et al., 2004) and in a brief report available from the NCHSR website (Richters et al., 2005a).

In the late 1980s and during the 1990s, data were also collected annually, using a similar questionnaire, among first-year students at Macquarie University. The survey was carried out in classrooms with approval from the faculty and the ethics committee. Good response rates were achieved (around 95%). About two-thirds of the students were female. Previous annual reports of behaviour have reported some main results and peer-reviewed journal papers have also been published from the study. A recent publication reveals that, over the 10 years between 1990 and 1999, there was a significant increase among female students in the practice of oral sex with both regular and casual partners, and in vaginal sex with regular partners. No significant changes were detected among male students in the same period (Grunseit et al., 2005).

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1.4 Women in contact with Sydney's gay and lesbian communities

Table 1.4 contains data from the biennial Sydney Women and Sexual Health (SWASH) surveys conducted by NCHSR, the National Centre in HIV Epidemiology and Clinical Research and the AIDS Council of NSW (ACON) in 2000, 2002 and 2004 (see also Richters et al., 2001, 2002, 2005b). Each year, most of the women (71% to 90%) were recruited at the Sydney Gay and Lesbian Mardi Gras Fair Day. Some respondents were also recruited through other groups, venues and clinics in contact with gay, bisexual and lesbian communities but, to allow for reliable comparisons over time, the data in the table are based only on the women recruited at Fair Day.

In 2004, ages of respondents ranged from 16 to 64 (median age 31) and 69% had post-school education. Asked how they thought of themselves, 69% identified as lesbian/dyke/homosexual/gay, 10% as bisexual and 16% as heterosexual; 5% chose the 'other' category or did not answer. Sexual identity was correlated with age: younger women were more likely to identify as bisexual and less likely to identify as lesbian. Four respondents were transgender/trannies. Most respondents (403, 83%) had had sex with a woman; 327 women (67%) had done so in the previous six months. Nearly a quarter of the women (111; 23%) had had sex with a man they considered to be gay or bisexual; 23 women (5%) had done so in the previous six months. Eight of the lesbians and eight of the bisexual women said they had had sex with a gay or bisexual man in the previous six months, as had four of the heterosexual women. Six women (1%) had had unprotected vaginal or anal intercourse with a gay or bisexual male partner (regular or casual) in the previous six months. Thirteen women (3%) had done sex work in the previous six months.

Of the 310 women who had had oral sex with a woman in the previous six months, only 9% had used a dental dam and most of them had done so only once. Use of gloves (13% of women who had had sex with a woman) and condoms (18%) was more common and they were used more frequently. Only a minority of women had received oral sex during menstruation or given oral sex to a woman who was menstruating, but it was far more common to do so with a tampon in place than to use a dental dam.

Further analysis of the sexual behaviour and other health issues of the non-heterosexual women in the 2004 SWASH survey is available in Richters et al. (2005b).

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Table 1.4: Women surveyed at Sydney Gay and Lesbian Mardi Gras Fair Day[1]

	2000 (*N* = 883)		2002 (*N* = 505)		2004 (*N* = 485)	
	n	%	*n*	%	*n*	%
Sexual identity						
Lesbian	611	69.2	360	71.3	334	68.9
Bisexual	80	9.1	78	7.5	48	9.9
Heterosexual	177	20.0	36	15.0	78	16.1
Other/Missing	15	1.7	31	6.1	25	5.1
Had sex with a woman in the previous six months[2]	561	63.5	341	67.5	327	67.4
Lesbian	522	59.1	306	60.6	284	58.6
Bisexual	32	3.6	20	4	30	6.2
Heterosexual	2	0.2	4	0.8	0	0.0
Other/Missing	5	0.6	17	3.4	13	2.7
Had sex with a man in the previous six months[2]	192	21.7	92	18.2	112	23.1
Lesbian	15	1.7	10	2.0	18	3.7
Bisexual	42	4.8	20	4.0	30	6.2
Heterosexual	129	14.6	51	10.1	53	10.9
Other/Missing	6	0.7	11	2.2	11	2.3
Had sex with a gay or bisexual man in the previous six months[2]	21	2.4	16	1.8	23	4.7
Lesbian	2		4		8	
Bisexual	12		6		8	
Heterosexual	5		6		4	
Other/Missing	2		0		3	
Had unprotected vaginal or anal intercourse with a gay or bisexual man in the previous six months	17	1.9	10	2.0	6	1.2
Had done sex work in the previous six months	16	1.8	10	2.0	13	2.7

[1] Sample size varies slightly for different questions; some participants did not respond to certain items.

[2] Percentages given for each sexual identity category are percentages of the total sample, so they add up to the percentage of women who (for example) had sex with a woman, i.e. in 2000, 522 women, 59.1% of the total sample, both identified as lesbian and had sex with a woman. As there were 611 lesbians, 85.4% of lesbians had sex with a woman in the previous six months.

2 Other sexual health issues

2.1 Testing for HIV among gay men and other homosexually active men

2.1.1 Men who have ever been tested for HIV

Table 2.1.1 shows that over 80% in most samples of homosexually active men who were socially attached to gay community had ever been tested for HIV. From 2001 to 2005, values for this indicator were fairly steady for most of the data sets, with some variation in the Sydney and Melbourne periodic surveys. Testing rates were lower in Perth in 2004 and in the Asian Gay Community Periodic Survey (Gay Asian Men) in Sydney, perhaps reflecting the lower rates in non-gay-community-attached men (as shown in Male Call and Male Out in earlier years). No new participants were recruited into Health in Men in 2005.

Key data from Table 2.1.1 are presented graphically in Figure 5. Again, where available, relevant data from surveys conducted since 1996 are also included. For the purposes of comparison with the periodic surveys, only data for gay-community-attached men are presented from the Male Call and Male Out surveys. (Note that for legibility the *y*-axis has been drawn from 50% to 100% rather than from 0% to 100%.)

Table 2.1.1: Percentage of men who had ever been tested for HIV

	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Sydney										
Health in Men	450	94.4	453	94.5	430	95.8	94	90.4		
Periodic[1]	2862	89.7	2884	87.3	2541	88.7	2821	88.7	3413	82.1
Gay Asian Men			457	75.7						
Melbourne										
Periodic[1]	1830	84.2	1877	80.7	2064	86.7	1962	86.7	1804	86.1
Brisbane										
Periodic	1571	82.5	1787	83.0	1511	83.3	1667	82.1	1382	80.6
Perth										
Periodic			790	80.6			1014	76.7		
Adelaide										
Periodic	565	83.2			834	87.2			629	81.7
Canberra										
Periodic					255	85.1				

[1] Significant differences over the five years, $p < 0.001$.

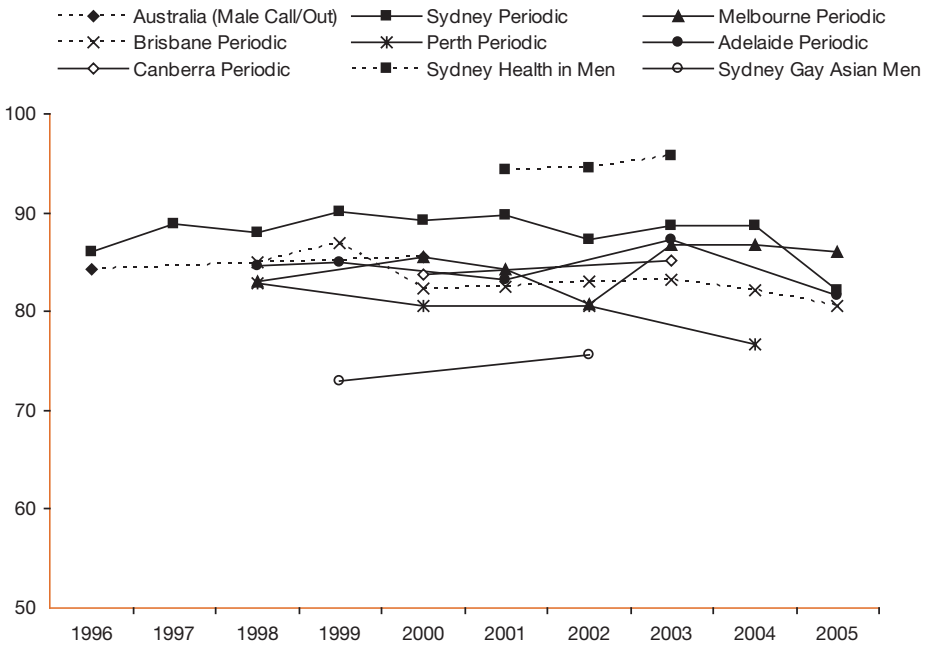

Figure 5: Percentage of men who had ever been tested for HIV

2.1.2 Recent testing for HIV

Some homosexually active men have responded to the HIV/AIDS epidemic by monitoring their own HIV antibody status by undertaking a series of HIV antibody tests. Table 2.1.2 gives information from a number of studies regarding recent testing for HIV. The question asked was, 'How long is it since you had a test for HIV?', and the percentages were derived by counting those whose responses indicated that they had been tested within the six months before the respective surveys. Around 40% to 50% of the men reported having had an HIV antibody test in the six months preceding the survey. Both the Sydney and Melbourne periodic surveys indicated an increase in recent HIV testing.

Table 2.1.2: HIV-negative men tested for HIV within the six months prior to the survey

	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Sydney										
Health in Men[1]	425	59.3	428	51.6	412	51.5	85	50.6		
Periodic[2]	2095	44.4	2144	50.3	1911	50.1	2116	54.2	2583	53.3
Gay Asian Men			330	39.4						
Melbourne										
Periodic[3]	1373	40.3	1412	39.4	1565	42.1	1513	46.9	1369	43.2
Brisbane										
Periodic	1218	51.0	1381	50.5	1172	48.9	1271	48.8	1053	52.3
Perth										
Periodic			596	42.8			780	41.2		
Adelaide										
Periodic	431	45.5			683	49.6			484	48.8
Canberra										
Periodic					202	39.6				

[1] Based on new participants in Health in Men, as annual HIV testing is a criterion for participation in the cohort.

[2] Significant increase over the five years, $p < 0.001$.

[3] Significant increase over the five years, $p < 0.01$.

2.1.3 HIV testing among younger men

The data in Table 2.1.3 show that around 65% to 75% of men under the age of 25 who were sampled had ever been tested for HIV. There were no significant trends in any of the studies, suggesting that rates of testing among men in this age group have been steady for a number of years.

Key data from Table 2.1.3 are presented graphically in Figure 6. Where available, relevant data from surveys conducted since 1996 are also included. For the purposes of comparison with the gay community periodic surveys, only data for gay-community-attached men are presented from the Male Call and Male Out surveys. (Note that for legibility the *y*-axis has been drawn from 40% to 100% rather than 0% to 100%.) Figure 6 shows the significant downturn in testing rates across a number of studies that occurred prior to 2000.

2.1.4 Incidence of HIV in the Health in Men cohort

Table 2.1.4 shows the number of men recruited into the Health in Men study from 2001 to 2004, as well as the proportion who participated in subsequent interviews. No new participants were recruited in 2005. Also presented in the table is the number of men who had been confirmed HIV-positive before each follow-up interview and the corresponding incidence rates. Incidence per 100 person-years ranged from 0.52 to 2.47. The last figure should be treated with caution as it is based on a small sample.

Table 2.1.3: Men under the age of 25 ever tested for HIV

	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Sydney										
Health in Men[1]	46	76.1	53	77.4	37	78.4	18	72.2		
Periodic	281	73.3	291	71.5	254	73.2	295	74.2	287	67.2
Gay Asian Men			62	62.9						
Melbourne										
Periodic	266	66.2	307	60.3	296	72.6	342	75.4	293	64.8
Brisbane										
Periodic	439	69.7	409	70.4	396	68.2	434	67.1	374	69.8
Perth										
Periodic			175	64.0			218	60.1		
Adelaide										
Periodic	115	70.4			157	73.9			149	66.4
Canberra										
Periodic					22	77.3				

[1] Based on new participants in Health in Men, as annual HIV testing is a criterion for participation in the cohort. There were no new recruits in 2005.

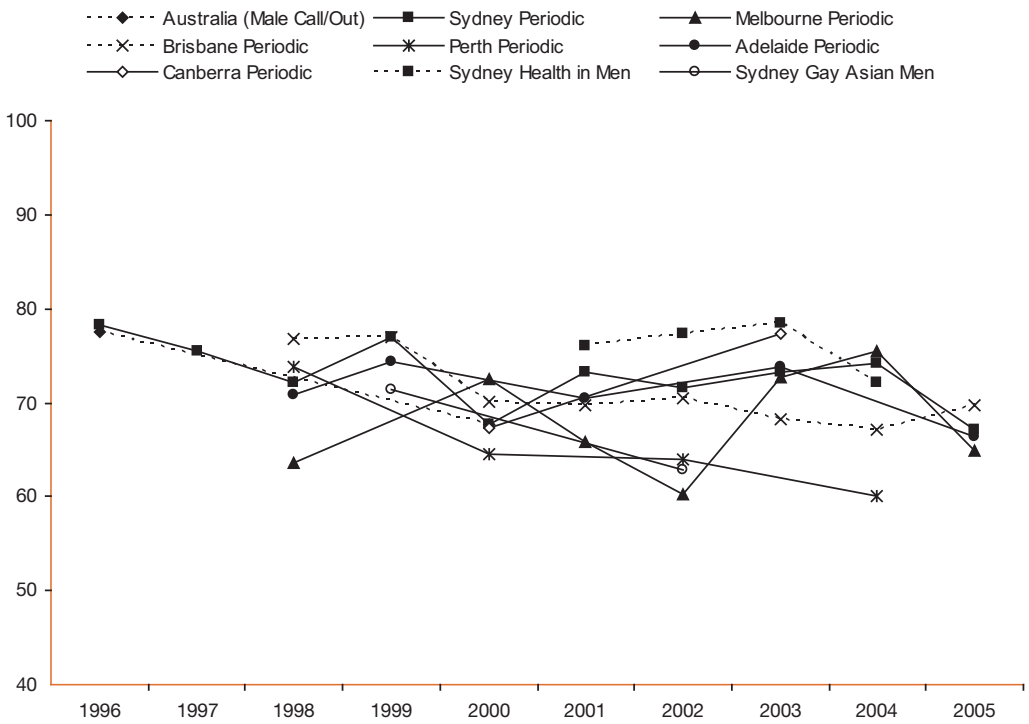

Figure 6: Percentage of men under the age of 25 ever tested for HIV

Table 2.1.4: HIV seroconversion in the Health in Men cohort

	Intake 2001	Intake 2002	Intake 2003	Intake 2004
Number recruited	450	453	430	94
Number who completed the first annual follow-up interview	395	390	356	72
Number of confirmed HIV seroconverters at the first annual follow-up	4	7	4	2
Incidence rate (per 100 PY[1]) at the first annual follow-up	0.90	1.67	1.03	2.47
Number who completed the second follow-up interview	362	329	316	
Number of confirmed HIV seroconverters at the second annual follow-up	4	2	2	
Incidence rate (per 100 PY) at the second annual follow-up	1.10	0.52	0.56	
Number who completed the third follow-up interview	327	280		
Number of confirmed HIV seroconverters at the third annual follow-up	5	4		
Incidence rate (per 100 PY) at the third annual follow-up	1.41	1.22		
Number who completed the fourth follow-up interview	266			
Number of confirmed HIV seroconverters at the fourth annual follow-up	3			
Incidence rate (per 100 PY) at the fourth annual follow-up	1.01			

[1] PY = person-years

2.1.5 Factors associated with HIV seroconversion

The Risk Factors for HIV Infection study (also called the Seroconversion study), which began in 1993, documents understandings of HIV transmission risk given in accounts by gay men of the event or events that they believe led to their becoming infected with HIV. The ongoing nature of this study allows for understanding of changes in perceptions of risk over time and of the changing contexts and factors that influence HIV infection, such as new treatment and testing technologies and new sexual and social spaces such as the internet.

Men who have recently seroconverted are interviewed within 12 months of a documented infection. Sixty-five men were interviewed before the introduction of combined antiretroviral treatment in late 1996, and 63 men were interviewed

between 1997 and the end of 2004. In 2005, eight men were interviewed, bringing the total number of participants in the study to 136. The majority of participants identified as gay, came from Anglo-Celtic backgrounds, worked in middle-class professions and were tertiary educated. The age range of participants was 19 to 65 years, with the majority in their 30s. The majority of participants were recruited through Sydney clinics with high HIV caseloads.

The participants are not statistically representative of recent seroconverters but their accounts of seroconversion do nonetheless cover the range of experiences of gay-identified men who live in inner Sydney. These narratives offer insights into both individual and collective histories, meanings and practices and provide valuable insights into the sexual cultures of both HIV-negative and HIV-positive gay men in Sydney. The study enables explorations of men's perceptions of risk and the meanings they attach to different sexual practices, relationships and contexts.

The presumed mode of transmission offered by respondents early in their interview was not always the same as the conclusion reached by the end of the interview (as presented in Tables 2.1.5 to 2.1.7) or indeed the same as the conclusion drawn by the researchers on review of the transcripts. The interviews became a joint process of reconstruction of 'what probably happened' as well as offering reflections on their lives in the months before they seroconverted. In some cases those who attributed their seroconversion to low-risk activities such as oral sex did so because they could not identify any higher-risk sexual practices during the appropriate time frame.

Until the end of 1996 just over half of the HIV transmission events were believed by the men in the study to have occurred within their regular relationships, some of which they knew to be serodiscordant for HIV. In the interviews since 1997 many infections were still attributed to regular relationships but it appeared that infection was now more frequently being attributed to casual sex. There is currently no epidemiological data available in Australia on the proportion of infections that occur in the context of regular and casual relationships.

Analysis of the interviews suggests that sexual encounters are framed by a number of factors including location, length of relationship, familiarity with the casual partner, incorrect assumptions about serostatus, intimacy, sexual attraction and romance (Kippax et al., 2003). In some cases, prior contact with a casual partner facilitated a degree of trust and intimacy that influenced decisions about unprotected anal sex during the incident(s) purported to have resulted in HIV infection (Ellard et al., 2004).

Some of the men interviewed in recent years applied a crude form of negotiated safety or 'serosorting' with casual partners (see Mao et al., 2006), in which the decision to have unprotected intercourse was in part mediated by the disclosure of both sexual partners' HIV-negative status before anal intercourse. Willingness to rely on these disclosures was sometimes influenced by prior contact or the men's familiarity with each other. This suggests that the distinction between casual and regular partners is at times blurred (Ellard et al., 2004; Prestage et al., 2001). Some of the men who attributed their infection to a casual partner cited a recently ended regular relationship

Table 2.1.5: Type of sexual relationship at time of HIV infection—Seroconversion study

	Pre-ART[1] (1993–1996)	ART era (1997–2004)	ART era (2005)
Regular relationship in which neither the participant nor his partner had casual sex	21[2]	5	1
Regular relationship in which the participant and his partner had casual sex	13	25	1
Regular relationship in which the participant had casual sex	4	4	2[3]
Participant had two regular sex partners	1	2[4]	0
Total regular partners	39	36	4
Casual sexual partners only	26	27	4
Total	**65**	**63**	**8**

[1] ART = combined antiretroviral therapy

[2] Includes three participants who each engaged in sex with his regular partner in a threesome.

[3] One of these men was in a regular relationship with a couple.

[4] One of these men was in a regular relationship with a woman.

Table 2.1.6: Assumed HIV status of partner at presumed event of HIV transmission—Seroconverstion study

Assumed HIV status	Pre-ART[1] 1993–1996		ART era 1997–2004		ART era 2005	
	Regular	Casual[2]	Regular	Casual[2]	Regular	Casual[2]
Positive	13	4	10	3	1	1
Negative	14	3	5	10		4
Unknown	7	24	0	35		2
Total	**34**	**31**	**15**	**48**	**1**	**7**

[1] ART = combined antiretroviral therapy

[2] 'Casual' includes participants in open regular relationships who believed they had contracted HIV from a casual partner.

as part of the context of their infection. After the end of a relationship, a man may have sought new and diverse sexual partners and experiences after a long period of relative sexual stability with a regular partner. He may also have desired sexual validation in response to feelings of rejection and unhappiness. At the same time he may have become unaccustomed to using and negotiating the use of condoms after an extended period with a regular HIV-negative partner with whom condoms were not used.

The accounts of men who believed they had become infected within their regular relationships were commonly couched in terms of love and intimacy, or the event was attributed to a breakdown in communication or trust. In many of these cases the HIV transmission occurred in the early months of the relationship, when the feelings of love and trust were not always matched by open communication and negotiation.

Analysis of the interviews since the introduction of combined antiretroviral therapy in 1996 suggests a complex relationship between treatments, viral load and risk-taking (see also Van de Ven et al., 2005). It is common for participants who had been in a serodiscordant relationship to regard therapy as having greatly improved the health outcomes of people with HIV. Therapy also reduced worry about mortality but did not appear in most cases to have influenced sexual risk-taking within relationships. While some of the men who attributed their seroconversion to a known HIV-positive regular partner acknowledged the potential of therapy to reduce viral load, very few explicitly used viral load as a risk-reduction strategy (Murphy et al., 2003). This study will continue to investigate the benefits and complexities of new clinical technologies and their impact on sexual risk behaviour.

The majority of men interviewed since 1993 have attributed their infection to unprotected anal intercourse but, over the years of the study, a small number of men have attributed their seroconversion to lower-risk activities such as oral sex, 'nudging' (brief anal insertion of the penis without a condom) or semen on an open wound.

Recent analysis of the interviews has focused on the various ways that participants think and act in relation to risk. It found a range of discourses about risk including ones related to the fields of public health and HIV prevention education (Kippax et al., 2003; Slavin et al., 2004). The majority of men in recent years had little or no detailed knowledge of treatments and testing technologies prior to seroconversion (Murphy et al., 2003; Ellard et al., 2004). Further, some men had little knowledge of the relatively high prevalence of HIV among gay men in Sydney and in some cases made assumptions that sexual partners were more likely to be HIV-negative than HIV-positive.

As in previous years, many of the men had used drugs at the event(s) at which they became infected. Yet it was rare for drugs and alcohol to be represented as having had a significant influence on sexual risk behaviour.

For further information:

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Table 2.1.7: Sexual practice purported to have led to HIV infection, by type of partner—Seroconversion study

Sexual practice	Type of relationship			Total
	Regular only	Regular plus casual	Casual only	
Pre-ART[1] (1993–1996)				
Anal receptive	16	1 [2]	17	34
Anal insertive	8	1	2	11
Anal receptive and insertive	6	2	4	12
Other[3]	4	1	3	8
Total	**34**	**5**	**26**	**65**
Post-ART (1997–2004)				
Anal receptive	4	11	17	32
Anal insertive	4	1	2	7
Anal receptive and insertive	3	3	3	9
Other[3]	4	6 [2]	5	15
Total	**15**	**21**	**27**	**63**
Post-ART (2005)				
Anal receptive			1	1
Anal insertive			1	1
Anal receptive and insertive		2	1	3
Other[3]	1	1	1	3
Total	**1**	**3**	**4**	**8**

[1] ART = antiretroviral therapy

[2] Three of these seven men had an HIV-positive regular partner but attributed the source of infection elsewhere.

[3] These men believed they had become infected via oral–genital sex (18 men); sharing a needle (1); esoteric sexual practice involving sadomasochism (2), blood contact with skin lesions (4), and fisting (1).

2.1.6 Risk factors for seroconversion in the Health in Men cohort

The Health in Men cohort of HIV-negative gay men in Sydney provides an opportunity to examine risk factors for seroconversion. By the end of June 2005, 1427 men had been interviewed, some as many as eight times. Of these, 38 had seroconverted and information regarding factors associated with seroconversion was available for 36 of these men. The remaining two men had dropped out of the cohort more than a year before seroconversion.

An analysis of risk factors for seroconversion confirmed the risks associated with unprotected receptive anal intercourse, the presence of other sexually transmissible infections, and being in a serodiscordant relationship.

A further examination of contexts for seroconversion found that high levels of recreational drug usage, using sildenafil (Viagra and similar drugs), finding sex partners in sex clubs and saunas and on the internet, and engaging in esoteric sex practices were also risk factors for seroconversion. These findings show that factors previously identified as representing engagement with a subculture of 'sexual adventurism' constitute a context in which seroconversion is particularly likely.

Nevertheless, these context factors associated with sexual adventurism do not account for all or even a majority of the seroconverters. For example, only a third of the seroconverters from the Health in Men cohort used recreational drugs as often as once a week or more. Although risk is high among 'adventurous' men, these men are only a small proportion of those in the cohort.

It is not possible from the Health in Men cohort to ascertain whether seroconversion took place as a result of sex with a regular or a casual partner. Nevertheless, a fifth of the seroconverters (seven out of 36) appear to have acquired HIV as a result of being in a relationship with an HIV-positive regular partner. A further 26 were in a regular relationship with a partner of either HIV-negative or unknown serostatus. Around 70% of risk acts were with regular partners (Crawford et al., 2006).

For further information:

Health in Men
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2.2 Contact with the HIV epidemic

There is little quantitative information available regarding the impact on behaviour of the changing nature of the HIV/AIDS epidemic. Two indicators of the degree of contact with the HIV epidemic that may be important in monitoring change are 'knowing people with HIV' and 'ever knowing anyone who died as a result of AIDS'. These indicators were included in the Health in Men and Positive Health cohort studies and the periodic surveys in some state capital cities. In Table 2.2, data on these indicators are presented separately for HIV-negative and HIV-positive men.

A large proportion of HIV-positive men in most regions knew someone with HIV, around 90% of participants or more, except among HIV-positive gay Asian men, for whom the figure was closer to 80%. Fewer HIV-negative men knew someone with HIV, around 50% to 60% in most of the studies, except in the Health in Men study in which around 85% in each of the previous four years knew someone with HIV. There were no trends over time in the data.

A higher proportion of HIV-positive men than HIV-negative men had known someone who had died as a result of AIDS. There were proportionally fewer of these men over time in the Health in Men study.

Data from the Positive Health cohort study show that whether or not people with HIV/AIDS felt engaged with an HIV-positive community depended on whether they were diagnosed before or after the advent of antiretroviral treatment in 1996 (Rawstorne et al., 2005b). Those diagnosed before the advent of antiretroviral treatment were more likely to feel engaged with the community than their more recently diagnosed counterparts. A significant proportion of those diagnosed since 1996 appeared to have become involved in HIV-positive community once they became ill, particularly if the illness was HIV related.

2.3 Post-exposure prophylaxis (PEP)

Data on non-occupational post-exposure prophylaxis (PEP) were first collected in the Sydney and Melbourne periodic surveys in 2001 and since then have been collected in other cities. In the short period since PEP has been available in New South Wales and become available in many other states, there has been a significant increase in awareness of its availability (see Table 2.3, page 28). Awareness of PEP shows strong regional variation. Gay-community-attached men in Sydney are significantly more aware of the availability of PEP than their counterparts in Melbourne, Brisbane, Canberra and Perth. Relatively few people have received PEP to date. Awareness of another person's having received PEP was higher in Sydney than in Melbourne, though no new data were collected on this subject in 2004.

2.4 HIV testing in other groups

HIV testing rates in groups other than gay men are lower, but about two in five adult Australians have been tested. In the Australian Study of Health and Relationships, 40.7% of men aged 16 to 59 had been tested, as had 38.9% of women. Testing rates were higher among gay men, lesbians and bisexuals than among heterosexuals (see Table 2.4.1, page 28), and were lower in the youngest (under 20) and oldest (50 and over) age groups. Of those tested, around 0.3% of men and women were HIV-antibody-positive (Grulich et al., 2003b).

The findings of the convenience-sample Sydney Women and Sexual Health study reflect those of the national representative survey. As shown in Table 2.4.2, page 28, around 55% of the women reported having been tested and a few in each survey reported being HIV-positive.

2.5 Other sexually transmissible infections among homosexually active men

2.5.1 Testing for sexually transmissible infections among homosexually active men

Table 2.5.1, page 29, presents data from the periodic surveys and Positive Health studies of gay respondents, showing the proportion of men who reported having various specimens taken for testing for sexually transmissible infections (STIs). Over three years of data collection, a significant increase in testing rates is apparent. The most commonly reported tests are those on urine and blood samples.

2.5.2 Sexually adventurous men and sexually transmissible infections

Within gay communities, 'sexually adventurous' men who engage in esoteric sexual practices, such as fisting and BDSM (bondage and discipline or sadomasochism) or dominance and submission practices, and who value sexual intensity and transgression, may be at higher risk of STIs and HIV transmission but may not be effectively addressed in education campaigns (Kippax et al., 1998; G. Smith et al., 2004).

Following recent rises in syphilis and other STIs among Sydney gay men, a recent report published by NCHSR explored how sexually adventurous men perceived, experienced and managed STIs (Holt et al., 2004). STIs

Table 2.2: Indicators of contact with the HIV epidemic

Source	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Knows anyone with HIV										
Sydney										
Gay Asian Men										
HIV-negative men			330	52.1						
HIV-positive men			16	81.3						
Health in Men										
HIV-negative men	450	83.6	823	84.9	1179	85.1	1103	85.0	942	86.9
Positive Health										
HIV-positive men	277	97.4			241	95.9	271	96.7	286	99.0
Melbourne										
Positive Health										
HIV-positive men	92	94.6			69	97.1	53	96.2	41	97.6
Perth										
Periodic										
HIV-negative men			590	68.1						
HIV-positive men			26	96.2						
Adelaide										
Periodic										
HIV-negative men	423	69.5			668	65.4				
HIV-positive men	34	100			44	95.5				
Ever knew anyone who died as a result of AIDS										
Sydney										
Gay Asian Men										
HIV-negative men			330	18.5						
HIV-positive men			16	50.0						
Health in Men[1]										
HIV-negative men	450	67.6	453	58.1	430	57.2	94	47.9		
Positive Health										
HIV-positive men	277	50.9[2]			323	37.8[2]	279	39.4[2]	286	29.0[2]
Melbourne										
Positive Health										
HIV-positive men	92	58.7[2]			84	39.3[2]	55	38.2[2]	41	31.7[2]
Adelaide										
Periodic										
HIV-negative men	426	55.4			668	47.2				
HIV-positive men	34	91.2			44	84.1				

[1] Based on new participants in Health in Men only. There were no new recruits in 2005.

[2] Not comparable with other data, as this figure is based on having known 'in the last 12 months' anyone who died as a result of AIDS, rather than 'ever' having known anyone.

other than HIV were largely seen as an inevitable or acceptable risk of sexual activity and were not considered sufficiently serious for men to change their sexual practices. The apparent acceptance of STIs, or perception that they were insignificant, was explained by the men's belief that most STIs were curable or treatable and that STIs were ubiquitous and difficult to avoid (particularly within some forms of adventurous sexual practice). HIV continued to be the primary concern in these gay men's sexual health priorities.

However, when discussing conventions around the management of STIs, a more complex picture emerged. Participants suggested that individuals were expected to seek treatment promptly once diagnosed with an STI, to abstain from sex while undergoing treatment and to protect partners from the transmission of any further such infections. These expectations were underpinned by a strong sense of individual responsibility not to pass on STIs, but were undermined by the recognition that it was often difficult to detect or recognise such infections.

Table 2.3: Awareness and use of non-occupational post-exposure prophylaxis (PEP)[1]

	2001		2002		2003		2004	
	N	%	*N*	%	*N*	%	*N*	%
Know that PEP is readily available now								
Sydney								
Periodic	2760	39.0	2670	55.2	651	65.7	2699	65.6
Melbourne								
Periodic	1651	19.2	1767	26.8	1916	44.8	1803	52.7
Brisbane								
Periodic			1606	23.8	1439	37.0	1611	45.6
Perth								
Periodic			735	18.5			911	26.0
Canberra								
Periodic					239	57.3		
Received PEP[2]								
Sydney								
Periodic	2721	2.9	2634	3.3				
Health in Men	450	6.4	453	5.3	430	8.4	94	4.3
Melbourne								
Periodic	1683	2.0	1727	2.1	1934	2.7		
Know anyone who has received PEP								
Sydney								
Periodic	2710	10.6	2594	14.6				
Melbourne								
Periodic	1652	6.7	1716	6.9	1906	11.0		
Adelaide								
Periodic	525	17.0						

[1] Questions about PEP were not asked in the periodic surveys in 2005. There were no new recruits to Health in Men in 2005.

[2] With the exception of periodic survey results from 2002 onwards, which report the use of PEP in the six months prior to the survey, all other percentages are based on whether participants had ever received PEP.

Table 2.4.1: HIV testing among people aged 16 to 59, by sexual identity—Australian Study of Health and Relationships[1]

Sexual identity	Men (%) (*N* = 9589)	Women (%) (*N* = 9364)
Heterosexual	40.4	39.4
Bisexual	71.0	60.3
Homosexual	76.7	52.0

[1] From Table 6, p. 239 in Grulich et al. (2003b).

Table 2.4.2: HIV testing among women surveyed at Sydney Gay and Lesbian Mardi Gras Fair Day

	2000 (*N* = 883)		2002 (*N* = 505)		2004 (*N* = 485)	
	n	%	*n*	%	*n*	%
Tested for HIV	487	55.2	292	57.8	269	55.5
HIV-positive[1]	2	0.41	3	1.03	1	0.37

[1] Percentage of those who tested HIV-positive is calculated as a proportion of those tested.

Table 2.5.1: Testing for sexually transmissible infections in the previous 12 months

Source	2003		2004		2005	
	N[1]	%	*N*[1]	%	*N*[1]	%
Sydney						
Periodic						
Anal swab	2541	25.7	2821	31.9	3413	35.3
Throat swab	2541	34.3	2821	38.7	3413	40.6
Penile swab	2541	26.3	2821	30.7	3413	31.0
Urine sample	2541	42.0	2821	46.2	3413	46.8
Blood test	2541	56.3	2821	54.3	3413	54.7
Positive Health						
Anal swab	319	25.7			286	38.5
Throat swab	319	35.1			286	44.8
Penile swab	319	23.8			286	29.7
Urine sample	319	37.3			286	45.5
Melbourne						
Periodic						
Anal swab	2064	23.5	1962	25.1	1804	30.5
Throat swab	2064	27.8	1962	31.1	1804	36.3
Penile swab	2064	23.0	1962	26.2	1804	30.3
Urine sample	2064	35.2	1962	40.3	1804	44.3
Blood test	2064	51.1	1962	53.0	1804	50.6
Positive Health						
Anal swab	62	25.8			41	41.5
Throat swab	62	30.6			41	51.2
Penile swab	62	19.4			41	22.0
Urine sample	62	41.9			41	53.7
Brisbane						
Periodic						
Anal swab	1511	16.1	1667	18.8	1382	23.1
Throat swab	1511	23.4	1667	27.4	1382	32.1
Penile swab	1511	20.3	1667	23.0	1382	25.8
Urine sample	1511	36.6	1667	42.7	1382	46.8
Blood test	1511	53.4	1667	56.0	1382	55.4
Perth						
Periodic						
Anal swab			705	23.4		
Throat swab			727	30.3		
Penile swab						
Urine sample			798	48.5		
Adelaide						
Periodic						
Anal swab	834	33.9			629	32.4
Throat swab	834	38.8			629	36.1
Penile swab	834	29.4			629	30.5
Urine sample	834	48.3			629	44.7
Canberra						
Periodic						
Anal swab	238	23.5				
Throat swab	238	29.0				
Penile swab	238	20.0				
Urine sample	238	41.6				

[1] Because many survey respondents checked these boxed items only when the answer was 'yes', in this table the 'N' given is the total number surveyed, not the number who answered the specific question. The percentages given are thus slight underestimates.

without regular testing. The men's accounts also suggested that regular partners were regarded as more deserving of protection from STIs than casual partners, implying that conventions around protecting others from STIs in casual sexual environments may not be as robust as they are within the context of regular relationships.

Participants discussed a range of strategies they used to reduce the risk of, or manage exposure to, STIs, some of which appeared more plausible than others (Donovan, 2000a, 2000b). Some men employed evaluations of their sex partners' appearance (such as looking 'clean') to assess whether or not they were likely to have an STI, or tried to avoid sex venues they regarded as 'dirty'. Some men reported washing themselves (particularly their genitals) between episodes with different sex partners if they were attending a sauna. Many participants still used condoms as their primary way of preventing HIV and STIs, but reported difficulties in using condoms and were aware that STIs could not be completely avoided with condom use. Regular testing was therefore seen as a necessary and useful activity to detect STIs.

These findings suggest that STIs are regarded quite differently from HIV, and that the understandable priority given to HIV by gay (and particularly adventurous) men may sometimes undermine efforts to prevent STIs. Conventions about the ways in which STIs should be managed by gay men emphasise individual responsibility, which does not necessarily assist in generating greater awareness of them or providing more effective ways for the risk of STIs to be managed at a social or interpersonal level. Some of the management strategies used to avoid STIs as described by adventurous men, such as assessing the visual appearance of partners, may need to be challenged, while others may need reinforcement and encouragement, e.g. the use of condoms, washing and testing.

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2.5.3 Gonorrhoea and chlamydia in the Health in Men cohort

From January 2003 nucleic acid amplification testing for gonorrhoea and chlamydia was incorporated into the STI testing protocol for the Health in Men cohort. Urine samples, throat swabs and rectal swabs were collected from each consenting participant. Around 1000 participants underwent these tests each year. As shown in Table 2.5.3, around 7% of participants tested positive each year to pharyngeal (throat) gonorrhoea and a smaller percentage to penile and anal gonorrhoea.

Around 2% to 4% of participants tested positive to anal chlamydia, and the prevalence of both penile and pharyngeal chlamydia was around 1% in each year (see Table 2.5.3).

2.5.4 Syphilis in the Health in Men cohort

In the Health in Men cohort the percentage of participants who tested positive to syphilis was highest among men in the initial intake in 2001 (5%) and has since stabilised at around 2% among men recruited in subsequent years (see Table 2.5.4). There were no new recruits in 2005.

2.5.5 Prevalence and incidence of hepatitis A and B in the Health in Men cohort

Table 2.5.5 shows that the proportion of participants in the Health in Men cohort who were seropositive for hepatitis A when tested at baseline interviews remained stable at around 70% for participants recruited from 2001 to 2004. Among participants who tested negative to the hepatitis A virus at baseline and who underwent hepatitis A testing again at the time of their first-round follow-up interview, around 25% to 35% (depending on the year of intake) had seroconverted to hepatitis A, most likely as a result of vaccination. There were no significant trends.

The percentage of participants who had serological evidence of prior or current hepatitis B virus infection was around 20% over the four years from 2000 to 2004. There is no evidence of a trend in the data. The percentage of participants with serological evidence of hepatitis B vaccination remained stable from 2000 to 2003 at slightly over 50%. Although in 2004 the rate was lower, at 45%, this figure should be treated with caution as it is based on a relatively small number of men.

Among participants who tested negative to hepatitis B at baseline interview, 29% of the 2001 intake of participants were found to have serological evidence of hepatitis B vaccination at the time of annual follow-up. This dropped to 24% among the 2003 intake, but this apparent trend was nonetheless non-significant.

For further information:

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2.6 Other sexually transmissible infections among other groups

2.6.1 Sexually transmissible infections among the general population

In the Australian Study of Health and Relationships, respondents (all aged 16 to 59) were asked whether they had ever had a range of STIs and blood-borne viruses. Results are shown in Table 2.6.1. Excluding candidiasis and hepatitis C infection, 20.2% of men and 16.9% of women reported ever having had an STI. Reported rates were higher among older people, English-speaking people, homosexual men, bisexual women, those who had paid or been paid for sex, those who had injected drugs, and those who had higher numbers of sexual partners.

2.6.2 Sexually transmissible infections among women in contact with the gay and lesbian community

Questions on testing for STIs other than HIV or hepatitis infections were first asked in the Sydney Women and

Table 2.5.3: Gonorrhoea and chlamydia testing and prevalence in the Health in Men cohort

Number tested	2003 (*N* = 1009) *n* (%)	2004 (*N* = 997) *n* (%)	2005 (*N* = 871) *n* (%)
Gonorrhoea (number tested positive)			
Urine	3 (0.3)	4 (0.4)	1 (0.1)
Throat	79 (7.8)	56 (5.6)	52 (6.0)
Rectum	12 (1.2)	11 (1.1)	9 (1.1)
Chlamydia (number tested positive)			
Urine	9 (0.9)	10 (1.0)	6 (0.7)
Throat	11 (1.1)	7 (0.7)	5 (0.6)
Rectum	47 (4.7)	21 (2.1)	15 (1.8)

Table 2.5.4: Syphilis testing and prevalence in the Health in Men cohort

Number tested	Intake 2001 (*N* = 432)	Intake 2002 (*N* = 434)	Intake 2003 (*N* = 427)	Intake 2004 (*N* = 92)
Negative	422	427	415	90
Positive	21	7	12	2
Prevalence (%)	4.86	1.61	2.81	2.17

Table 2.5.5: Hepatitis A and B testing and incidence in the Health in Men cohort

Number of participants	Intake 2001 *n* (%)	Intake 2002 *n* (%)	Intake 2003 *n* (%)	Intake 2004 *n* (%)
Hepatitis A				
Total recruited	450	453	430	94
Total tested	436	439	429	94
Tested seropositive	300 (68.8)	296 (67.4)	307 (71.6)	67 (71.3)
Tested seronegative and completed the first annual follow-up interview	104	106	38	13
Infected during the 12-month interval	26 (25.0)	34 (32.1)	14 (36.8)	4 (30.8)
Hepatitis B				
Total recruited	450	453	430	94
Total tested	436	438	429	94
With history of infection	90 (20.6)	80 (18.3)	69 (16.1)	21 (22.3)
Vaccinated	231 (53.0)	236 (53.9)	228 (53.2)	42 (44.7)
Tested seronegative and completed the first annual follow-up interview	83	91	51	15
Infected during the 12-month interval	0	0	0	0
Vaccinated during the 12-month interval	24 (28.9)	25 (27.5)	12 (23.5)	1 (6.7)

Table 2.6.1: Reported lifetime experience of sexually transmissible infections or blood-borne viruses—Australian Study of Health and Relationships[1]

Condition	Men (%) (*N* = 9729)	Women (%) (*N* = 9578)
Pubic lice or crabs	9.8	4.2
Genital warts	4.0	4.4
Wart virus on Pap smear	–	5.1
Chlamydia	1.7	3.1
Genital herpes	2.1	2.5
Syphilis	0.6	0.1
Gonorrhoea	2.2	0.6
Non-specific urethritis	5.0	–
Pelvic inflammatory disease	–	2.3
Bacterial vaginosis	–	1.8
Trichomoniasis	–	0.8
Candida or thrush	6.6	57.6
Hepatitis A	1.9	1.6
Hepatitis B	0.7	0.7
Hepatitis C	0.5	0.5

[1] From Table 1, p. 237 of Grulich et al. (2003b).

Sexual Health survey in 2002. In that year, 75% of women reported the time frame in which they had last been tested for an STI other than HIV: 17% less than six months ago, 7% six to 11 months ago, 18% one to two years ago and 33% more than two years ago. (As elsewhere in this report, results are for women surveyed at Fair Day only.)

In 2004, different questions were asked, to ascertain how many women had ever had certain samples taken, regardless of whether they knew what they were being tested for. A urine test had been performed for 28%, blood test for 42%, vaginal swab for 37%, throat swab for 4%, and anal swab for 2%; 34% had never been tested.

In both years, women were asked where they had gone for their most recent STI test. The GP or family doctor was the most commonly reported venue for STI testing. Details are shown in Table 2.6.2.

About a third of the women (31% in 2002 and 38% in 2004) reported that they had ever had a cold sore on the mouth and about one in 20 (5% in 2002 and 6% in 2004) that they had ever had genital herpes.

There was some evidence of underscreening in relation to Pap smears. Results are shown in Table 2.6.3.

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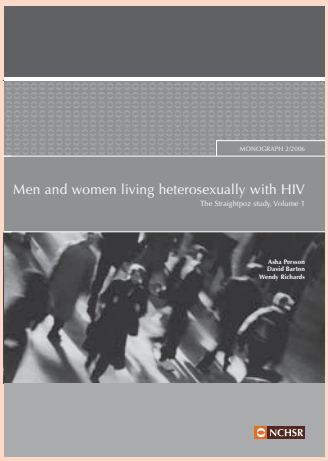
Table 2.6.2: Where Sydney Women and Sexual Health respondents went for most recent test for a sexually transmissible infection

	2002 (*N* = 505)		2004 (*N* = 486)	
	n	%	*n*	%
GP/Family doctor	250	49.5	203	41.8
Sexual health clinic	44	8.7	55	11.3
FPA Health clinic	13	2.6	10	2.1
24-hour medical centre	21	4.2	17	3.5
Women's health centre	22	4.4	25	5.1
Other	19	3.8	10	2.1

Table 2.6.3: When Sydney Women and Sexual Health respondents had their most recent Pap smear

	2002 (*N* = 505)		2004 (*N* = 486)	
	n	%	*n*	%
Less than a year ago	183	36.2	153	31.5
One to three years ago	159	31.5	161	33.1
More than three years ago	53	10.5	57	11.7
Never	73	14.5	77	15.8
No answer	37	7.3	38	7.8

Living heterosexually with HIV in New South Wales: a new report from NCHSR



The Straightpoz study is the first major Australian study to explore the lives of people living heterosexually with HIV in NSW, including HIV-positive men and women, HIV-negative partners and serodiscordant couples. The aim of this qualitative longitudinal study is to identify issues and experiences that are specific to this largely invisible and under-researched population in the epidemic. This information will help service providers to develop resources and support that better meet the needs of those living heterosexually with HIV. It will also increase understanding of the relationship between sexual identity, gender and HIV.

The study commenced in 2004 and is conducted by NCHSR in collaboration with the Heterosexual HIV/AIDS Service NSW (Pozhet). Findings from the first phase of data collection are presented in the report *Men and women living heterosexually with HIV: The Straightpoz study, Volume 1*, which is available from November 2006. A second phase of data collection will begin in spring 2006, and a third and last phase will take place in 2008. Analysis and dissemination of the findings are ongoing.

Citation Persson, A., Barton, D. & Richards, W. (2006). *'Men and women living heterosexually with HIV: The Straightpoz study, Volume 1* (Monograph 2/2006). Sydney: National Centre in HIV Social Research, The University of New South Wales.

3 Living with HIV

On a national basis, only one study, HIV Futures—conducted initially in 1997 (Ezzy et al., 1998) and since repeated every second year (Grierson et al., 2004)—provides reliable information on both sexual practice and treatment uptake among people living with HIV and AIDS, and includes representation of people from all categories of HIV transmission.

Regional information is available from other studies, including the gay community periodic surveys and the Positive Health cohort study conducted in Sydney by NCHSR and the National Centre in HIV Epidemiology and Clinical Research, with input from the Australian Research Centre in Sex, Health and Society for a smaller Melbourne arm of the study. The first round of face-to-face interviews for the Positive Health study was conducted in 1999, the second round in late 2000 and early 2001, and interviews have been conducted annually since 2003 (Fogarty et al., 2003). Sexual practice questions were not included in the baseline interview schedule but were included in the Sydney follow-up in 2000–2001.

Data reported in this section have also been drawn from the clinic-based Australian HIV Observational Database (AHOD), managed by the National Centre in HIV Epidemiology and Clinical Research, and the gay community periodic surveys conducted in Sydney, Melbourne, Brisbane, Canberra, Adelaide and Perth.

3.1 Sexual practice

The sexual practices of people with HIV have been surveyed nationally in the HIV Futures study only twice in the period covered by this report, so trends over time cannot be accurately gauged. The number of responses from women in the HIV Futures study to questions regarding unprotected intercourse is relatively small, as is the number of responses from men who had female partners, so these data should be interpreted with caution.

Even though an accurate assessment cannot be made, the HIV Futures study indicates little change in the percentages of HIV-positive men who engaged in unprotected intercourse with casual male partners and with regular male partners (see Table 3.1.1). Both men and women (Table 3.1.2) were more likely to have had unprotected anal intercourse with a seroconcordant than a serodiscordant regular partner.

The Positive Health data indicate that relatively high proportions of men engaged in unprotected anal intercourse with seroconcordant casual male partners or regular partners; these proportions appeared to be stable over time. There was, however, an increase in the proportion reporting unprotected anal intercourse with discordant or nonconcordant casual male partners, from 51% of men in 2001 to 65% in 2004, followed by a drop to 56% in 2005.

3.2 Self-ratings of health

In various studies, HIV-positive people were asked to rate their health as 'excellent', 'good', 'fair' or 'poor'. Table 3.2 shows the percentage of people who reported 'excellent'

Table 3.1.1: Unprotected intercourse among men living with HIV/AIDS[1]

Partner type	2001		2003		2004		2005	
	n	%	*n*	%	*n*	%	*n*	%
HIV Futures	*N* = 818		*N* = 945					
Casual male	371	59.0	293	64.3			–[2]	
Casual female	17	41.2	17	47.1				
Regular male (HIV-positive)	122	91.8	120	85.0				
Regular male (HIV-negative)	121	41.3	113	35.4				
Regular female (HIV-positive)	8	87.5	–	–				
Regular female (HIV-negative)	19	27.3	24	20.8				
Positive Health	*N* = 242		*N* = 408		*N* = 308		*N* = 327	
Casual male (HIV-positive only)[3]	79	74.7	142	70.4	118	78.8	145	74.5
Casual male (HIV negative/Unknown)[3]	146	51.4	142	63.4	118	65.3	145	55.9
Regular male (HIV-positive)	52	71.2	65	73.8	69	79.7	70	74.3
Regular male (HIV-negative/Unknown)	67	40.3	80	20.0	91	24.2	83	21.7

[1] Shows the number and percentage of men living with HIV/AIDS who reported having unprotected intercourse (vaginal or anal) with casual and regular partners in the six months before the survey. '*N*' is the total number of men in each study, and '*n*' in each case is the number of men who had a partner of the specified type. The percentage shown is the proportion of men who had a partner of that type and who had had any unprotected intercourse in the six months before the survey. Thus, of the 17 men in HIV Futures in 2003 who had had a casual female partner, seven men had had unprotected intercourse.

[2] Data not yet available.

[3] Based only on those who had engaged in unprotected anal intercourse with casual partners (and therefore not comparable with HIV Futures figures above); i.e. 145 of a total of 327 men in 2005 reported having had some unprotected anal intercourse. Of those who had had some unprotected anal intercourse, 74.5% had done so with HIV-positive casual partners and 55.9% with casual partners of negative or unknown serostatus.

Table 3.1.2: Unprotected intercourse among women living with HIV/AIDS[1]

Partner type	2001		2003	
	n	%	*n*	%
HIV Futures	*N* = 74		*N* = 81	
Casual male	8	25.0	9	33.3
Regular male (HIV-positive)	9	100.0	12	75.0
Regular male (HIV-negative)	21	42.9	22	59.1

[1] Shows the number and percentage of women living with HIV/AIDS who reported having had unprotected intercourse (vaginal or anal) with casual and regular male partners in the six months before the survey. None of these women had had female partners.

Table 3.2: Self-ratings of health as 'excellent' or 'good'[1]

Source	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Australia										
HIV Futures	891	69.2			1029	67.8			–[2]	
Sydney										
Positive Health[3]	292	79.8	323	79.9			274	85.0	286	82.5
Melbourne										
Positive Health[3]	105	68.6	84	69.0			55	72.7	41	70.7

[1] Rather than 'fair' or 'poor'. [2] Data not yet available. [3] Includes 'excellent', 'very good' and 'good'.

or 'good' overall health. It also shows that, over time, HIV-positive people's self-ratings of health varied little in each study. Sydney participants in the Positive Health cohort study tended to report better overall health than the Melbourne participants and the nationwide HIV Futures sample.

3.3 Treatment uptake and viral load

HIV-positive homosexually active men in Sydney, Melbourne and other parts of Australia took up combination antiretroviral therapy very quickly after it became available (see Figure 7). In the national sample from the HIV

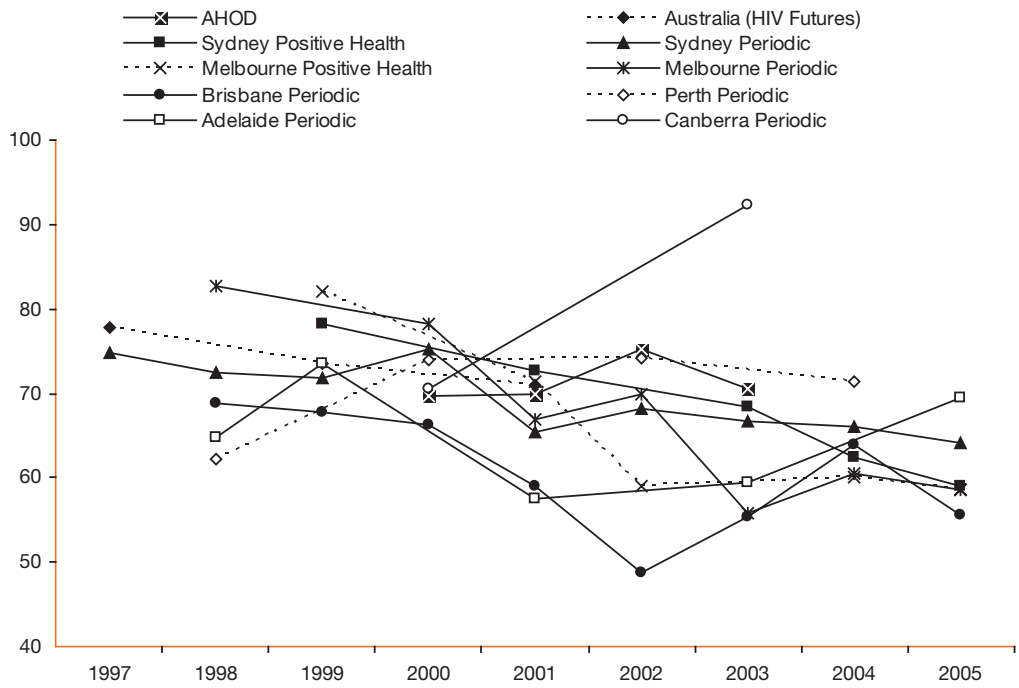


Figure 7: Percentage of people living with HIV/AIDS who are on combination antiretroviral therapy

Table 3.3.1: People living with HIV/AIDS on combination therapy

Source	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Australia										
HIV Futures[1]	884	71.0			1029	67.3			–[2]	
AHOD[3]	2266	73.0	2156	74.1	2156	74.1	1909	79.0	–[2]	
Sydney										
Periodic[4]	443	65.5	420	68.1	330	66.7	416	66.1	483	64.2
Positive Health[1]	292	72.6			322	68.3	274	62.4	286	59.1
Melbourne										
Periodic[4]	151	66.9	150	70.0	177	55.9	159	60.4	162	58.6
Positive Health[1]	105	71.4			84	70.2	55	60.0	41	58.5
Brisbane										
Periodic[4]	88	59.1	121	48.8	94	55.3	122	63.9	81	55.6
Perth										
Periodic[4]			27	74.1			49	71.4		
Adelaide										
Periodic[4]	33	57.6			42	59.5			36	69.4
Canberra										
Periodic[4]					13	92.3[5]				

[1] 'Combination therapy' is defined as two or more antiretrovirals.
[2] Data not yet available.
[3] AHOD = Australian HIV Observational Database. 'Combination therapy' is defined as two or more drugs taken for at least two weeks.
[4] 'Combination therapy' is defined as 'combination antiretroviral therapy'.
[5] Percentage to be treated with caution as it is based on a small number of participants.

Futures study, 74% of HIV-positive people reported being on combination antiretroviral therapy in 1999, a figure corroborated by data from other studies throughout Australia in the same year, as shown in Figure 7. (The different percentages in Table 3.3.1, page 35, to some extent reflect different definitions of 'combination antiretroviral therapy', as indicated by the footnotes to the table.)

Data from Melbourne participants in the gay community periodic surveys indicate a significant decline in the proportion of people living with HIV who use combination therapy ($p < 0.05$). This may be due to a fall in the practice of treating HIV early, or to an increase in the proportion of people stopping treatment or having a treatment break. The only study to have shown a significant increase in the use of combination therapy is the clinic-based Australian HIV Observational Database.

Key data from Table 3.3.1 are presented graphically in Figure 7. Where available, relevant data from surveys conducted since 1997 are also included. (Note that for legibility the *y*-axis has been drawn from 40% to 100% rather than from 0% to 100%.)

Table 3.3.2 presents data from various sources on the proportion of people living with HIV/AIDS who have undetectable viral load. Data are presented separately for those using antiretroviral therapy and those not using it at the time of data collection. Clearly, a larger proportion of those using antiretroviral therapy have undetectable viral load (in the region of 60% to 85% depending on the sample) than those not using therapy (mostly around 10% to 25%). Among Sydney participants in Positive Health, there was a significant increase in the proportion of men using antiretroviral therapy who had undetectable viral load ($p < 0.001$).

3.4 Treatment experiences

A significant consideration for people on combination therapy is the prospect or experience of adverse side effects. As indicators of side effects (see Table 3.4), the experiences of (a) diarrhoea or nausea, (b) anxiety or depression or fear, (c) lipodystrophy and (d) 'any side effects' were calculated. Trends in the data were not analysed because there were either too few data points or, in the case of the Positive Health study, questions asked of participants in 2004 and 2005 were

Table 3.3.2: People living with HIV/AIDS who have undetectable viral load

Source	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Australia										
HIV Futures										
Using ART[1]	568	70.8			619	76.1				
Not using ART	200	17.7			140	21.4				
AHOD[2]										
Using ART[3]	1510	56.9	1420	60.9	1452	59.8	1427	66.4		
Not using ART	389	8.7	384	12.8	350	12.9	307	12.1		
Sydney										
Periodic										
Using ART			101	80.2	217	75.1	267	77.5	306	81.7
Not using ART			54	13.0	108	24.1	141	24.8	167	21.6
Positive Health										
Using ART	206	67.0			220	70.0	195	83.1	208	87.5
Not using ART	72	13.9			98	20.4	79	24.1	64	15.6
Melbourne										
Periodic										
Using ART					98	74.5	94	72.3	95	83.2
Not using ART					77	16.9	61	16.4	63	11.1
Positive Health										
Using ART	74	56.8			59	66.1	42	66.7	29	79.3
Not using ART	30	10.0			22	9.1	13	7.7	6	–
Brisbane										
Periodic										
Using ART			58	75.9	51	74.5	78	80.8	45	84.4
Not using ART			61	21.3	41	19.5	44	27.3	34	38.2
Perth										
Periodic										
Using ART			18	84.2			35	82.9		
Not using ART			8	15.8			12	33.3		

[1] ART = antiretroviral therapy

[2] AHOD = Australian HIV Observational Database

[3] Using ART for at least two weeks of the year.

slightly different from questions asked in previous years. However, based on the available data, a smaller proportion of HIV Futures participants reported side effects. (The lower percentages from HIV Futures were attributable to the way the questions were asked, as open-ended questions, so the figure would be an underestimation of participants' experiences of side effects.) Experience of diarrhoea/nausea, anxiety/depression/fear and lipodystrophy would appear to be the norm among participants on antiretroviral therapy.

3.5 Adherence

Adherence to antiretroviral regimens is an important issue. An indicator of adherence—having not missed any doses during the previous two days—was available from the HIV Futures and Positive Health studies. On this indicator, approximately 85% of the 2003 Positive Health participants missed no doses. In the HIV Futures study, people who had missed doses were more likely to believe that medication was an unwanted reminder of HIV status and/or to have depressive symptoms. Recent data from both studies show that approximately 50% of those currently taking antiretrovirals experienced difficulty taking pills on time (see Table 3.5, page 38). No data were reported in 2004 from the Positive Health study as questions about adherence were changed after 2003.

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Table 3.4: Experience of side effects by people on combination therapy[1]

Source	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Diarrhoea/Nausea										
Australia										
HIV Futures	588	24.5			693	25.3				
Sydney										
Positive Health	194	64.5			155	73.6				
Melbourne										
Positive Health	70	81.4			49	75.5				
Anxiety/Depression/Fear										
Australia										
HIV Futures	886	21.3			693	43.1				
Sydney										
Positive Health	194	60.8			155	69.0	193	88.1		
Melbourne										
Positive Health	70	72.9			49	77.6	42	66.6		
Lipodystrophy										
Australia										
HIV Futures	836	38.4			693	44.2				
Sydney										
Positive Health	194	71.6			155	72.9	193	65.3	169	34.3
Melbourne										
Positive Health	70	74.3			49	69.4	42	63.3	24	45.8
Any side effects										
Australia										
HIV Futures	588	43.9			693	53.2				
Sydney										
Positive Health	194	81.4			155	94.2	193	84.5	169	42.6
Melbourne										
Positive Health	70	90.0			49	95.9	42	83.3	24	41.7

[1] The side effects may not all be attributable to taking antiretrovirals. From 2004, in Positive Health, slightly different questions were asked from those asked in 2001 and 2003.

Table 3.5: Experience of taking pills[1]

Source	2001		2003	
	N	%	*N*	%
Missed any doses during past two days				
Australia				
HIV Futures	640	17.2	664	34.5
Sydney				
Positive Health	194	13.9	178	14.5
Melbourne				
Positive Health	70	28.6	60	15.0
Experienced any difficulty taking pills on time				
Australia				
HIV Futures	588	45.0	693	41.7
Sydney				
Positive Health	194	49.0	178	48.9
Melbourne				
Positive Health	70	60.0	60	48.3

[1] Due to changes in the Positive Health questionnaire, these data were not collected in 2004.

4 Recreational drug use

4.1 Monitoring of recreational drug use among homosexually active men

Data on recreational drug use among homosexually active men are available from a number of studies including HIV Futures, the Health in Men cohort of HIV-negative gay men in Sydney, the Positive Health cohort of people living with HIV/AIDS in Sydney and Melbourne, and the periodic surveys.

4.1.1 Homosexually active men and illicit drug use

Use of illicit drugs among homosexually active men is higher than among the general population (Australian Institute of Health and Welfare, 2002), particularly among men attached to gay community. Table 4.1.1 shows the percentages of men who reported using at least one non-prescription illicit drug in the six months before the survey. Data in Table 4.1.1 were drawn from the Health in Men and Positive Health cohort studies, HIV Futures and several periodic surveys (where relevant questions were included).

Illicit drug use shows strong regional variation. For example, the gay community periodic surveys indicate more extensive use of drugs in Sydney than in other cities. As an indication of the regional variation in drug use, approximately 50% to 90% of the men (at the higher end of this range among men in the Health in Men and Positive Health studies) reported having used at least one non-prescription illicit drug in the six months prior to the survey. Use of more than one such drug (also shown in Table 4.1.1) was reported by around 50% to 65% of those in the cohort studies and around 30% to 45% of those in other studies.

Generally, the level of use, as measured in the percentages reported here, appears to be fairly stable over the time period observed, with the high rates in the Sydney periodic survey showing a slight downward trend ($p < 0.05$). An exception was among

gay men in Adelaide, where any drug use showed an increasing trend ($p < 0.01$), albeit from a lower base than most other samples. Based on periodic survey data, use of more than one drug increased significantly in Brisbane ($p < 0.01$), Melbourne ($p < 0.001$) and Adelaide ($p < 0.001$).

4.1.2 Homosexually active men and injecting drug use

Various surveys of homosexually active men have asked whether respondents injected drugs in the preceding six months (see Table 4.1.2). Rates of injecting drug use are much lower than for illicit drug use in general. Gay-community-attached men were more likely to have injected a drug. In general, a higher percentage of men in the Positive Health and HIV Futures studies reported injecting, although the latter study asked about injecting in the previous 12 months, so this figure is not directly comparable with the others in Table 4.1.2. In the Positive Health cohort, there was a significant upward trend in injecting drug use over the past three years.

The longitudinal data available suggest that the level of injecting drug use has remained relatively stable over the

Table 4.1.1: Illicit drug use among homosexually active men in the six months prior to the survey

Source	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Any drug use										
Australia										
HIV Futures[1]	725	70.6			621	71.2				
Sydney										
Health in Men	450	81.1	823	78.3	1179	80.6	1103	79.6	942	78.8
Positive Health	263	89.7			323	94.7	274	93.1	286	83.2
Periodic	2862	73.2	2884	70.4	2541	72.8	2821	70.8	3413	69.9
Gay Asian Men			457	38.1						
Melbourne										
Positive Health	90	67.8			84	96.4	55	92.7	41	70.7
Periodic	1830	60.7	1877	59.4	2064	62.7	1962	60.6	1804	63.2
Brisbane										
Periodic	1570	52.1	1787	47.8	1510	56.5	1667	60.6	1382	57.2
Perth										
Periodic			790	55.3			1014	56.2		
Adelaide										
Periodic	565	54.9			834	56.4			629	62.6
Canberra										
Periodic					255	49.4				
Used more than one drug										
Australia										
HIV Futures[1]	702	49.4			621	46.2				
Sydney										
Health in Men	450	67.8	823	64.8	1179	65.6	1103	64.2	942	62.8
Positive Health	263	69.6			323	64.0	274	63.9	286	62.6
Periodic	2862	57.1	2884	53.6	2541	56.3	2821	55.1	3413	54.3
Gay Asian Men			457	21.9						
Melbourne										
Positive Health	90	51.1			84	45.2	55	54.5	41	43.9
Periodic	1830	41.8	1877	40.1	2064	44.3	1962	42.7	1804	46.1
Brisbane										
Periodic	1570	32.5	1787	29.3	1510	38.9	1667	41.9	1382	38.1
Perth										
Periodic			790	34.6			1014	37.4		
Adelaide										
Periodic	565	30.8			834	37.1			629	46.1
Canberra										
Periodic					255	32.2				

[1] Gay and homosexually active men only.

Table 4.1.2: Injecting drug use among homosexually active men in the six months prior to the survey

Source	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Australia										
HIV Futures[1]	720	14.6			601	14.6				
Sydney										
Health in Men	450	3.3	823	2.9	1179	3.5	1103	2.8	942	2.8
Positive Health	263	13.3			323	8.1	274	11.7	286	15.0
Periodic	2862	7.0	2884	5.4	2541	6.5	2821	6.8	3413	5.2
Gay Asian Men			457	0.2						
Melbourne										
Positive Health	90	13.3			84	10.8	55	12.7	41	9.8
Periodic	1830	4.0	1877	4.8	2064	4.7	1962	5.0	1804	4.7
Brisbane										
Periodic	1570	9.6	1787	10.1	1510	6.6	1667	5.7	1382	5.1
Perth										
Periodic			790	4.1			1014	4.2		
Adelaide										
Periodic[2]	565	4.1			834	4.6			629	4.6
Canberra										
Periodic					255	1.6				

[1] Gay and homosexually active men only. Data are for injecting drug use in the previous 12 months.

[2] Questions have changed over time and figures are not directly comparable.

reporting period, albeit higher than rates in the general population based on the National Drug Strategy Household Surveys. For example, any injecting drug use in the past 12 months (compared with the past six months in the case of most of the data in Table 4.1.2) was reported by 1.1% of metropolitan respondents and 0.7% of regional respondents (Williams, 2001). Data from the periodic survey in Brisbane indicated a significant decline in the proportion of men who reported injecting drug use ($p < 0.001$).

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4.2 Recreational drug use among women in contact with Sydney's gay and lesbian community

Data on drug use, including injecting, among women in contact with the gay and lesbian community are available from the Sydney Women and Sexual Health study outlined above in Section 1.4

Though rates are not as high as among homosexually active men, women in contact with the gay and lesbian community have higher rates of illicit drug use than the general community. Table 4.2.1 shows the percentage of women surveyed at Sydney Gay and Lesbian Mardi Gras Fair Day who reported use of any of a list of drugs in the preceding six months. Injecting drugs was rare—2% had injected any drug in the previous six months—but still more common than in the general community (Table 4.2.2).

Injecting drug use among the women attending Fair Day has fallen over the years since the survey was first carried out in 1996, when 8.5% of respondents (40 out of 468) reported having injected a drug in the previous six months. In the 1998 survey, 5.4% (29 out of 538) did so. However, it is not known whether this represents a real fall in the prevalence of injecting in this community or whether the early surveys in 1996 and 1998 attracted more injecting drug users because ACON's Gay and Lesbian Injecting Drug Use Project was in operation. In 1996 and 1998 there seemed to be a correlation between reporting sex work and injecting drug use; numbers were too small in the recent surveys to make reliable inferences. The median age of recent injectors tends to be slightly lower than that of the sample as a whole (30 vs 31 years in 2002; 29 vs 32 in 2004); very few women continue to inject after the age of 40. The proportion of injecting drug users who reported sharing any equipment varied between 54% (7 out of 13) in 2002 and 10% (one out of 10) in 2004, but no clear trend over time was apparent.

For further information:

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4.3 Pilot study of drug use among young people attending music festivals

Existing surveillance systems show that drug use, both licit and illicit, is prevalent among young people in Australia. Interventions to minimise harms associated with drug use among youth are needed, including programs aimed at delaying or preventing initiation of drug use or injecting drug use. However, the existing data available on drug use among Australian youth is limited. A fuller understanding of patterns of drug use and of changes in these patterns is required to respond with evidence-based policy and practice to reduce the harm associated with drug use.

This pilot project surveyed young people attending music festivals to provide an additional source of information about drug use. The future aim of the project is to conduct repeated surveys at music festivals to provide information about drug use patterns over time. However, this type of survey poses challenges in terms of sampling and hence to the ability to generalise the findings to the 'population' of young people attending music festivals. In this pilot study, we focused on the process of conducting a survey at music festivals to determine the optimum procedure for carrying out future surveys. The pilot had two main aims: (1) to investigate patterns of response to the request to participate; (2) to examine patterns of drug use reported by participants and compare these patterns with those reported in other surveys.

Three cross-sectional surveys were conducted at youth-oriented music festivals in 2004 and 2005. In 2004, data were collected at the Big Day Out in Sydney and Splendour in the Grass in Byron Bay. In 2005, data were collected only at Splendour in the Grass. The Big Day Out is a one-day festival; Splendour in the Grass is a two-day festival, at which patrons can camp on site. According to media estimates, about 30000 people attend Big Day Out while approximately 15000 people attend the two days of Splendour in the Grass.

NCHSR hired a stall at each festival and participants were recruited from among the patrons. Festival patrons 16 years of age and older who passed the stall were approached by researchers or volunteered to participate by completing a questionnaire. The survey questionnaire was comparable to other Australian studies and designed to be completed in five to 10 minutes. The questionnaire included questions about demographics, drug use history and networks, knowledge of the means of transmission of blood-borne viruses, health status, and the perceived ease of obtaining illicit drugs.

In 2004, 1935 people at Big Day Out and 1197 people at Splendour in the Grass were approached by researchers or volunteered to participate during the recruitment period. The final response rate was 35% (674 out of 1935) for Big Day Out and 67% (804 out of 1197) for Splendour in the Grass. In 2005 a random selection technique was attempted at Splendour in the Grass. Over a thousand people (1192) were randomly selected from passers-by

Table 4.2.1: Illicit drug use in the previous six months among women surveyed at Sydney Gay and Lesbian Mardi Gras Fair Day

Drug	2002 (*N* = 505)		2004 (*N* = 486)	
	n	%[1]	*n*	%[1]
Cannabis	209	41.4	183	37.7
Ecstasy	166	32.9	133	27.4
Viagra	6	1.2	–[2]	–[2]
GHB	–[2]	–[2]	12	2.5
Cocaine	91	18.0	48	9.9
Methamphetamine	34	6.7	33	6.8
Heroin	11	2.2	5	1.0
Amphetamines	135	26.7	118	24.3
Other drug	61	12.1	49	10.1
Any drug	251	49.7	238	49.0

[1] The percentage is based on the number of women who answered 'yes' to use of a drug, divided by the total number of respondents to the survey. However, about 15% of women left the drug use question blank, some of whom failed to answer the whole second page of the questionnaire. The percentages given may thus be underestimates of the prevalence of recent drug use.

[2] Question not asked.

Table 4.2.2: Injecting drug use in the previous six months among women surveyed at Sydney Gay and Lesbian Mardi Gras Fair Day

Drug	2002 (*N* = 505)		2004 (*N* = 486)	
	n	%	*n*	%
Cocaine	2	0.4	1	0.2
Methamphetamine	4	0.8	4	0.8
Heroin	6	1.2	4	0.8
Amphetamines	9	1.8	9	1.9
Other drug	5	1.0	2	0.4
Any drug	10[1]	2.0	10	2.1

[1] In an earlier question, a further three women (total 13) said they had injected in the six months prior to the survey.

and asked to complete a questionnaire, and 379 accepted, providing a response rate of 32%. The remaining 444 participants from the 2005 sample were volunteers. Analyses were carried out on 1478 questionnaires in 2004 and 823 in 2005.

In 2004, participants (56% female) had a mean age of 22 years (range 15 to 69) and most (88%) identified as heterosexual. Nearly all (95%) spoke English at home and 87% reported Australia as their country of birth. Twenty-nine participants (2%) identified as Aboriginal or Torres Strait Islander. More than half the participants (56%) reported education above Year 12, and 79% were employed at least part-time. The 2005 sample had a similar demographic profile (47% female) with a mean age of 24 years (range 16 to 53) and most (85%) identified as heterosexual. Twelve participants (1.5%) identified as Aboriginal or Torres Strait Islander. More than half the participants (66%) reported having been educated beyond Year 12, and 89% were employed at least part-time in the 12 months before the survey.

Alcohol and tobacco use were common among festival patrons in both years. In 2004, 45% of Big Day Out participants had consumed alcohol in the previous six months, and 28% had smoked tobacco; 86% of Splendour in the Grass participants had drunk alcohol in the previous month and 43% had smoked tobacco. In 2005, 95% of Splendour in the Grass participants reported having drunk alcohol in the previous 12 months and 32% reported having smoked at least one cigarette per day. Among those who reported having used alcohol, half (50.6%) reported having drunk five or fewer drinks on each occasion.

Illicit drug use was also common among festival patrons. Most (82%) of the 2004 sample reported having ever used any illicit drug at least once. Cannabis (78%) was the most commonly reported illicit drug. The illicit drugs next most commonly reported by the 2004 sample were ecstasy (50%), amphetamines (46%), LSD (26%), cocaine (21%), methamphetamine (18%), heroin (5%) and GHB (5%). Of the 2005 sample, 87% reported having used illicit drugs at least once, the most common being cannabis (84%). The proportion of participants who reported illicit drug use is presented in Table 4.3.1, page 44.

The music festival survey questionnaire used at Big Day Out in 2004 also asked respondents about illicit drug use in the preceding six months. The questionnaire used at Splendour in the Grass in the same year was changed to provide information about the previous month, which was considered to elicit more accurate responses. In 2005 the measure was changed to 12 months to enable comparison with population estimates of recent drug use published by the Australian Institute of Health and Welfare. Recent use of illicit drugs was common among festival patrons in both years, with the most common drug used being marijuana followed by ecstasy and amphetamines (Table 4.3.2). In the 2005 Splendour in the Grass sample, recent illicit drug use was common, with large proportions of participants reporting having recently used marijuana (71%), ecstasy (51%) and amphetamine (44%), which contrasts with Australian population data where similar-aged people reported much lower levels of recent use of marijuana (26%), ecstasy (12%) and methamphetamine (11%). Recent illicit drug use is presented in Table 4.3.2.

In 2004, 64 participants (4.3%) reported that they had ever injected drugs and 17 (1.1%) reported having injected in the previous six months. Amphetamine was the drug most commonly injected. Of the 17 recent injectors, four reported having reused a needle and syringe after someone else, two reported having reused a tourniquet and two reported having used a swab, spoon or filter after someone else. In 2005, 53 participants (6.4%) reported that they had ever injected drugs, with 23 (2.8%) reporting that they had done so in the previous 12 months. The proportion of recent injectors was higher than that reported in population estimates, which suggest that 1.0% of people aged 20 to 29 years had injected drugs in the previous 12 months. Among recent injectors in the 2005 sample, amphetamine was the drug most commonly injected (n = 16), followed by ecstasy (n = 6), methamphetamine (n = 6), and heroin (n = 4). Three recent injectors reported having reused a needle and syringe after someone else, and two reported reusing a tourniquet, swab, spoon or filter after someone else.

Drug use is common in the social networks of these young people. Table 4.3.3 shows that more than half of the participants in the 2004 sample had used illicit drugs with friends (55%) and/or their current partner (25%). Nearly a third of participants reported that family members (36%), people they lived with (31%) and sexual partners (30%) used illicit drugs. Most participants (95%) reported that their friends used illicit drugs, and 91% had spent time with people who used illicit drugs. The 2005 sample also reveals how drug use is common among networks of young people, with 64% reporting that they used drugs with friends and 32% with their current partner.

These findings suggest that drug use is prevalent among these young people and common in their social networks. Besides reporting their own levels of drug use, almost all participants reported that their friends used illicit drugs and that they spent time with people who used illicit drugs. Australian population data suggest that illicit drug use is not highly prevalent among the broader population of Australian young people, but it may be becoming more common among specific groups or within certain sociocultural contexts such as music festivals. This points to the need to understand the context in which drug use occurs.

Periodic surveys conducted at music festivals will provide important information on drug use among young people. This sample differs from others involved in surveillance systems as participants are recruited not because of their drug-using status but as part of a population of people attending specified events.

For further information:

Drug use among young people attending music festivals
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Table 4.3.1: Illicit drug use by music festival patrons: drugs *ever* used

	2004		2005	
	n	%	*n*	%
Big Day Out, Sydney				
Cannabis	506	75.1		
Ecstasy	339	50.3		
Amphetamines	324	48.1		
LSD	195	28.9		
Cocaine	147	21.8		
Methamphetamine	136	20.2		
Heroin	40	5.9		
GHB	46	6.8		
Total	674	100.0		
Splendour in the Grass, Byron Bay				
Cannabis	647	80.5	693	84.2
Ecstasy	405	50.4	471	57.2
Amphetamines	362	45.0	429	52.1
LSD	192	23.9	206	25.0
Cocaine	165	20.5	185	22.5
Methamphetamine	129	16.0	135	16.4
Heroin	28	3.5	33	4.0
GHB	30	3.7	53	6.4
Total	804	100.0	823	100.0

Table 4.3.2: Illicit drug use by music festival patrons: drugs recently used

	2004		2005	
	n	%	*n*	%
Big Day Out, Sydney	**Past six months**			
Cannabis	191	28.3		
Ecstasy	137	20.3		
Amphetamines	120	17.8		
LSD	52	7.7		
Cocaine	44	6.5		
Methamphetamine	54	8.0		
Heroin	18	2.7		
GHB	26	3.9		
Total	674	100.0		
Splendour in the Grass, Byron Bay	**Past month**		**Past 12 months**	
Cannabis	368	45.8	583	70.8
Ecstasy	226	28.1	419	50.9
Amphetamines	168	20.9	358	43.5
LSD	32	4.0	73	8.9
Cocaine	39	4.9	88	10.7
Methamphetamine	48	6.0	60	7.3
Heroin	5	0.6	8	1.0
GHB	14	1.7	19	2.3
Total	804	100.0	823	100.0

Table 4.3.3: People with whom illicit drugs were used

	2004		2005	
	n	%	*n*	%
Big Day Out, Sydney				
Current partner	123	18.2		
Family member	55	8.2		
Friend	312	46.3		
Dealer	69	10.2		
Total	674	100.0		
Splendour in the Grass, Byron Bay				
Current partner	237	29.5	267	32.4
Family member	157	19.5	160	19.4
Friends	504	62.7	529	64.3
Dealer	113	14.1	137	16.6
Total	804	100.0	823	100.0

5 Hepatitis C

5.1 Hepatitis C testing, diagnosis and treatments among homosexually active men and people living with HIV/AIDS

Data on hepatitis C testing, diagnosis and treatments are available from a number of studies including HIV Futures, the Australian HIV Observational Database, the Health in Men cohort of HIV-negative gay men in Sydney and the Positive Health cohort of people living with HIV/AIDS in Sydney and Melbourne. In earlier years, women were included in the Positive Health figures (3% in 2001 and 5% in 2003); in later years, men only were included.

Substantial proportions of people living with HIV/AIDS and gay-community-attached men have ever been tested for hepatitis C or were tested for hepatitis C in the 12 months prior to interview or survey (see Table 5.1). People living with HIV/AIDS are generally more likely than HIV-negative gay men to have been diagnosed with hepatitis C. In studies of people living with HIV/AIDS, more than 10% of participants are generally co-infected with hepatitis C, of whom around 10% have taken medical treatments specifically for hepatitis C.

5.2 Side effects of hepatitis C treatment

Since the 1990s, patients receiving interferon-based treatments for hepatitis C infection have consistently shown significant decrements in health-related quality of life when measured with instruments such as the SF36 Health Survey. These studies indicate that interferon-based treatments produce severe physical and psychiatric side effects including fatigue, aching muscles, major depression and anxiety. Although these instruments measure substantial decreases in individuals' physical and mental functioning during treatment, they do not give information about the significance of such side effects to overall

quality of life. Similarly, how people come to make the decision to seek treatment, their experiences of treatment and the strategies they use to cope with the side effects of treatment are not elucidated by these quantitative measures. Currently, there are no published findings of studies that investigate the experience of hepatitis C treatment and its impact on, for example, personal relationships, work and domestic life. Patients and health care workers might use such information to improve patients' capacity to manage side effects and adhere to treatment.

In response to this gap in the research literature, NCHSR researchers (Hopwood & Treloar, 2005) explored people's experiences of interferon-based treatments. Specifically, we studied people in New South Wales with hepatitis C (*N* = 504) regarding their experiences of treatment side effects. Of 19 participants in the in-depth interviews, six had received interferon-based treatment for hepatitis C infection, four of whom had nearly finished treatment at the time of interview. One participant reported that she had terminated treatment several years earlier because of side effects, and another had completed an interferon and ribavirin trial three years before the interview. Participants reported that the decision to begin treatment usually followed a clinical evaluation of their suitability. Before entering treatment, all participants said that they were aware (from a range of sources including doctors, a magazine and support groups) that significant side effects were associated with treatment with interferon.

Participants reported a range of significant physical and psychiatric adverse events including depression, anxiety, impacts on heart function, migraine, aching muscles, headache, insomnia and fatigue. At times these were severe enough to affect patients' physical health, emotional stability and capacity to function normally. Psychiatric impacts from treatment included anxiety and depression and these were particularly disruptive to participants' quality of life. The occurrence of mood disorders during treatment, particularly endogenous depression, was the most common reason given for discontinuation of

Table 5.1: Hepatitis C testing, diagnosis and treatments among homosexually active men and people living with HIV/AIDS

	2001		2002		2003		2004		2005	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Tested for hepatitis C[1]										
Australia										
HIV Futures	894	65.4			1029	72.9				
AHOD[2]			2086	81.7						
Sydney										
Health in Men[3]	450	64.0	453	61.4	430	64.0	94	60.6		
Positive Health	292	33.6			323	38.5	274	36.9	286	43.4
Melbourne										
Positive Health	105	27.6			83	34.9	55	30.9	41	26.8
Ever tested positive for hepatitis C										
Australia										
HIV Futures	894	13.9			1029	15.9				
AHOD[4]			2086	10.7						
Sydney										
Health in Men	450	5.8	453	3.1	430	2.6	94	4.3		
Positive Health	292	13.7			323	11.1	274	10.9	286	11.5
Melbourne										
Positive Health	105	17.2			83	10.8	55	7.3	41	2.4
Ever taken treatments specifically for hepatitis C[5]										
Australia										
HIV Futures	125	10.7			163	5.4				
Sydney										
Positive Health[6]							30	10	33	6.1
Melbourne										
Positive Health[6]							4	–[7]	1	–[7]

[1] Questions about testing for hepatitis C were framed differently in the various studies reported here. In the HIV Futures, Australian HIV/AIDS Observational Database and Health in Men studies, respondents were asked whether they had ever been tested for hepatitis C, whereas respondents to the Positive Health study were asked whether they had been tested for hepatitis C in the previous 12 months.

[2] AHOD = Australian HIV Observational Database

[3] Based on new recruits into Health in Men each year. There were no new recruits in 2005.

[4] Percentages are based on AHOD participants who had been tested for hepatitis C during each year.

[5] These treatments included interferon monotherapy or combination therapy of interferon and ribavirin. '*N*' is based on men who had tested positive for hepatitis C.

[6] In Positive Health, men were asked about treatment in the previous 12 months, not whether they had ever undertaken treatment.

[7] The number of men is too small to give a reliable percentage.

interferon-based treatment. Given that psychiatric side effects of treatment are routinely reported, patients need access to ongoing professional support, e.g. counselling, to manage these side effects, maximise adherence to treatment and improve their quality of life.

The latest regimen, pegylated interferon and ribavirin, may be the means by which health systems can prevent large numbers of people from living and dying with chronic liver diseases. The improved cure rate of the new treatment and recent changes to the criteria for inclusion in treatment programs have paved the way for more people in Australia to have access to treatment for hepatitis C. Given these developments, more people will be exposed to side effects, which, if not managed properly, will lead them to reduce doses and discontinue treatment. There is now, more than ever, an imperative to understand and ameliorate patients' experience of treatment.

A further qualitative study that grew out of this data is described in the next section. It aims to uncover how people cope with treatment-related side effects and what impacts these have on quality of life and treatment adherence. We know from previous research that narratives of chronic illness have assisted many people, including clinicians, to come to terms with disease, its treatment and the associated upheaval to people's everyday lives. A focus on hepatitis C patients' narratives could significantly improve our understanding of the impact of side effects and help those both administering and undergoing future interferon-based treatments.

5.3 Treatment for hepatitis C infection: management of side effects and treatment experience

During 2004 and 2005 a qualitative study was conducted of 20 people receiving hepatitis C treatment and six health care workers responsible for managing hepatitis C treatment programs at three major metropolitan hospitals in inner Sydney. The main findings are as follows:

5.3.1 Adaptive responses to treatment side effects

Participants receiving treatment for hepatitis C infection reported having applied adaptive responses learned during prior adversity to manage severe treatment-related side effects. Participants drew upon previous experiences of dependence on alcohol or other drugs, growing up in poverty, living with symptoms of chronic illness, coping with childhood sexual abuse and managing depression. In most social scientific literature, social marginalisation is associated with poor health outcomes for affected people, but the findings of this study suggest that there are important coping skills to be uncovered among people from socially and economically marginalised backgrounds and among those living in disadvantaged circumstances. This finding has implications for the clinical management of hepatitis C treatment. The factors and processes that facilitate people's ability to adapt to cope with adversity associated with social marginalisation can be assessed for their clinical contribution to coping with an arduous treatment regimen.

5.3.2 Resilience

These findings have been viewed through the theoretical lens of 'resilience', a construct that has emerged from developmental psychology. The findings indicate a need for assessment of a person's capacity to cope with adversity. 'Strengths-based assessment', a method of identifying the protective factors and processes in a person's social and familial contexts, can be used to improve outcomes in people who experience adverse circumstances such as illness or natural disasters. Our findings suggest that using strengths-based assessment in pre-treatment interviews might help to uncover the protective elements in people's lives that can enhance their capacity to cope with side effects from hepatitis C treatment.

5.3.3 Unrealistic optimism

Another useful psychological construct identified in our participants' narratives is 'unrealistic optimism': that is, judging oneself to be at low risk of encountering negative events. In past research, unrealistic optimism has been implicated in contributing to risky health practices and to delays in seeking help. Data from this study suggest that at least some people entering treatment for hepatitis C have an unrealistic view of treatment-related side effects and their capacity to cope, and do not prepare for the impact of side effects even though they have been informed by clinicians that such side effects are highly likely. Again, strengths-based assessment may be an effective means to address unrealistic optimism during pre-treatment interviews, as it is a means of evaluating individuals' vulnerabilities as well as strengths. The phenomenon of unrealistic optimism is also significant when considering shifting the provision of hepatitis C treatment from specialised centres to community-based general practitioners. Opportunities for support from general practitioners are likely to be more limited than those currently offered by liver clinics.

5.3.4 Stigma and discrimination

Perennial issues for people with hepatitis C, including those receiving treatment, are stigma and discrimination (Hopwood & Treloar, 2003). Participants reported that when they disclosed their hepatitis C infection, or that they were receiving treatment, they experienced discrimination. Those who feared or had experienced discrimination discussed their approaches to disclosure, which could be grouped into four main categories: (i) non-disclosure, where participants told no one they were receiving treatment, (ii) substitute disclosure, where participants told others they were receiving a treatment such as 'chemotherapy' for a 'blood disorder' or 'a liver problem', (iii) selective disclosure, where participants strategically disclosed by informing only key people of their condition to garner support during treatment, and (iv) open disclosure, where participants disclosed widely that they had hepatitis C and were receiving treatment.

Participants sometimes applied different approaches depending on the context, but it was usual to adopt one approach and to use it exclusively. Three different theories of disclosure could account for the variations in disclosure practice evident in our data. A theory of disease progression suggests that people only tell others when disease symptoms become obvious. A theory of competing consequences suggests that disclosure is an outcome of a cost-benefit appraisal of the likely positive or negative outcomes from disclosure. Theories of class and ethnicity suggest that social background determines disclosure behaviour; a higher level of education was associated with wider disclosure.

5.3.5 Illicit drug use during treatment

Acknowledgment of patients' illicit drug use during treatment for hepatitis C infection is largely absent from the clinical literature. This study explored illicit drug use among people receiving treatment, examining the perspective of health care workers. According to the nurses and a social worker whom we interviewed, it is very common for patients to use non-prescribed drugs, both recreationally and to assist in reducing the impact of side effects from treatment drugs. Illicit drugs, especially cannabis, were described as clinically helpful in reducing the severity of treatment side effects. Although metropolitan hepatitis C treatment clinics were characterised as tolerant, some health care workers advised patients to downplay their illicit drug use during treatment when talking with their doctors, and nurses did not record this information in medical records. While health care workers' management and manipulation of sensitive information (and professional sensibilities) facilitated administration of an arduous regimen to a complex patient population, this practice reinforces stereotypes of 'good' and 'bad' patients. Illicit drugs are evidently widely used during treatment, but a lack of any clinical evaluation denies a full appreciation of the role of illicit drugs in ameliorating or exacerbating side effects and therapeutic efficacy. A legacy of prohibition and the clinical practice of burying information about patients' illicit drug use place unfair responsibility on nurses and social workers for their patients' health, and sustain a culture of ignorance among specialists. By extension, this also affects the clinical research literature on illicit drug use and its relation to adherence, the management of side effects and suitability for treatment. These findings suggest that research to investigate the risks and benefits associated with illicit drug use during hepatitis C treatment is required.

5.3.6 Everyday coping strategies

Finally, this study provided an insight into the everyday (legal) coping strategies deployed by patients during treatment. These included the use of medical products like paracetamol, skin care medications and antidepressants. A large number of personal coping strategies were also identified, including winding down businesses or work obligations, rest and relaxation, participating in favourite activities, keeping occupied, maintaining a healthy lifestyle, and identifying and using available support from family, friends, community services and, where possible, the workplace. Some people found that work was an essential coping strategy. Work provided stimulation and was a distraction from side effects. Many participants noted the importance of prioritising activities to manage the impact of fatigue. Participants reported deploying relaxation strategies during treatment, like listening to music. Many participants saw treatment as a turning point in their life and an opportunity to implement healthier practices. Changes in health practices included drinking more water, eating healthy foods, abstaining from drug and alcohol use or keeping it to a minimum, and starting to exercise or exercising more. A positive mental attitude reportedly helped people to cope better with treatment-induced changes in patterns of thinking. Some participants used cognitive restructuring techniques such as positive self-talk (learnt from experiences with counselling for domestic violence or alcohol and other drug use) and anger management to help maintain an adaptive outlook and cope with the psychiatric impacts of treatment.

For further information:

Treatment for hepatitis C infection
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5.4 Barriers to hepatitis C treatment among current injecting drug users

In Australia, current and former injecting drug users constitute 75% of the 210 000 people estimated to have been infected with hepatitis C (Dore et al., 2003). Current injecting drug users have been able to gain access to government-funded treatment for hepatitis C infection in Australia since May 2001, but treatment uptake has remained low. The low rate of treatment uptake among current users may be a result of general barriers to treatment access or of barriers specific to injecting drug users; for example, they may see it as a low priority, or clinicians may actively discriminate against them. A study carried out in 2003–2004 aimed to gain an understanding of the perceived barriers to treatment for hepatitis C infection among injecting drug users and to find out what proportion of participants would consider hepatitis C treatment under different scenarios (Doab et al., 2005).

Participants were recruited via convenience and snowball sampling from two sites in inner Sydney, a primary health care facility which provided health care to youth at risk, injecting drug users and sex workers, and a methadone clinic.

Data were obtained from 100 participants who completed interviewer-administered surveys. Fifty-nine per cent were male and 77% were heterosexual. Almost half (45%) were 31 to 40 years old. Most participants (89%) were born in Australia or New Zealand and 14% identified as Aboriginal. Two-thirds of the participants lived in inner Sydney and most participants were socioeconomically disadvantaged, with 65% living in government-subsidised housing and 75% receiving social security benefits. Seventy-seven per cent had not received a formal school education past Year 10. The great majority of participants (88%) were in

treatment for drug dependency and most of these (79%) were taking methadone.

5.4.1 Barriers to treatment for hepatitis C infection

Twenty-three participants had unsuccessfully attempted to gain access to treatment for hepatitis C infection. The most commonly reported reason for not being able to obtain treatment was that participants had been told their liver disease was not sufficiently advanced (n = 10). Other reported reasons were being a current injecting drug user (n = 5), long waiting lists for treatment (n = 3), heavy alcohol intake (n = 2) and concerns on the part of their doctor about whether they would adhere to treatment (n = 2).

Thirty participants had been offered treatment for hepatitis C infection by a doctor but had declined the offer. Some had been offered preliminary assessment for treatment, such as a liver biopsy. The main reasons given for declining the treatment offer were concern about adverse effects of treatment (n = 18), not feeling sick enough to commence treatment (n = 17), having other health priorities at that time (n = 15) and concern about feeling lethargic while undergoing treatment (n = 12). Most of these 30 participants provided more than one reason.

5.4.2 Consideration of treatment for hepatitis C infection

Under the scenarios provided, participants generally stated that they would consider treatment for hepatitis C infection even if a baseline liver biopsy were required (78%), if treatment meant having to have thrice-weekly injections (86%), and if treatment were associated with common adverse effects listed by the interviewer (82%). Willingness to consider treatment increased further (to 89%) if medications could be given to help ameliorate adverse effects. The more effective the treatment, the more participants were willing to consider it: 36% would consider a treatment with 20% efficacy and 93% a treatment with 70% efficacy.

In short, most participants would consider treatment for hepatitis C infection even under current treatment conditions. Under the most realistic current efficacy level (40%), 63% would consider or strongly consider treatment.

Real or perceived barriers to treatment for hepatitis C infection existed for many participants. Only 30% of participants had ever been offered treatment, and 23% had unsuccessfully attempted to obtain treatment. Furthermore, fewer than half had ever discussed treatment for hepatitis C infection with a health care professional. There are several potential explanations for these levels of treatment access. Physicians may believe that current injecting drug users are ineligible for government-funded treatment (which was the case in Australia before May 2001). Physicians who are aware of the policy change may believe it inappropriate to treat current injecting drug users for hepatitis C infection because of concerns about treatment adherence, poor treatment outcomes and reinfection with hepatitis C. Despite the high proportion of injecting drug users in this study willing to consider treatment, other social and health issues may take priority over treatment for hepatitis C infection among current injecting drug users.

For further information:

Barriers to hepatitis C treatment among injecting drug users
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5.5 Information practices of people with hepatitis C

In a study investigating information practices of people with hepatitis C, participants who responded to a national online survey about their use of the internet to access information were asked to volunteer for a follow-up, face-to-face, semi-structured interview. Fifteen people from New South Wales, Victoria and Western Australia were interviewed about how they sought and used information about hepatitis C in everyday and clinical settings. A further 14 interviews were conducted with people who accessed a needle and syringe program at a drug user organisation.

Analysis of qualitative interview data generated a number of broad themes relating to how participants accessed information from various sources including the internet, how they assessed the validity of this information, and the extent to which information was understood critically. Further themes relate to changes in information requirements and practices over time, and the use of hepatitis-C-related information in everyday and clinical experiences of people with hepatitis C. The following is a brief summary of findings relating to (1) information use leading up to and during treatment programs, and (2) how study participants recruited at the needle and syringe program made judgments about the reliability and trustworthiness of information.

Interview data indicated that the internet was used extensively by some people with hepatitis C to obtain information about treatment options, including developments in treatment research, and to assist in decisions about treatment uptake. Internet mailing lists and other interactive facilities were valued as forums for sharing and discussing research developments, experiences of treatment side effects, and more generally as a source of peer support for people receiving treatment for hepatitis C. The internet was used for clinical as well as everyday information and support, with information about treatments used to complement and clarify, rather than to replace, that provided by health professionals. People were able to compare and relate their own experiences before and during treatments to those of other people who had similar genotypes, side effects and social situations. Such internet-based research and communication enabled people to commence and undergo treatment programs with comprehensive understandings of clinical as well everyday meanings of treatments for hepatitis C.

Participants recruited at the needle and syringe program were asked about how and where they found information about hepatitis C, and how they made judgments about

the reliability and accuracy of information from various sources. A strong theme throughout the interviews was the extent to which drug user organisations were perceived as a reliable and trusted source of information about hepatitis C and drug-related harm reduction. For many people interviewed, the user organisation was the primary or only place where they accessed hepatitis-C-related information, either from staff at the needle program or a nurse at the clinic. Participants compared experiences of discrimination in non-peer-based services with services provided at the peer-based organisation. Empathy and non-judgmental service were among the reasons provided for preferring peer-based services, along with the provision of 'firsthand' and contextualised information and resources for drug users. Staff at the user organisation were considered to be conversant with everyday understandings of people who used drugs, as well as with up-to-date research findings and medical information. A particular strength of the user organisation was reported to be the provision of printed information alongside informal conversations with staff of the needle and syringe program.

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6 The current climate

6.1 Serosorting among homosexually active men

Five years ago Suarez and colleagues (2001) defined 'serosorting' as 'discussing HIV status with potential partners and only engaging in risk behaviour with those they believe are of similar serostatus' (Suarez & Miller, 2001, p. 292). However, the practice of serosorting—or at least a variety of serosorting, under a different name—has been around for a long time.

As early as 1993 a number of researchers discussed the topic of HIV transmission in the context of seroconcordancy. In a letter to the journal *AIDS*, Peter Davies (1993) detailed the possible 'sexual partnership by serostatus' combinations and pointed out that in certain of these combinations, condom use was not necessary for 'safe' sex (i.e. in the cases of an HIV-positive person with an HIV-positive partner, and an HIV-negative person with an HIV-negative partner).

Kippax and others (1993, 1997) identified the practice of dispensing with condoms within a regular relationship and described a strategy called 'negotiated safety' that gay men used to dispense with condoms inside their HIV-negative, seroconcordant, regular and committed relationships. Kinder and others at the AIDS Council of New South Wales (ACON) developed the *Talk Test Test Trust and Talk Again* campaign, and gay communities, first in Sydney and then later around Australia, promoted 'negotiated safety' as a deliberate safe sex strategy (Kinder, 1996). The negotiated safety strategy is safe under certain conditions, namely:

- that the sexual partners are in a regular relationship
- that the sexual partners are HIV-negative and aware of each other's HIV-negative status
- that the sexual partners have reached a clear and unambiguous agreement about their sexual practice both within and outside the relationship
- that the agreement specifies that sexual practice outside the relationship is safe with regard to HIV transmission, i.e.

that there is either no sex outside the relationship, no anal sex outside the relationship, or no unprotected anal sex outside the relationship

- that the agreement is kept and that sexual partners inform one another if the agreement is broken.

Although there were misgivings, and researchers in the United States coined the term 'negotiated danger' (Ekstrand et al., 1993), researchers and AIDS organisations in a number of countries, including the Netherlands and Germany, endorsed the strategy. As Davidovich et al. (2000) in the Netherlands and Crawford et al. (2001) in Australia have shown, negotiated safety is in general safe; that is, men who adopt it generally practise it safely and do not place themselves or their regular sexual partners at risk of HIV. Nonetheless, as reported earlier in this report, data from the Seroconversion study (see Section 2.1.5 in this report) indicate that the negotiated safety strategy is sometimes adopted in the absence of negotiation or in the context of crudely negotiated agreements.

Positive–positive sex, that is, the selection by HIV-positive people of HIV-positive partners with whom to have unprotected anal intercourse, was also identified as widespread among gay men in Australia (Van de Ven et al., 1998). In 2005, data from the gay periodic surveys in Sydney continued to indicate the popularity of these strategies: 63% of gay men in HIV-negative concordant regular relationships did not use condoms all or some of the time within their regular relationships. Similarly, 71% of gay men in HIV-positive concordant relationships had sex without condoms with their regular partners. These figures contrast with the 23% of men who did not use condoms at least some of the time in serodiscordant regular relationships or in relationships in which the serostatus of one or more of the partners was unknown.

While under the strict conditions of negotiated safety and within seroconcordant HIV-positive relationships, unprotected sex carries little risk of HIV transmission, it does not prevent the transmission of other sexually transmissible infections. Australia is currently experiencing a rapid increase in gonorrhoea and chlamydia rates among gay men (National Centre in HIV Epidemiology and Clinical Research, 2005; NSW Health Department, 2006).

In the past couple of years, researchers have identified that some men are 'serosorting' in the context of casual sex, that is, selecting casual sexual partners—both HIV-negative and HIV-positive—on the basis of serostatus. This practice has been documented among gay men in a number of countries, including Australia (Mao et al., 2006), the United States (Truong et al., 2004; Hart et al., 2005) and the United Kingdom (Davis et al., 2006). As Mao et al. (2006) show, the trend among HIV-negative men to 'serosort' is increasing. Other data from NCHSR (as yet unpublished) also show a significant increasing trend towards serosorting among HIV-positive men.

Some have been sanguine about this move (Truong et al., 2004). Others, for example in Australia, have referred to serosorting in casual encounters as 'seroguessing'. While unprotected positive–positive sex among casual partners is safe with regard to HIV transmission, its negative–negative counterpart is not. In the context of casual sexual encounters, serosorting for HIV-negative men raises issues of trust, which is not the case for HIV-positive men. Not only might the veracity of a potential partner's assertions of HIV-negativity be questionable, but for sexually active men to assume that they themselves are HIV-negative is fraught. Furthermore, as Adam (2005) notes, serosorting can be difficult even for HIV-positive men, in part because it requires disclosure, and it is prone to miscommunication. The internet may provide a relatively safe context for such disclosure, as some recent findings indicate (Bolding et al., 2005).

More research is needed to assess the impact of serosorting in casual sexual encounters on condom use and on HIV transmission rates. Furthermore, it may also be important to distinguish between different types of casual encounters; some casual encounters are more 'casual' than others. However, there can be no doubt that an appreciable increase in unprotected anal intercourse in casual sexual encounters will undermine the safe sexual culture that continues to protect men from HIV infection.

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6.2 Circumcision and HIV prevention

Exciting news was announced from the International AIDS Society meeting in Rio de Janeiro in February 2005: a randomised controlled trial of adult male circumcision for prevention of HIV transmission being carried out in South Africa was so effective—0.4 relative risk of infection in the intervention arm—that the researchers considered it unethical to continue (Auvert et al., 2005). The study was halted and men in the control arm were offered circumcision straight away. Other trials are currently under way in Uganda and Kenya.

These studies are based on ecological evidence that HIV transmission rates were lower in countries or ethnic groups where the majority of men were circumcised, and on cross-sectional studies showing that uncircumcised men were more likely than circumcised men to acquire HIV (Baeten et al., 2005; Siegfried et al., 2005; Weiss et al., 2000). There are also physiological reasons why circumcision should be protective against HIV. For example, the cells of the inner surface of the foreskin are particularly vulnerable to HIV infection, and the keratinised surface of the exposed glans penis of the circumcised penis is thought to be less vulnerable to minor trauma or infection by sexually transmissible pathogens.

Circumcision is currently controversial in the English-speaking world, with fervent advocates and opponents pouncing on every piece of new information that seems to support their case. Countries with supposedly evidence-based health care systems have dramatically varied neonatal circumcision rates: the United States leads the developed world with a continuing high rate, while the United Kingdom turned away from it in the 1950s after several decades of enthusiasm for it. Australia sits somewhere in between, with high rates continuing until

the 1970s. Thus, the majority of hospital-born Australians over 35 are circumcised, but men under 25 are likely not to be (Richters et al., 2006; Templeton et al., 2006). Outside the English-speaking world the division between circumcised and uncircumcised is more likely to fall along cultural or religious lines, with high rates of circumcision either in infancy or at puberty among Jewish and Muslim populations.

In Australia, proponents of routine neonatal circumcision build their case largely on the health benefits of the procedure, particularly in reducing rates of childhood urinary tract infections and penile cancer in old age (Morris, 1999, 2006; Royal Australasian College of Physicians, 2004). Opponents tend to take a broader rights-based approach, often conceding some health benefits, but expressing concern about the ethics of removing a healthy body part without informed patient consent, and about possible deleterious effects on sexual sensitivity, pain at the time of the procedure and, some claim, long-term psychological ill-effects (e.g. Bensley & Boyle, 2001; Richters, 2006b; Royal Australasian College of Physicians, 2004). However, critics have also argued that, historically, the claimed health benefits have not been significant and that the motivations of advocates in promoting the procedure are rather more complex (Darby, 2005; Fox & Thomson, 2005; Richters, 2006a).

Where does this leave Australians concerned about their own risk of HIV? The first thing to note is that male circumcision protects only the insertive partner in vaginal intercourse (and presumably also anal intercourse, even if not to the same extent). Most HIV in Australia is transmitted between homosexually active men, most of whom practise both insertive and receptive anal intercourse (Van de Ven et al., 2001). Condoms are still essential for anal sex between men, except in limited circumstances of negotiated safety between HIV-negative partners.

Circumcision gives considerable but not total protection for the insertive partner. Depending on how optimistic we are about early study results, circumcision is around 60% protective for the insertive partner in vaginal intercourse, whereas the protective effect of consistent condom use is usually cited at around 80% to 90%. No HIV-negative man who is aware of the possibility of being exposed to an HIV-positive partner should abandon condoms and depend on circumcision for protection. Benefits from the procedure are more likely to be felt in countries where HIV infection has a high prevalence but testing rates are low and unprotected intercourse between serodiscordant partners is common; none of these things is true of Australia.

No estimates for how protective circumcision may be for the insertive partner in anal intercourse have yet been published. It is possible, however, that the observed lower risk of HIV infection for men who practise only the insertive role (Vittinghoff et al., 1999) is partly due to most of those men (in the United States, at least) being circumcised. In a largely uncircumcised population, practising only insertive anal intercourse might have little protective value.

An earlier analysis of data from the Risk Factors for HIV Infection (or Seroconversion) study (see Section 2.1.5 above) failed to find any association between circumcision status and infection by insertive unprotected anal intercourse (Grulich et al., 2001). On the other hand, an analysis of risk factors for other infections in the Health in Men study found that the risk of contracting syphilis was lower among circumcised men (Jin et al., 2004). Circumcision protects men from ulcerative STIs, notably chancroid and syphilis (Weiss et al., 2006), conditions which in themselves probably increase the risk of acquiring HIV infection. However, there is little recent evidence that circumcision has much of a role in preventing STIs in developed countries. A study of 300 heterosexual men in a Sydney sexual health clinic concluded that circumcision had no significant effect on the incidence of common STIs, though the authors remarked that this finding might not extend to other settings with poorer hygiene and a different spectrum of infections (Donovan et al., 1994). An earlier study of those who attended a sexual health clinic in Perth, Western Australia, found that circumcision had a protective effect for syphilis (Parker et al., 1983). Among national population-based surveys, the United States National Health and Social Life Survey (NHSLS) found no protective effect of circumcision (Laumann et al., 1997), nor did the 2000 British National Survey of Sexual Attitudes and Lifestyles (Dave et al., 2003). An analysis of data from the Australian Study of Health and Relationships found a protective effect only for penile candidiasis (thrush infection) (Richters et al., 2006).

Theoretically, circumcision might be somewhat protective for the insertive partner in unprotected oral sex. However, the risk of acquiring HIV through insertive oral sex alone is so low (Campo et al., 2006) that any protective effect is probably unmeasurable.

Apart from homosexually active men and people who acquire HIV infection through injecting drug use, Australians who acquire HIV do so for a disparate set of reasons. They include people whose infected partners lied to them about their HIV status, or whose partners were unaware themselves, people who caught HIV overseas (perhaps unaware of the higher prevalence in some countries, or making mistaken assumptions about who might be infected), people whose regular partners acquired HIV overseas, women partners of bisexual men, partners of injecting drug users, and, in earlier years, people who received infected blood products or whose partners did. This pattern would be unlikely to change even if all the men in question were circumcised. Circumcised men would be less likely to acquire HIV infection in casual unprotected insertive intercourse, but circumcision would act only as a delaying factor, not sufficient protection, for men in regular long-term relationships with infected women (itself a rare occurrence in this country). In Australia, there is no substitute for HIV testing before abandoning condom use in long-term relationships.

It is striking, however, that withdrawal (i.e. avoiding ejaculation within the vagina), a technology-free method

that largely protects a woman from infection by a male partner (de Vincenzi, 1994), has received no attention in international HIV prevention circles, while circumcision, which largely protects a man from infection by a woman, is being trumpeted as a huge success.

In conclusion, the decision about circumcision to be made by an 18-year-old man in southern Africa is very different from the decision facing a man in Sydney, where HIV is largely homosexually transmitted and there is no direct evidence for protection by circumcision. The parents of a baby born today in Australia have different grounds again on which to make a decision about neonatal circumcision, a decision which involves, if HIV is to be a rational part of it, calculating the prevalence of HIV in 16 or so years' time and the likelihood of an effective vaccine being available by then.

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