



## Annual report of trends in behaviour 2014

HIV/AIDS, hepatitis and sexually transmissible infections in Australia

Never Stand Still

Faculty of Arts and Social Sciences

Centre for Social Research in Health

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# Glossary

**ART** – antiretroviral treatment, consisting of a combination of antiretroviral drugs to control HIV infection

**GP/GPs** – general practitioner(s), a medical practitioner working in the community who provides comprehensive health care for people of all ages; in some countries known as family doctor/physician

**HIV** – human immunodeficiency virus

**HIV-seroconcordant relationship** – a relationship in which both partners are of the same HIV status, either HIV-positive or HIV-negative

**HIV seroconversion** – the process of becoming HIV-positive (confirmed by antibody testing); the appearance of HIV antibodies in the blood serum

**HIV seroconverter** – someone who is in the process of seroconverting to HIV (becoming antibody-positive to HIV)

**HIV-serodiscordant relationship** – a relationship in which both partners are known (as a result of testing) to be of different HIV serostatus (e.g., HIV-positive and HIV-negative)

**HIV-serononconcordant relationship** – a relationship in which the HIV status of at least one partner in the relationship is not known (e.g., HIV-positive and untested, HIV negative and untested or both untested)

**HIV (sero)status** – a person's antibody status established by HIV testing (e.g., HIV-negative, HIV-positive, or unknown [untested])

**microbicide** – compounds which can be applied inside the vagina or rectum to protect against sexually transmissible infections, including HIV; microbicides currently being developed and tested include antiretroviral drugs

**MSM** – men who have sex with men

**n** – denotes the frequency of responses or classifications.

**N** – denotes the denominator in each quantitative analysis of proportions.

**ns** – non-significant

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

**NSP** – needle and syringe program, a public health initiative providing sterile injecting equipment to injecting drug users to minimise the spread of blood borne viruses

**post-exposure prophylaxis** – for the purpose of this report, it refers to the use of antiretroviral drugs by HIV-negative people to reduce the risk of HIV infection after a potential exposure has occurred

**pre-exposure prophylaxis** – for the purpose of this report, it refers to the use of antiretroviral drugs by HIV-negative people to reduce the risk of HIV infection before a potential exposure has occurred

**serosorting** – there are multiple definitions of serosorting; for the purposes of this report we define it as selecting sexual partners on the basis of a common or shared HIV serostatus confirmed by HIV testing.

**SD** – standard deviation

**STI** – sexually transmissible infection

**CLAI** – condomless anal intercourse; this was previously referred to as unprotected anal intercourse (UAI)

**CLAIC** – condomless anal intercourse with casual partners; this was previously referred to as unprotected anal intercourse with casual partners (UAIC)

**CLAIR** – condomless anal intercourse with regular partners; this was previously referred to as unprotected anal intercourse with regular partners (UAIR)



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- Living Positive Victoria
- Multicultural HIV and Hepatitis Service
- National Aboriginal Community Controlled Health Organisation (NACCHO)
- National Association of People with HIV Australia (NAPWAH)
- National Drug Research Institute, Curtin University
- National Health and Medical Research Council (NHMRC)
- Nepean Blue Mountains Local Health District
- New South Wales Ministry of Health
- New South Wales STI Programs Unit (NSW STIPU)
- New South Wales Users and AIDS Association (NUAA)
- Northern Territory Department of Health
- Police Citizens Youths Club Glebe/Leichhardt
- Paediatric HIV Service, Sydney Children's Hospital
- Positive Life New South Wales
- Positive Life South Australia
- Pozhet – Heterosexual HIV Service in New South Wales
- Public Health England
- Queensland Aboriginal and Islander Health Council
- Queensland AIDS Council (QuAC)
- Queensland Health
- Queensland Positive People
- South Australia Health
- School of Psychology, University of Queensland
- School of Public Health and Community Medicine, UNSW Australia
- Social Policy Research Centre, UNSW Australia
- Tanadgoma – Center for Information and Counseling on Reproductive Health
- Tasmania Department of Health and Human Services
- Tasmanian Aboriginal Centre
- Turning Point Alcohol and Drug Centre
- Universitat Autònoma de Barcelona
- Victorian Aboriginal Community Controlled Health Organisation
- Victorian AIDS Council
- Victorian Government Department of Health
- Western Australia Department of Health
- Western Australian AIDS Council
- Western Australian Centre for Health Promotion Research (WACHPR), Curtin University
- Western Sydney Local Health District
- Winnunga Nimmityjah Aboriginal Health Service



# Executive Summary

## Sexual practices and risk in gay men

Data regarding sexual practices and risk among gay men are predominantly collected through the ongoing Gay Community Periodic Surveys (GCPS). While these surveys show that many indicators of HIV risk among gay men have remained stable, trends in several important indicators suggest that the risk of HIV transmission and acquisition remains high or may even be increasing.

## Male partners and safe sex

Over the last ten years, the proportion of men reporting more than ten male sex partners in the six months prior to survey has fallen across Australia, from 31.5% in 2004 to 24.5% in 2013. This decreasing trend over the ten-year period has been consistent across all participating states and territories.

The proportion of men who had no condomless anal intercourse (CLAI; previously referred to as unprotected anal intercourse, UAI) with male partners has remained stable around 55% nationally in the past ten years, including the most recent three years. The lower and declining rates of men who had no CLAI in Perth are of concern.

## Risk and risk reduction with regular male partners

Condomless anal intercourse with regular male partners (CLAIR; previously referred to as unprotected anal intercourse with regular partners, UAIR) remains more common than condomless anal intercourse with casual male partners (CLAIC; previously referred to as unprotected anal intercourse with casual partners, UAIC). About half of men with regular partners report any CLAIR, and nationally this rate has been stable over the last decade, including in the most recent three

years. Rates of CLAIR have been increasing over the past decade in Canberra, Perth and Queensland.

Among men with an HIV sero-discordant or sero-nonconcordant regular male partner, nationally the proportion reporting any CLAIR within their relationship has been stable around 40% in the past ten- and three-year periods.

While rates have been decreasing in Sydney and Melbourne, a significant increase has occurred in Queensland in the past ten and three years.

The proportion of men in seroconcordant HIV-negative relationships who have explicit “negotiated safety agreements”, which could reduce HIV transmission in these regular relationships, has fluctuated over the last decade, with a high of 37.9% in 2008 and a low of 29.6% in 2012. While the 10-year trend was significantly declining nationally and across all participating states and territories, in the past three years increased rates of negotiated safety arrangements have been observed in Sydney and Queensland.

## Risk and risk reduction with casual male partners

Over the last ten years, rates of CLAIC among men with casual partners have increased nationally, from 29.7% in 2004 to 34.9% in 2013, with a high of 38.4% in 2012. This increasing trend has been consistent across all participating states and territories, except in Canberra. In the past three years, proportions of men reporting CLAIC have been stable nationally and increased in Queensland only.

Over the past ten years, both HIV-negative and -positive gay men have become increasingly more likely to disclose their HIV status to all casual partners. Among HIV-negative men

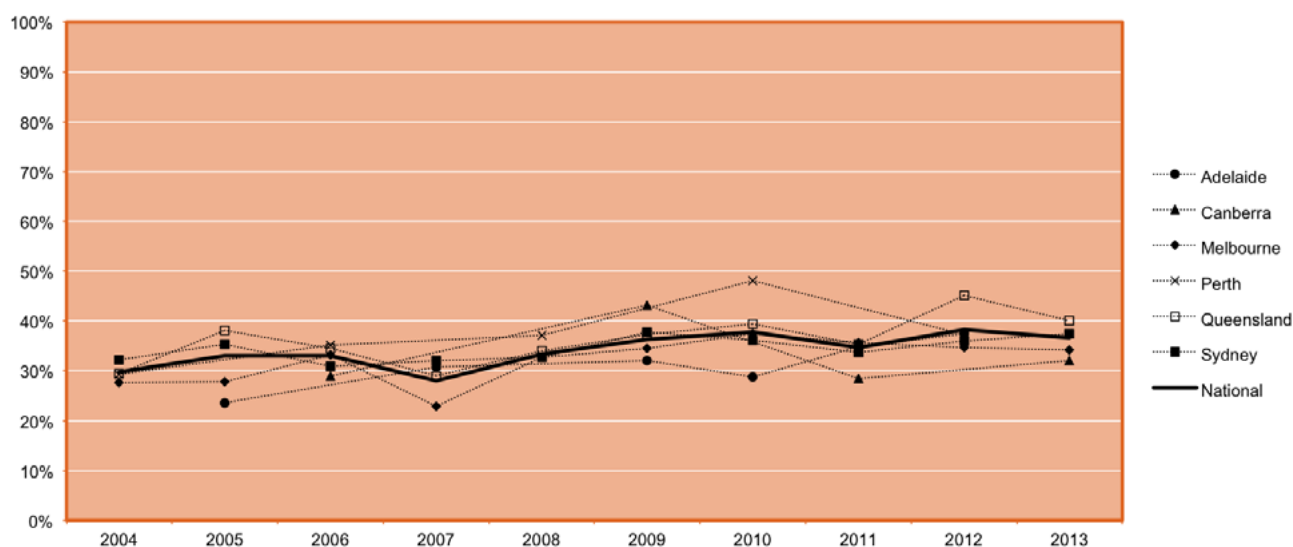


Figure 6: Men with casual partners who reported any CLAIC in the six months prior to the survey: GCPS, 2004-2013

with casual partners, the proportion reporting consistent disclosure of their HIV status to all casual partners increased from 16.9% in 2004 and to 23.6% in 2013. This 10-year increasing trend has been consistent across all participating states and territories. The increase has, however, stabilised in the last three years, except in Canberra, where it continued.

HIV-positive men are increasingly more likely to disclose their HIV status to all casual partners than HIV-negative men. Notably, among HIV-positive men with casual partners, the proportion reporting consistent HIV-status disclosure to casual partners increased nationally, from 18.4% in 2004 to 34.9% in 2013, with a high of 38.4% in 2012, and were stable in the past three years.

### **Condom- and non-condom-based risk-reduction strategies**

Detailed analyses of the sexual, risk and risk reduction practices of gay men show a shift away from consistent condom use to non-condom-based and potentially riskier HIV prevention strategies. While consistent condom use remains the most practiced risk reduction strategy among HIV negative men (32% in 2013, down from 35% in 2004), consistent condom use steeply declined and is no longer the main risk reduction strategy among HIV-positive men with undetectable viral load (from 30% in 2004 to 17% in 2013); among HIV-positive men with undetectable viral load consistent condom use also decreased steeply (from 31% in 2004 to 23% in 2013).

### **Perceptions of HIV pre-exposure prophylaxis (PrEP) among gay and bisexual men**

To monitor interest in the use of PrEP, which is becoming available in Australia through demonstration projects, we are undertaking periodic surveys of HIV-negative and untested gay men's beliefs, attitudes and practices regarding PrEP. Comparison of online surveys undertaken in 2011 and 2013, shows that the proportion of men interested in using PrEP has decreased (from 28% to 23%). The factors associated with interest in taking PrEP have remained the same and include younger age, having had HIV-positive partners, perceiving themselves to be at risk of HIV, having previously taken post-exposure prophylaxis and having fewer concerns about side effects. Findings suggest that interest in using PrEP is concentrated among HIV-negative and untested men who are at increased risk of HIV.

### **HIV and STI testing among gay men**

#### **Ever and recent HIV testing**

Over the past ten years, declines have been observed in the proportion of participants in the GCPS reporting having ever tested for HIV (from 89.9% in 2004 to 87.0% in 2013).

This decreasing trend has been significant across participating states and territories, with the exception of Perth where rates remained stable. Rates of having ever tested for HIV were stable in the past three years, except in Canberra and Melbourne where declines continued.

Around 60% of non-HIV-positive GCPS participants (including those who had never tested for HIV in the denominator) reported having had at least one HIV test in the preceding 12 months. While having slightly declined over the past ten years, this proportion was stable in the past three years. Also, while 10-year trends illustrated a significant decline nationally, in Adelaide and Sydney in particular, proportions of men who reported an HIV test in the past 12 months increased in Canberra and Melbourne. Rates remained stable in Perth and Queensland.

### **Comprehensive STI testing**

The proportion of participants in the GCPS who reported having at least four different tests for STIs (i.e., throat swab, anal swab, urine sample and blood test other than for HIV) in the 12 months prior to survey increased from 17.8% in 2004 to 39.5% in 2013. This increasing trend in comprehensive STI testing has been observed in all participating states and territories. In the past three years, a significant increase has been observed in Queensland only.

### **Factors associated with comprehensive sexual health testing among gay men**

HIV-positive men are substantially more likely than HIV-negative and HIV status unknown men to report comprehensive STI testing, excluding HIV testing. Irrespective of HIV status, comprehensive testing is more commonly reported by men who had condomless anal intercourse with casual partners and men with higher numbers of partners, which is consistent with current testing guidelines (STIGMA, 2014).

### **Identifying undiagnosed HIV infection among Australian gay men**

To contribute to improving the estimation of gay men unaware of being HIV infected, we are offering HIV screening and confirmatory testing, if required, to participants in the GCPS. To date 10.0% of men testing HIV positive have been identified with previously undiagnosed HIV infection. This is a much lower level of undiagnosed infection than was found in smaller scale anonymous prevalence studies previously conducted in Brisbane and Melbourne (Birrell, et al., 2010; Pedrana, Hellard, Wilson, Guy, & Stoové, 2012).

### **Sexual health of young people**

#### **Sexual health and relationships in young Aboriginal and Torres Strait Islander people**

The GOANNA project surveyed 2,877 Indigenous people aged 16-29 years. Knowledge about STI and BBV transmission and treatment was generally good although specific areas of knowledge need attention; knowledge about chlamydia in particular was poor. Also, men reported less overall knowledge than women, and younger participants were less knowledgeable than older participants. Most participants (>80%) reported having ever had sexual intercourse, and just over a third (37%) had always used condoms with their sexual partners in the last year. STI testing coverage was generally good, with 61% of participants reporting that they had ever been tested for an STI; 15% of participants reported that they had ever been diagnosed with an STI, most commonly chlamydia.

#### **Sexual health knowledge, attitudes and practices among young people**

A sample of 754 young people from New South Wales aged 16-26 years completed an online survey, of whom two thirds (66.6%) reported being sexually active. Participating young people overall had only moderate STI knowledge. Knowledge of STI transmission was generally good, but knowledge of the consequences of having an STI was poor. Furthermore, while 62.2% of the sexually active participants reported having had unprotected intercourse with regular and/or casual partners in the 12 months prior to the survey, only 44.4% of sexually active participants had ever tested for STIs, of whom three quarters had tested in the last 12 months. Findings further indicate that a range of social-cognitive factors play a role in young people's condom use and STI testing, which need to be addressed for sexual health promotion to be effective.

## Evaluating the influence of sexual health messaging for young people attending a music festival in NSW

The effect of a comprehensive sexual health promotion initiative targeting young people at a music festival in New South Wales was assessed through an online survey conducted three months after the event. Preliminary results based on a sample of 357 young people who had attended the music festival show that the intervention was effective in motivating young people to adopt sexual health behaviours and that there are clear benefits in exposing young people to multiple intervention components.

## Living with HIV

Nationally, the proportion of HIV-positive men recruited into the GCPS has been stable around 15% between 2004 and 2013. It is however possible the GCPS under-recruit HIV-positive gay men in some states or territories.

## Antiretroviral treatment and viral load among HIV-positive gay men

Nationally, in 2013 76.4% of HIV-positive gay men in the GCPS reported being on antiretroviral treatment (ART) at the time of the survey, and ART uptake had increased significantly over the last ten years, from 61.9% in 2004. This increase over the ten-year period seems consistent across the participating states and territories. In the last three years, an increasing trend has been observed in Queensland and Sydney, but not in Melbourne, where the proportion of HIV-positive men on ART declined.

The proportion of HIV-positive men reporting an undetectable viral load at the time of the survey, regardless of ART use or non-use, has increased substantially over the past decade in the three eastern states, from 56.5% in 2004 to 73.6% in 2013. This increasing trend has stabilised in the past three years.

## Uptake of antiretroviral treatment and treatment decision-making

ART prescribers participating in an online survey undertaken in 2012 on average reported that 70%-80% of all their HIV-positive patients were receiving ART. Prescribers also indicated that the health benefits for their individual patients were their most important concern in recommending initiating ART. A second survey undertaken in 2013 found changes in prescribers' attitudes and practices regarding ART initiation compared to the 2012 survey, with prescribers increasingly favouring earlier initiation of ART.

To identify key clinical, personal, social and structural barriers to treatment uptake by PLHIV, and reasons for ART non-use, group discussions were held with HIV treatment officers (n=11), who identified a number of challenges in people making a transition to taking daily ART. Furthermore, in-depth interviews were conducted across Australia with people living with HIV, who were not currently taking ART (n=27). These interviews provide rich descriptions of the perspective of affected individuals and enable a comprehensive understanding of the reasons for deferring or avoiding ART. An online survey of adult people living with HIV living in Australia will be launched at the end of 2014 to assess and compare beliefs and concerns about ART between PLHIV who are currently taking ART, those who are ART experienced but not currently taking ART, and those who are ART naive.

## Hepatitis C testing, knowledge and risk practice among gay men

Gay men and other men who have sex with men are at a heightened risk of hepatitis C virus (HCV) infection via both drug use and sexual risk practices. Of 474 gay and bisexual men participating in a national online survey examining social issues related to hepatitis C, 32% of respondents were HIV-positive, 3% were HCV-positive and 9% were HIV/HCV co-infected. Levels of hepatitis C testing were high (80% had ever been tested and 58% reported testing in the previous 12 months), but knowledge about hepatitis C and its treatment was moderate. Furthermore, 15% reported injecting drug use in the previous six months and 41% of injectors reported reusing and passing on needles, syringes and other injecting equipment in the previous six months.

## YouMe&HIV: Serodiscordant couples in a changing epidemic

To understand how the HIV "treatment-revolution" shapes the lives of serodiscordant gay and heterosexual couples, in-depth interviews were conducted with 36 participants in metropolitan and regional New South Wales. All couples were aware of the effects of treatment on viral load and infectiousness, and the use of ART for prevention.

For many participants, treatment was key to serodiscordant relationships because it enabled a sense of sexual safety. The picture of serodiscordant relationships emerging in the study is one of both partners' considerable commitment to, and care for, each other's well-being.

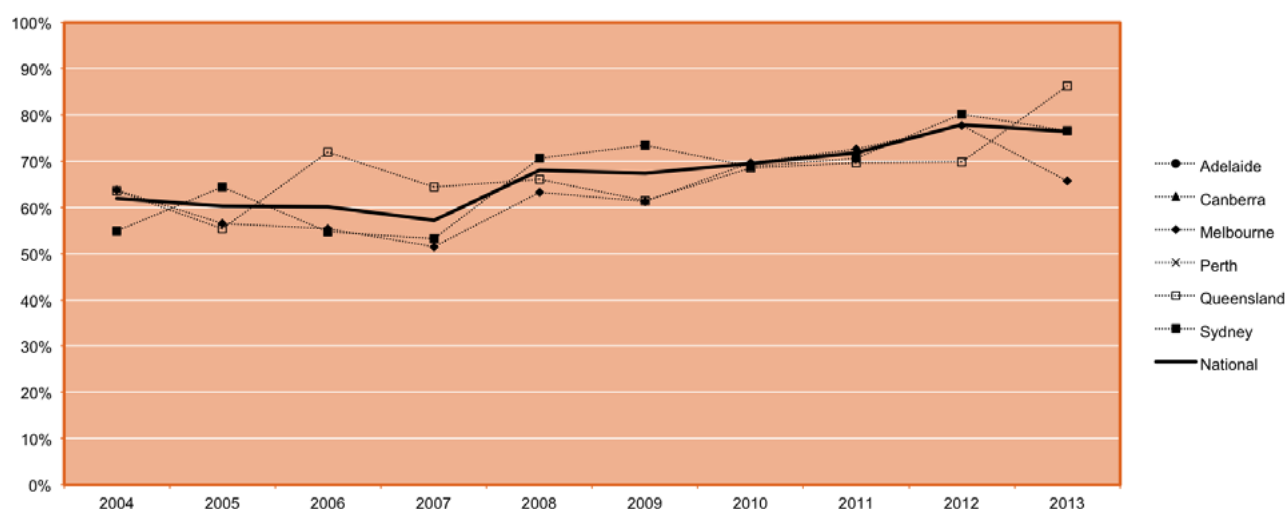


Figure 13: HIV-positive men on antiretroviral treatment: GCPS, 2004-2013

## Drug use, risks, and harm reduction

### Drug use and injection by participants in Gay Community Periodic Surveys

Amyl nitrite is the most commonly used drug by gay men in the GCPs. The proportion of men reporting the use of amyl nitrite has remained stable over the last decade, and was used by around 37% in the six months preceding the survey. The use of cocaine has also stabilised at around 10% of men. The use of other recreational drugs, including cannabis, ecstasy and amphetamines, has declined since 2004. In contrast, the proportion of men reporting using erectile dysfunction medication, such as Viagra, has increased over the ten-year period, from 15.6% in 2004 to 23.0% in 2013. In the past three years, reported usage of all substances has remained stable, except for declining ecstasy use.

Injecting drug use is more commonly reported among gay men than in the general population. However, the proportion of gay men reporting any injecting has gradually declined over time. Nationally, the proportion of gay men reporting any drug injection in the six months prior to survey has fallen (from 8% in 2004 to 5% in 2013).

### Vulnerable young people in inner-city areas who use alcohol and other drugs

CSRH, in collaboration with Turning Point Alcohol and Drug Centre, is conducting a study that looks at police and their diversion practices in relation to young substance users, identify opportunities to improve young people's engagement in diversion, and produce training resources to support police in their diversion practices. The project uses a mixed method design, combining analysis of existing survey data in New South Wales and Victoria with newly conducted in-depth interviews with police, young substance users aged 16-24 years, and staff of youth-focused alcohol and drug services.

### Hepatitis C knowledge and exposure to injecting drug use among young people

A sample of 747 young people aged 16-26 living in New South Wales participated in an online survey of knowledge about hepatitis C and exposure to injecting drug use. While 40% of respondents reported illicit drug use in the previous 12 months, only 1% reported having ever injected drugs (1%); 11% reported exposure to injecting in the previous 12 months, either by having friends or a partner who injected, or having been offered drugs to inject. Respondents generally had moderate to good levels of knowledge about hepatitis C transmission and its health consequences. Hepatitis C knowledge among respondents who had been exposed to injecting did not differ from that of those who had not. Importantly, the findings suggest online advertising, mostly via Facebook, was not successful in recruiting young people at risk of transitioning to injecting, and other sampling methods need to be explored to capture this at-risk population group.

### Perceived discrimination and injecting risk among people who inject drugs attending Needle and Syringe Programs in Sydney

Data from a sample of 236 six participants recruited from eight NSP sites in Western Sydney were used to investigate a potential association between perceived discrimination from health workers in needle and syringe programs (NSPs) and increased engagement in injecting risk practices. Participants perceiving more discrimination from NSP staff were more likely to share or reuse a needle or syringe in the last month. Sharing of injecting equipment was not associated with perceived discrimination from health care workers who were not from NSPs and no significant relationship was found between frequency of NSP use per se and perceived stigma and discrimination.

## Prevention and treatment of viral hepatitis

### Understanding and preventing hepatitis C in sexual partnerships

Epidemiological evidence shows that sharing of injecting equipment is high among sexual partners, and this project therefore focuses on couples as the site of hepatitis C risk and prevention. A total of 80 people have been interviewed (40 in New South Wales and 40 in Victoria), representing couples in which both partners are hepatitis C positive, both are hepatitis C negative or in which one partner has hepatitis C and the other does not. Data analysis is underway, investigating obstacles that couples experience in discussing and acting on hepatitis C prevention advice in sexual partnerships, and identifying and documenting effective modes of negotiation and strategies employed around hepatitis C prevention in sexual partnerships.

### Delivery of hepatitis C care and treatment for Aboriginal people

Interviews were conducted with over 200 Aboriginal people living with hepatitis C who reported significant levels of perceived stigma in relation to hepatitis C and Aboriginality. Participants had received little information upon diagnosis to support them in living with and managing hepatitis C, and they chose a range of services, Aboriginal community controlled as well as mainstream, for their hepatitis C care.

### Discrimination by health care workers versus discrimination by others: Countervailing forces on HCV treatment intentions

Stigma and discrimination by health care workers towards people with hepatitis C is widely and generally thought to have a negative impact on treatment uptake and retention. Using a social identity theory approach, this study hypothesised that hepatitis C-related discrimination may have different impacts, depending on whether it is directed specifically at the self or one's social group more broadly, and whether it is expected or experienced. Findings in a sample of 416 people in New South Wales who acquired hepatitis C from injecting drug use showed that people who perceive hepatitis C-related stigma directed at the self are motivated to initiate hepatitis C treatment to potentially alleviate the stigma, and more so than people who perceive stigma directed at the social group of people with hepatitis C. People who experienced discrimination from a health worker were less motivated to take up hepatitis C treatment in the future.

### Mental health support workers' attitudes towards hepatitis C and injecting drug use among clients with a mental illness

People with a mental illness and hepatitis C may face double stigma, and a study was consequently undertaken with people with a mental illness and support workers to assess the impact of hepatitis C-related stigma on the health outcomes of people with a mental illness. The study documents that there are substantial gaps in the knowledge of support workers about hepatitis C transmission and treatment, and that increased knowledge about hepatitis C is associated with more positive attitudes towards people who inject drugs. These attitudes were related to support workers' comfort regarding working in the client's home, which is an important component of community outreach services.



# 1. Introduction



## 1.1 About the report

John de Wit

This 2014 Annual Report Trends in Behaviour is the 16th in our series of annual publications reviewing behavioural and social research findings which inform responses to human immunodeficiency virus (HIV), viral hepatitis and other sexually transmissible infections (STIs) in Australia. The report aims to make critical contributions to the development and evaluation of policies, programs and services regarding the prevention, treatment, care and support for affected individuals and communities.

This report draws on a selection of behavioural and social research undertaken by CSRH and presents findings of relevance to responses for various affected population groups, including people living with HIV and/or hepatitis C, gay men and other men who have sex with men, people who inject drugs, and young people. The research documented in this report is in particular concerned with assessing trends over time and highlighting key issues. In addition, findings from studies which inform understanding of behavioural trends and the evolving needs and responses of affected individuals and communities are also included. The report further highlights new or planned research to inform the Australian response to bloodborne viruses (BBVs) and STIs.

**Sixth National HIV Strategy 2010–2013**

Incidence of HIV infection	2.1–2.6, S2, 3.1–3.5, S3, 5.1, 5.2, 5.4, 5.5, S5, 8
Proportion of gay men who engaged in UAIC and in seroconcordant UAIC (previous six months)	2.1, 2.3, 2.4, 8
Proportion of people who inject drugs who reused another person's used needle and syringe (last month)	5.3, 6.1, 6.3, 6.4, S6, 7.1, 7.5, S7, 8
Proportion of people receiving antiretroviral treatment for HIV infection whose viral load is undetectable	5.1, 5.2, 5.5, 8
Proportion of all PLHIV receiving antiretroviral treatment, including PLHIV with CD4 count less than 500 and less than 250 not receiving antiretroviral treatment	5.1, 5.2, 5.5, 8
Proportion of gay men at higher risk of HIV infection who have not been tested for HIV in the previous 12 months	3.1–3.5, S3, 8
Proportion of new cases of newly diagnosed HIV infection that are a late diagnosis (CD4 cell count < 200)	3.1, 3.4, S3, 8
Proportion of people with HIV who report their general health status and wellbeing as excellent or good	5.1, 5.2, 5.4, 5.5, 8

**Second National STI Strategy 2010–2013**

Incidence of gonorrhea, infectious syphilis and chlamydia	3.2, 3.3, 3.5, 4.1–4.4, S4, 7.5
Proportion of 16–25 year olds receiving chlamydia test (previous 12 months)	3.2, 3.3, 3.5, 4.1–4.4, S4, 7.5
Proportion of secondary school students giving correct answers to STI knowledge questions	4.1–4.4, S4
Proportion of 16–25 year olds attending general practice who have a chlamydia test (previous 12 months)	3.2, 4.1–4.4, S4

**Third National Hepatitis C Strategy 2010–2013**

Incidence of hepatitis C	4.1, 5.3, 6.1, 6.3, 6.4, S6, 7.1, 7.5, S7, 8
Per capita rates of needles and syringes distributed in the public and pharmacy sector (previous 12 months)	4.1, 5.3, 6.1, 6.3, 6.4, S6, 7.1, 7.5, S7, 8
Proportion of people who inject drugs and who report reusing another person's used needle and syringe (last month)	4.1, 5.3, 6.1, 6.3, 6.4, S6, 7.1, 7.5, S7, 8
Estimated number of people with hepatitis C infection by stage of liver disease (F0/1, F2/3, cirrhosis)	
Proportion of people with chronic hepatitis C dispensed drugs for their infection through the HSD program (previous 12 months)	5.3, 6.5, 7.2–7.4, 8
Proportion of people with hepatitis C who report discrimination in healthcare settings	6.2, 6.4, 6.5, S6, 7.2–7.5, S7, 8

**National Hepatitis B Strategy 2010–2013**

Incidence of hepatitis B	3.2, 4.1, 4.2
Coverage of hepatitis B vaccination among children and adolescents	3.2, 4.1, 4.2, 7.5
Estimated proportion of people with chronic hepatitis B who have not been diagnosed	3.2, 4.1, 4.2, 7.5
Notifications of acute and unspecified hepatitis	
Proportion of people with chronic hepatitis B who meet the criteria for hepatocellular carcinoma screening who are receiving annual screening	
Incidence of hepatocellular carcinoma attributed to hepatitis B	
Proportion of people with chronic hepatitis B dispensed drugs through for hepatitis b infection the HSD program	

**Third National Aboriginal and Torres Strait Islander Blood Borne Viruses and Sexually Transmissible Infections Strategy**

Coverage of hepatitis B vaccination among ATSI children and adolescents	4.1, 7.5
Incidence of infectious syphilis in Aboriginal and Torres Strait Islander people	4.1, 7.5
Proportion of newly diagnosed HIV and newly diagnosed hepatitis C caused by injecting drug use in Aboriginal and Torres Strait Islander people	S6, 7.5
Proportion of young Aboriginal and Torres Strait Islander people who report having had an STI test (previous 12 months)	4.1, 7.5
Proportion of young Aboriginal and Torres Strait Islander people receiving a chlamydia and gonorrhoea test (previous 12 months)	4.1, 7.5
Proportion of Aboriginal and Torres Strait Islander people giving correct answers to knowledge questions on STIs and BBVs	4.1, 7.5
Proportion of Aboriginal and Torres Strait Islander people with HIV receiving antiretroviral treatment	5.1, 5.2, 5.5, 8
Proportion of ATSI people with chronic hepatitis C who are dispensed drugs for hepatitis C through the HSD program (previous 12 months)	7.2, 7.5
Proportion of ATSI people with chronic hepatitis B who are dispensed drugs for hepatitis B through the HSD program (previous 12 months)	
Number of ATSI people registered under the National Registration program	

## 1.2 Progress indicators

John de Wit

The research presented in this report is mostly concerned with trends until 2013 and contributes evidence in relation to the indicators specified in the National Surveillance and Monitoring Plan to inform progress in achieving the goals and objectives of the Australian National Strategies 2010–2013 regarding HIV, sexually transmissible infections, hepatitis C, hepatitis B, and blood borne viruses and sexually transmissible infections in Aboriginal and Torres Strait Islander peoples. The accompanying overview specifies where information regarding these indicators can be found in this report.

Importantly, the findings of the research conducted by CSRH are not limited to reporting against numerical indicators. Our research also encompasses generating critical knowledge and evidence to aid interpretation of indicator data; providing early indications of emerging practices or factors shaping practices; strengthening understanding of trends and differences, particularly in relation to the individual and social factors that shape experiences, practices and policies; and investigating the efficacy of novel and innovative responses. These broader research findings provide vital information guiding appropriate services, programs and policies which are based in sound social and behavioural theory and research evidence, and effectively respond to the priorities in the National Strategies.

## 1.3 Gay Community Periodic Surveys

Limin Mao, Martin Holt and John de Wit

Many of the analyses contained in this report focus on trends in behaviour among gay men and other men who have sex with men and are based on data collected in the Gay Community Periodic Surveys (GCPS). The background to these surveys is presented below.

## Approach to data analyses

Initiated in 1996, the GCPS are conducted in the capital cities and other densely populated areas of Australia where gay men congregate: Adelaide, Canberra, Melbourne, Perth, Queensland (Brisbane, Cairns and the Gold Coast) and Sydney.

In this year's report, wherever possible, we report data from a ten-year period (2004–2013). We have tested for linear trends over the full ten-year period and the most recent three-year period (2011–2013), where data are available. When there is a statistically significant change over time (at the  $p < 0.05$  level of significance), the direction of the change is indicated by an up (↑) or down (↓) symbol. When there is no significant change over time, this is described as nonsignificant (ns). When statistical tests have not been performed this is indicated by a dash (–).

In the 2010 Annual Report of Trends in Behaviour, we introduced age standardisation of GCPS data, with reference to adult male population data published by the Australian Bureau of Statistics, and weighting of the data by recruitment source to allow for sampling variations (Hopwood, Holt, Treloar, & de Wit, 2010). These adjustments allow us to be more confident in analysing trends over time and in comparing trends between states and territories. We have also calculated a national trend for key indicators presented below, so that state and territory data can be compared to a 'national average'. All data from the GCPS presented as of Chapter 2 have been adjusted for age and recruitment source.

**Table 1: Recruitment summary by state or territory: GCPS, 2004-2013**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Total n (%)
Adelaide		10.4		8.3		13.7	11.8	9.1	10.1		4666 ( 6.7)
Canberra			4.0			4.4		3.5		2.8	1035 ( 1.5)
Melbourne	30.0	29.8	28.1	32.3	32.6	30.2	27.8	24.8	26.2	38.0	20731 (29.7)
Perth	15.5		13.1		12.0		10.5		10.4		4426 ( 6.3)
Queensland <sup>1</sup>	25.5	22.9	18.1	22.4	19.9	18.5	18.9	21.5	17.0	17.9	14055 (20.1)
Sydney <sup>2</sup>	29.1	36.9	36.7	37.0	35.6	33.2	31.0	41.1	36.3	41.3	24944 (35.7)
Total n	6551	6045	7067	6329	6251	7067	8771	7774	7841	6161	69857 (100)

<sup>1</sup> Includes men recruited from Brisbane, Cairns and the Gold Coast.

<sup>2</sup> Only includes the February round of recruitment.

**Table 2: Recruitment summary by type of venue or event: GCPS, 2004-2013**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Total n (%)
Gay community events/festivals	57.8	51.1	57.3	55.8	57.7	51.8	56.1	50.0	49.3	52.2	37606 (53.8)
Gay social venues <sup>1</sup>	23.6	29.1	25.4	27.0	23.3	29.9	27.9	34.0	32.4	28.5	19754 (28.3)
Sex-on-premises venues	13.2	14.7	12.4	10.6	13.0	12.5	11.2	10.3	13.1	13.1	8614 (12.3)
Clinics and general practices	5.4	5.2	4.9	6.6	5.9	5.9	4.8	5.7	5.2	6.2	3883 (5.6)
Total n	6551	6045	7067	6329	6251	7067	8771	7774	7841	6161	69857 (100)

<sup>1</sup> Includes bars, clubs, gyms and small events.



Readers should bear in mind that historically there have been some variations between states and territories in the phrasing of survey questions. While most key indicators have been assessed using the same questions for some time, for other indicators there may be some remaining variability in the data due to differences in measurement. Since 2010, the same questionnaires have been used in each participating state and territory, reducing the likelihood that any observed differences between states and territories are due to differences in measurement.

### Sample characteristics

Using unadjusted data from the GCPS, Table 1 shows the total number of men who participated each year between 2004 and 2013, the proportion recruited from each state or territory each year, and the total number of men recruited from each state or territory over the ten year period. These data show that the Sydney survey typically attracts the largest number of participants, followed by Melbourne.

The GCPS deliberately target men who are socially and sexually involved with gay men by recruiting participants at gay venues and events, in particular large gay festivals, such

as Adelaide's Feast Festival, Melbourne's Midsumma Festival, and Sydney's Gay and Lesbian Mardi Gras. Using unadjusted data, Table 2 shows the proportions of men recruited from different venues and events during the 2004-2013 reporting period. The majority of men (over half) are recruited from gay community festivals and just over a quarter from social venues such as gay bars, clubs and gyms. Smaller proportions of men are recruited from sex-on-premises venues (gay saunas and sex clubs), sexual health clinics and general practices which have a substantial gay clientele (just over 10% and 5%, respectively).

In 2013, the majority of men recruited into the Gay Community Periodic Surveys was very likely to identify as gay (over 85%) and have an Anglo-Australian background (over 65%); see the unadjusted data presented in Table 3. Over the last ten years, the proportion of gay-identified men has gradually declined. The age profile of the GCPS has also changed over the last decade, with a gradual decline in the proportions of men aged under 25 and in their thirties, and a substantial increase in the proportion of men aged 50 or above. The mean age of men recruited into the surveys has gradually increased from about 35 years to 37 years during the reporting period.

**Table 3: Overview of men recruited into the GPS, 2004-2013**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall Trend	Trend in last 3 years
Gay or homosexual	88.0	88.0	89.3	88.8	88.3	86.6	86.8	87.5	87.0	87.8	↓	ns
Anglo-Australian	66.4	65.9	65.4	68.2	67.5	66.6	69.4	67.7	68.5	66.8	↑	ns
<25 years old	18.3	17.7	18.7	17.9	18.5	18.8	20.9	17.2	17.9	15.2	↓	↓
30-39 years old	37.5	36.6	34.3	32.1	31.4	32.1	26.7	28.2	27.7	29.0	↓	ns
>50 years old	9.1	9.2	10.4	11.7	12.2	12.3	13.4	14.0	15.1	15.7	↑	↑
Mean age	34.7	34.8	35.0	35.6	35.8	35.5	35.5	36.2	36.5	36.9		
(+ SD)	(10.5)	(10.4)	(10.9)	(11.2)	(11.4)	(11.5)	(12.0)	(11.9)	(12.4)	(12.2)		

## 2. Sexual practices and risk in gay men



### 2.1 Male partners and safe sex

Limin Mao, Martin Holt and John de Wit

#### Number of male partners

Over the last ten years there has been a significant reduction across Australia in the proportion of men reporting more than ten male sex partners in the six months prior to the survey (see Table 4 and Figure 1). Nationally, this proportion has declined from 31.5% in 2004 to 24.5% in 2013, but has been relatively stable in the last three years. This ten-year decline has been consistent across states and territories. In the last three years, this indicator appears to have stabilised in most states and territories, except Canberra and Melbourne, where it has declined.

#### No condomless anal intercourse with male partners

Table 5 and Figure 2 show the proportions of men reporting no condomless anal intercourse (CLAI) with a male sex partner in the six months prior to the survey. Men who had no CLAI are presumed to be at little or no risk for HIV infection through male-to-male sex, while for men who engage in CLAI the risk of infection may be mitigated by other risk reduction strategies. Nationally, the proportion of men who report no CLAI has been relatively stable during the last ten years at about 52% of all GCPs participants. The proportion of men reporting no CLAI

has increased in Adelaide over the last decade and declined in Perth. In the last three years, the proportion of men who had no CLAI has increased in Canberra and Melbourne, but declined in Queensland. Across jurisdictions, HIV-positive men are significantly less likely than non-HIV-positive men to report no CLAI (46% vs. 58%; 10-year mean proportion 2004-13; unadjusted data).

### 2.2 Risk and risk reduction with regular male partners

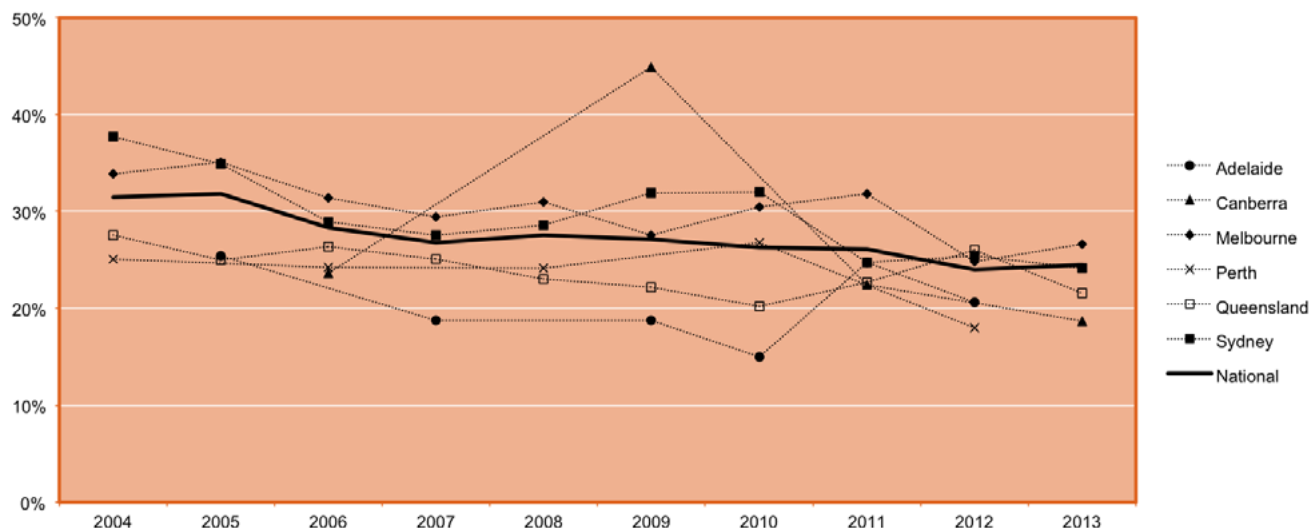
Limin Mao, Martin Holt and John de Wit

#### Condomless anal intercourse with regular male partners

Condomless anal intercourse is more likely to occur with regular partners (CLAIR) than with casual partners (CLAIC). Approximately 70% of gay men who participated in the GCPs have a regular male partner. The national trend depicted in Table 6 and Figure 3 shows that the proportion of participants with regular partners reporting any CLAIR has been stable over the last ten years at just over 50%. Analyses of trends over the last ten years in the separate states and territories show that the rate of CLAIR has risen in Canberra, Perth and Queensland, but has remained stable in the other jurisdictions. Over the last three years, the proportion of men reporting CLAIR has increased in Queensland, decreased in Melbourne and was stable in the other jurisdictions.

**Table 4: Men who reported more than ten male sex partners in the six months prior to the survey: GCPs, 2004-2013**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
Adelaide		25.4		18.8		18.8	15.0	24.7	20.6		↓	-
Canberra			23.6			44.9		22.4		18.7	↓	↓
Melbourne	33.9	35.1	31.4	29.4	31.0	27.6	30.5	31.8	24.8	26.6	↓	↓
Perth	25.1		24.2		24.1		26.8		18.0		↓	-
Queensland	27.6	25.0	26.4	25.1	23.0	22.2	20.2	22.7	26.0	21.6	↓	ns
Sydney	37.7	34.9	28.9	27.6	28.6	31.9	32.0	24.7	25.4	24.1	↓	ns
All six states/ territories	31.5	31.8	28.3	26.8	27.6	27.1	26.3	26.1	24.0	24.5	↓	ns



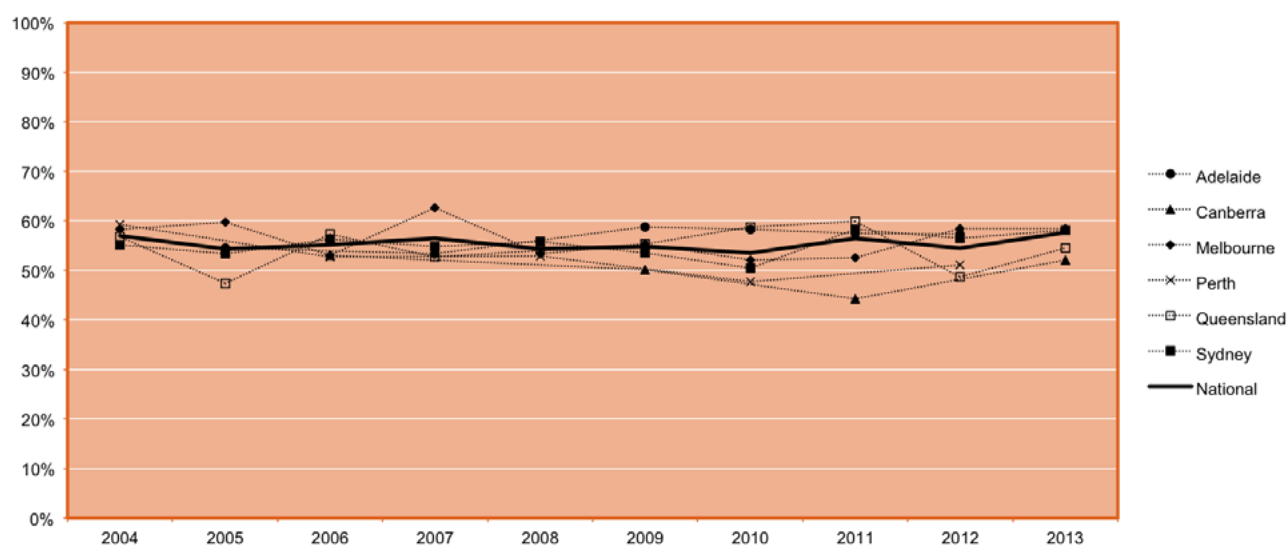
**Figure 1: Men who reported more than ten male sex partners in the six months prior to the survey: GCPS, 2004-2013**

A comparison of trends in CLAIR by HIV status (unadjusted data) shows significant increases in HIV-positive men (from 50% in 2004 to 59% in 2013;  $p < 0.01$ ), while rates have been stable among non-HIV-positive men (52% in 2004, 51% in 2013). Furthermore, in recent years, CLAIR has been more likely to occur among HIV-positive than non-HIV-positive men (the reverse was true in earlier years). In terms of age

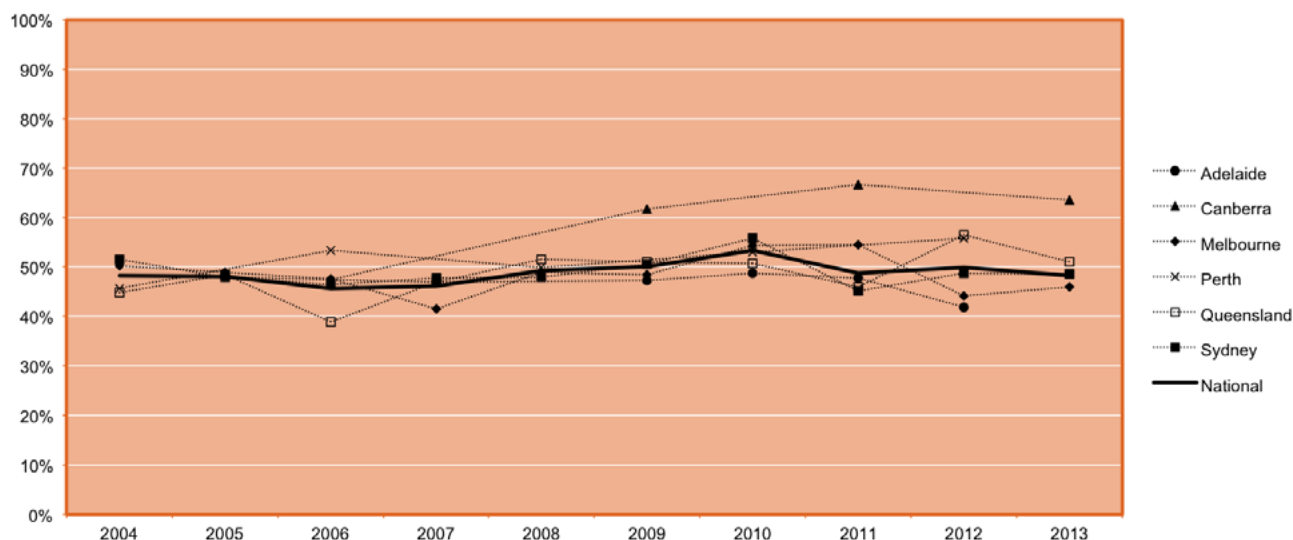
differences (unadjusted data), CLAIR increased most among men under 25 years of age, especially from 2005 to 2010 (from 45% in 2005 to 59% in 2010;  $p < 0.001$ ). Increases were also significant, but less marked, among men aged between 45 and 49 years (from 50% in 2004 to 54% in 2013;  $p < 0.05$ ).

**Table 5: Men who reported no CLAI with sex partners in the six months prior to the survey: GCPS, 2004-2013**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
Adelaide		54.6		53.4		58.8	58.2	57.4	57.3		↑	-
Canberra			53.0			50.1		44.3		52.1	ns	↑
Melbourne	58.3	59.7	53.1	62.7	53.4	55.3	52.1	52.5	58.4	58.4	ns	↑
Perth	59.2		52.8		52.9		47.7		51.1		↓	-
Queensland	56.8	47.3	57.3	52.7	54.0	55.3	58.7	59.9	48.6	54.5	ns	↓
Sydney	55.1	53.4	56.3	54.9	55.9	53.5	50.4	58.2	56.5	58.1	ns	ns
All six states/ territories	56.9	54.4	55.1	56.5	54.3	54.9	53.5	56.4	54.5	57.6	ns	ns



**Figure 2: Men who reported no CLAIR with male sex partners in the six months prior to the survey: GCPS, 2004-2013**



**Figure 3: Men with regular partners who reported any CLAIR in the six months prior to the survey: GCPS, 2004-2013**

### Condomless anal intercourse with serodiscordant or serononconcordant partners

CLAIR presents a risk of HIV transmission to regular partners when the partners have different HIV status (serodiscordance), or when either or both partners have an unknown HIV status (serononconcordance). Around one-third of gay men in the GCPS who have a regular partner report that their partner is serononconcordant or serodiscordant, with more men reporting that they have an unknown status partner than a known serodiscordant partner. Table 7 and Figure 4 show the rates of CLAIR reported by men in serononconcordant or serodiscordant relationships during the reporting period. It is important to note that the smaller surveys (Adelaide, Canberra and Perth) have been omitted from this particular analysis as the relatively small numbers of men in serononconcordant or serodiscordant relationships in these locations make the rate estimation and trend analysis unreliable. Data from these locations are, however,

included in the national rate. The rate of CLAIR reported by men in serononconcordant or serodiscordant relationships has remained relatively stable during the last ten years at around 40% of men in those relationships. The rate of serononconcordant or serodiscordant CLAIR has declined in Melbourne and Sydney, but increased in Queensland over the ten-year period, as well as in the last three years.

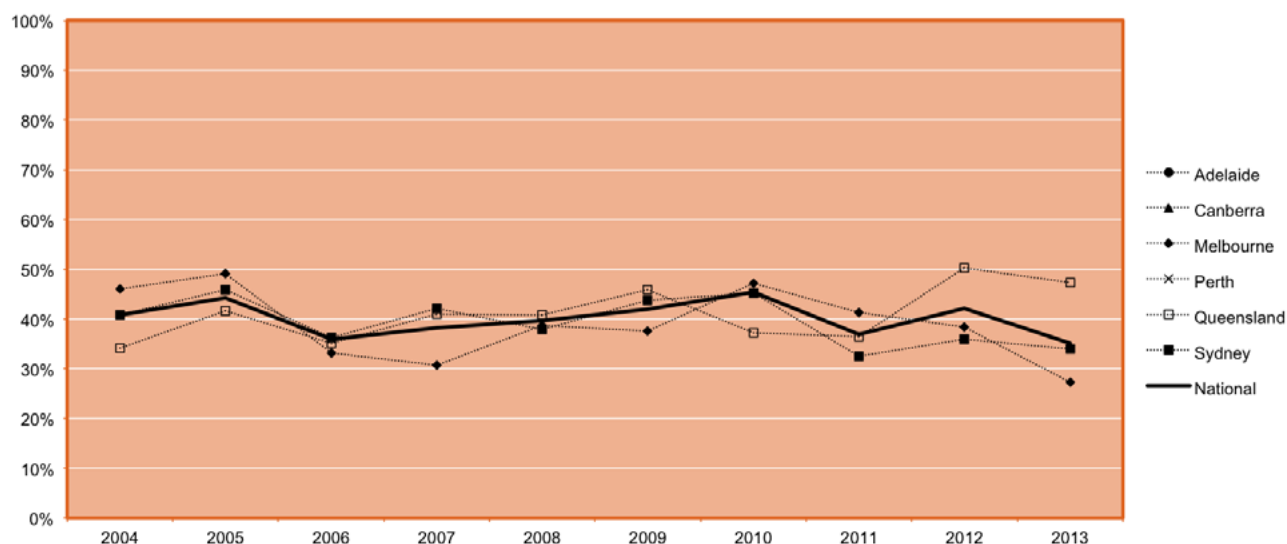
A comparison of trends by HIV status (unadjusted data) shows that CLAIR with serononconcordant or serodiscordant partners has remained stable among HIV-positive men (44%; 10-year mean proportion 2004-13). Although CLAIR with serononconcordant or serodiscordant partners has fluctuated among non-HIV-positive men, it has remained stable over the ten-year period (43%; 10-year mean proportion 2004-13). No age differences were found in relation to CLAIR.

**Table 6: Men with regular partners who reported any CLAIR in the six months prior to the survey: GCPS, 2004-2013**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
Adelaide		47.9		47.0		47.3	48.8	47.8	41.9		ns	-
Canberra			47.4			61.8		66.6		63.5	↑	ns
Melbourne	50.3	48.9	47.6	41.5	48.9	48.5	54.3	54.5	44.1	46.0	ns	↓
Perth	45.7		53.4		49.9		53.0		55.9		↑	-
Queensland	44.8	48.4	38.9	46.9	51.6	51.1	50.7	46.0	56.5	51.1	↑	↑
Sydney	51.5	48.0	46.4	47.7	48.0	50.5	55.8	45.1	48.7	48.6	ns	ns
All six states/ territories	48.3	48.1	45.6	46.1	49.3	50.0	53.4	48.8	49.9	48.2	ns	ns

**Table 7: Men with serononconcordant or serodiscordant regular partners who reported any CLAIR in the six months prior to the survey: GCPS, 2004-2013**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
Melbourne	46.1	49.2	33.2	30.8	38.7	37.6	47.1	41.3	38.4	27.3	↓	↓
Queensland	34.1	41.6	35.1	41.0	40.9	45.8	37.3	36.4	50.2	47.4	↑	↑
Sydney	40.8	45.9	36.2	42.1	37.9	43.7	45.2	32.5	36.0	34.0	↓	ns
All six states/ territories	40.8	44.2	36.0	38.2	39.7	42.0	45.3	36.9	42.1	35.1	ns	ns



**Figure 4: Men with serononconcordant or serodiscordant regular partners who reported any CLAIR in the six months prior to the survey: GCPS, 2004-2013**

**Table 7: Men with serononconcordant or serodiscordant regular partners who reported any CLAIR in the six months prior to the survey: GCPS, 2004-2013**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
Adelaide		41.9		35.4		30.6	33.1	27.7	23.7		↓	-
Canberra			41.6			44.6		38.7		34.0	↓	↓
Melbourne	37.7	38.4	37.5	28.7	38.9	33.3	32.3	34.0	26.6	35.5	↓	ns
Perth	22.2		35.5		29.6		23.7		23.4		↓	-
Queensland	32.4	36.2		37.8	41.7	39.6	25.9	27.7	37.3	33.7	↓	↑
Sydney	48.3	31.8	33.1	30.5	36.0	28.5	33.8	30.2	27.9	35.3	↓	↑
All six states/ territories	35.6	36.6	35.3	32.4	37.9	33.2	29.7	31.4	29.6	33.9	↓	ns

### Negotiated safety agreements with regular male partners

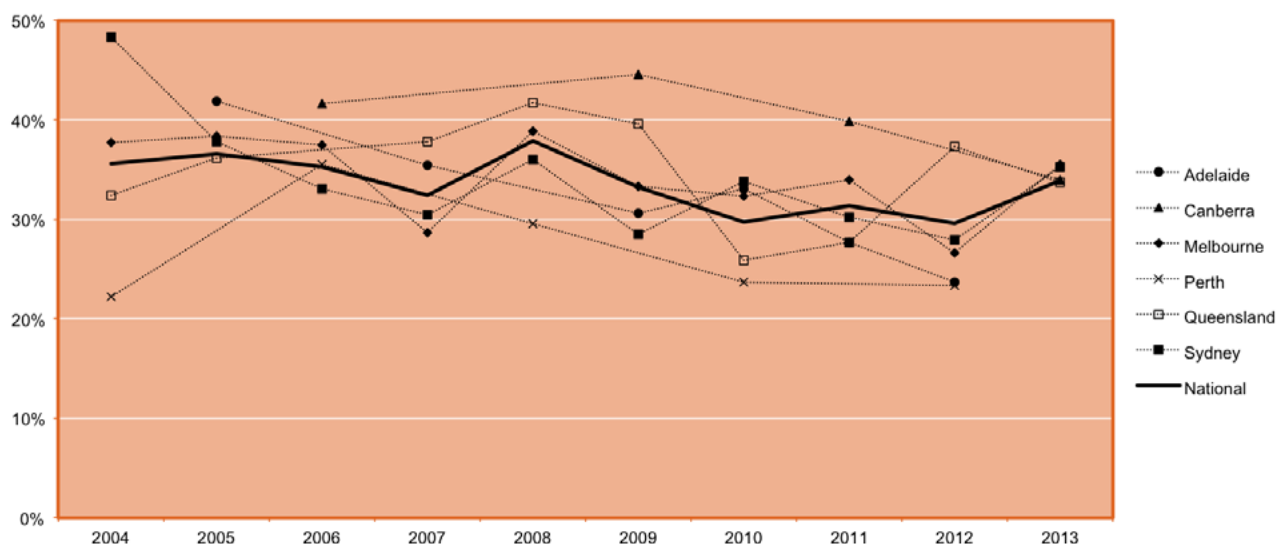
A negotiated safety agreement is defined as an explicit agreement between HIV-negative regular partners to allow CLAIR within the relationship but to avoid CLAIR with casual partners outside the relationship (Crawford, Rodden, Kippax, & Van de Ven, 2001). Negotiated safety agreements, if consistently practised by men in seronconcordant HIV-negative relationships, have been found to be relatively effective in preventing HIV transmission (Jin et al, 2009). For the analysis presented in Table 8 and Figure 5, participants were regarded as having a negotiated safety agreement if they met the following conditions: i) they were HIV-negative,

ii) they had an HIV-negative regular partner, and iii) they reported an explicit agreement with that partner to allow CLAIR with each other but to have no CLAIR with partners outside the relationship, including men who had an agreement to have no sex, no anal intercourse, or only condom-protected anal intercourse outside their relationship (Mao et al, 2011).

Nationally, the proportion of HIV-negative men with a negotiated safety agreement has declined over the last decade, and was reported by 33% of HIV-negative men in seroconcordant relationships in 2013 (see Table 8 and Figure 5). This decline in negotiated safety agreements is apparent in all states and territories over the ten-year period.

**Table 8: Negotiated safety agreements among HIV-negative men with HIV-negative regular partners: GCPS, 2004-2013**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
Adelaide		41.9		35.4		30.6	33.1	27.7	23.7		↓	-
Canberra			41.6			44.6		38.7		34.0	↓	↓
Melbourne	37.7	38.4	37.5	28.7	38.9	33.3	32.3	34.0	26.6	35.5	↓	ns
Perth	22.2		35.5		29.6		23.7		23.4		↓	-
Queensland	32.4	36.2		37.8	41.7	39.6	25.9	27.7	37.3	33.7	↓	↑
Sydney	48.3	31.8	33.1	30.5	36.0	28.5	33.8	30.2	27.9	35.3	↓	↑
All six states/ territories	35.6	36.6	35.3	32.4	37.9	33.2	29.7	31.4	29.6	33.9	↓	ns



**Figure 5: Negotiated safety agreements among HIV-negative men with HIV-negative regular partners: GCPS, 2004-2013**

The proportion with a negotiated safety agreement does, however, appear to have stabilised nationally in the last three years. In this period, the proportion of HIV-negative men with a negotiated safety agreement has increased in Queensland and Sydney but decreased in Canberra. The decline in negotiated safety agreements among HIV-negative men suggests a need to support gay men in negotiating effective agreements with their regular partners. This is important as negotiated safety is one of the few non-condom-based risk reduction strategies which could be relatively effective in preventing HIV transmission (Mao et al, 2011; Jin et al, 2009).

## 2.3 Risk and risk reduction with casual male partners

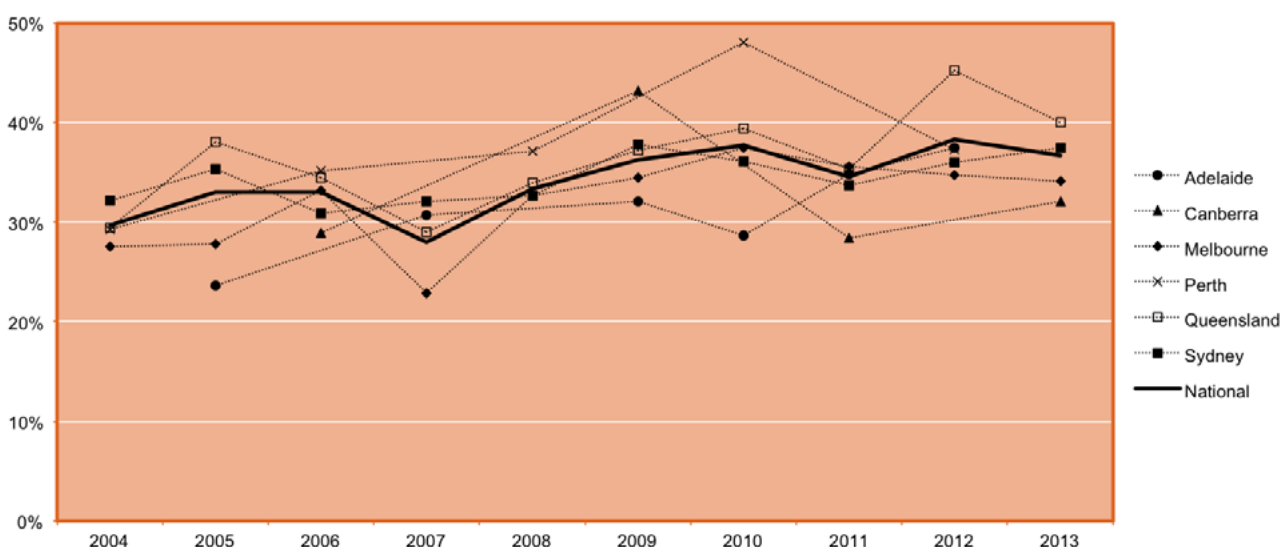
Limin Mao, Martin Holt and John de Wit

### Condomless anal intercourse with casual male partners

Condomless anal intercourse with casual partners remains one of the key drivers of HIV transmission between gay men. Table 9 and Figure 6 show the rates of CLAIC reported by men with casual partners in the GCPS. The national rate of CLAIC

has been gradually increasing over the last ten years. It is worth noting that the national CLAIC rate in 2012 (at 38.3%) is the highest figure we have seen for this indicator so far; the last ten years has therefore been a period in which we have observed increasing CLAIC rates across all participating states and territories, except for Canberra. The national rate of CLAIC has been stable over the last three years in most states and territories, except for a continued increase in Queensland.

A comparison of trends in CLAIC by HIV status (unadjusted data) shows that HIV-positive men with casual partners have become considerably more likely to report any CLAIC (from 51% in 2004 to 67% in 2013,  $p < 0.001$ ). The increase in CLAIC is less marked among non-HIV-positive men with casual partners (from 27% in 2004 to 32% in 2013,  $p < 0.001$ ). CLAIC remains more likely to be reported by HIV-positive than non-HIV-positive men. Comparison of trends in CLAIC by age (unadjusted data) shows significant increases among men under 25 years of age (from 31% in 2004 to 36% in 2013;  $p < 0.05$ ), but not in other age groups.



**Figure 6: Men with casual partners who reported any CLAIC in the six months prior to the survey: GCPS, 2004-2013**

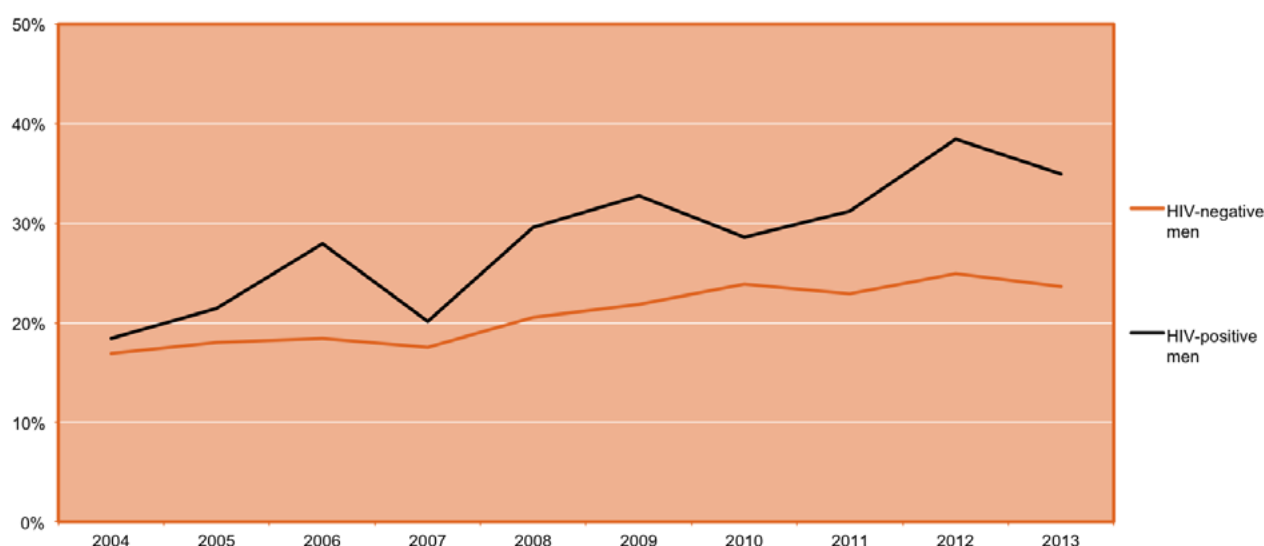


**Table 9: Men with casual partners who reported any CLAIC in the six months prior to the survey: GCPS, 2004-2013**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
Adelaide		23.6		30.7		32.1	28.7	34.8	37.5		↑	-
Canberra			28.9			43.2		28.4		32.1	ns	ns
Melbourne	27.6	27.8	33.2	22.9	32.7	34.5	37.5	35.6	34.7	34.1	↑	ns
Perth	29.3		35.2		37.1		48.1		37.3		↑	-
Queensland	29.4	38.1	34.5	29.0	34.0	37.2	39.4	35.3	45.2	40.0	↑	↑
Sydney	32.2	35.3	30.9	32.1	32.7	37.8	36.1	33.7	36.0	37.5	↑	ns
All six states/ territories	29.7	33.0	33.0	28.0	33.4	36.3	37.7	34.6	38.3	36.7	↑	ns

**Table 10: Men with casual partners who reported disclosing their HIV status to all casual partners, by HIV status of participant: GCPS, 2004-2013.**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
HIV-negative men												
Adelaide		16.6		10.7		17.6	27.5	27.7	29.3		↑	-
Canberra			25.2			21.4		23.5		29.8	↑	↑
Melbourne	12.9	17.1	18.9	13.9	22.0	20.9	20.9	17.7	20.0	18.7	↑	ns
Perth	16.7		20.9		22.3		29.1		18.4		↑	-
Queensland	19.9	17.4	14.6	19.9	20.2	26.9	26.6	27.2	36.5	28.7	↑	ns
Sydney	16.8	21.1	19.4	20.6	19.2	20.4	21.0	22.3	21.1	24.8	↑	ns
All six states/ territories	16.9	18.0	18.4	17.5	20.5	21.8	23.9	22.9	24.9	23.6	↑	ns
HIV-positive men												
All six states/ territories	18.4	21.4	27.9	20.1	29.6	32.7	28.6	31.2	38.4	34.9	↑	ns

**Figure 7: Men with casual partners who reported disclosing their HIV status to all casual partners, by HIV status of participant: GCPS, 2004-2013**

### HIV status disclosure to casual male partners

The Gay Community Periodic Surveys collect data on the disclosure of HIV status by men to their casual male partners. HIV disclosure is increasingly of interest because non-condom-based risk reduction strategies, if practised, are reliant on accurate knowledge of HIV status (Jin et al, 2009; Mao et al, 2011; Mao et al, 2006; Zablotska et al, 2009).

Table 10 and Figure 7 show the proportions of HIV-negative and HIV-positive men with casual partners who consistently disclosed their HIV status to all casual male partners. Since 2007, the same questions have been asked in all states and territories to measure participants' disclosure of HIV status to casual partners, specifically before sex. For this reason, the trend analysis for the last three years is likely to be more robust than the ten-year trend. In addition, we have only presented



the national trend in HIV-positive disclosure (see Table 10), as the numbers of HIV-positive men reporting consistent HIV disclosure in each state and territory survey are relatively small.

National trends shown in Table 10 and Figure 7 illustrate that the likelihood of consistent HIV status disclosure has substantially increased among both HIV-negative and HIV-positive men over the last decade. In 2004, fewer than one in five HIV-positive or -negative men disclosed their status to all their casual partners. Over the past decade, that proportion has increased to 30% of HIV-positive men with casual partners consistently disclosing their HIV status. Nearly a quarter (close to 23%) of HIV-negative men with casual partners reported consistent disclosure in 2013. Increases in consistent HIV

status disclosure by HIV-negative men have occurred in all states and territories over the ten-year period.

## 2.4 Condom- and non-condom-based risk-reduction strategies among gay men

Limin Mao and John de Wit

From early on in the HIV epidemic, gay men have adopted sexual practices to mitigate the risk of HIV. It began with condom use which has been promoted since the mid 1980s. Gay men today also make use of various strategies which can reduce the risk of condomless anal intercourse (Jin et al, 2009), in particular strategies drawing on knowledge of the HIV status of those involved in the sexual interaction, as well

**Table 11: Sexual practices, condom use and non-condom-based risk reduction in the six months prior to the survey: GCPS, 2004-2013 (all six states or territories, unadjusted data)**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %
<b>HIV-negative men</b>										
No sex	4.8%	5.1%	5.3%	5.2%	5.0%	6.1%	9.3%	6.9%	8.4%	7.2%
No anal sex	12.7%	11.9%	11.7%	12.7%	12.4%	12.2%	10.7%	14.2%	13.6%	14.0%
Anal intercourse always with a condom	34.6%	35.0%	34.3%	34.3%	34.6%	32.6%	28.8%	31.3%	30.6%	31.2%
CLAI only with a seroconcordant regular partner a	21.0%	20.8%	21.5%	19.1%	20.5%	21.6%	21.7%	23.6%	24.0%	23.8%
CLAI with a serononconcordant regular partner a	7.8%	8.1%	7.4%	9.1%	6.9%	6.4%	8.3%	3.2%	3.5%	3.1%
CLAI with a serodiscordant regular partner a	0.8%	0.6%	0.7%	0.8%	0.7%	0.5%	0.5%	0.9%	0.5%	0.7%
CLAI with casual partners with full HIV status disclosure b	4.1%	4.8%	5.2%	4.4%	4.8%	5.7%	6.1%	6.8%	6.9%	7.5%
CLAI with casual partners with partial HIV status disclosure b	5.8%	6.2%	5.3%	5.9%	6.7%	6.2%	6.9%	6.6%	6.7%	6.9%
CLAI with casual partners with no HIV status disclosure b	8.4%	7.6%	8.6%	8.5%	8.2%	8.9%	7.6%	6.5%	5.8%	5.6%
<b>HIV-positive men with an undetectable viral load</b>										
No sex	5.9%	5.6%	6.3%	5.0%	8.1%	6.6%	10.3%	9.2%	10.6%	11.0%
No anal sex	10.2%	9.0%	9.1%	12.7%	10.5%	10.3%	7.6%	10.6%	10.4%	9.4%
Anal intercourse always with a condom	30.0%	26.1%	30.0%	25.4%	25.6%	25.2%	23.8%	24.0%	17.9%	17.1%
CLAI only with a seroconcordant regular partner a	7.5%	7.6%	7.7%	10.7%	8.8%	7.8%	11.4%	6.8%	7.6%	8.3%
CLAI with a serononconcordant regular partner a	2.7%	5.6%	2.3%	4.0%	2.2%	1.5%	2.4%	2.3%	0.9%	1.6%
CLAI with a serodiscordant regular partner a	4.0%	5.6%	6.3%	5.0%	3.6%	4.2%	4.1%	5.0%	3.5%	5.7%
CLAI with casual partners with full HIV status disclosure b	8.5%	11.5%	14.3%	12.0%	14.1%	15.6%	13.8%	17.0%	21.8%	20.9%
CLAI with casual partners with partial HIV status disclosure b	20.8%	20.2%	15.7%	15.7%	19.8%	20.3%	19.3%	20.9%	22.2%	22.1%
CLAI with casual partners with no HIV status disclosure b	10.4%	8.7%	8.2%	9.5%	7.2%	8.5%	7.3%	4.2%	5.0%	3.9%
<b>HIV-positive men with a detectable viral load</b>										
No sex	6.4%	5.4%	4.5%	6.0%	9.1%	2.1%	8.1%	6.8%	6.3%	8.4%
No anal sex	10.0%	9.7%	5.5%	7.1%	7.1%	8.3%	5.9%	11.9%	8.4%	10.8%
Anal intercourse always with a condom	30.9%	28.3%	24.9%	23.6%	22.7%	20.7%	23.5%	22.0%	22.1%	22.9%
CLAI only with a seroconcordant regular partner a	9.1%	8.4%	11.0%	8.8%	9.7%	4.8%	9.6%	7.6%	11.6%	6.0%
CLAI with a serononconcordant regular partner a	1.8%	3.6%	4.5%	2.8%	1.9%	0.7%	0.7%	1.7%	2.1%	4.8%
CLAI with a serodiscordant regular partner a	2.3%	3.6%	2.0%	2.2%	5.2%	4.1%	2.2%	2.5%	5.3%	3.6%
CLAI with casual partners with full HIV status disclosure b	6.4%	7.2%	12.9%	15.9%	14.9%	26.9%	16.9%	11.9%	24.2%	20.5%
CLAI with casual partners with partial HIV status disclosure b	21.8%	27.1%	23.9%	25.3%	22.1%	18.6%	25.0%	27.1%	13.7%	16.9%
CLAI with casual partners with no HIV status disclosure b	11.3%	6.6%	10.9%	8.2%	7.2%	13.8%	8.1%	8.5%	6.3%	6.0%

a: no CLAIC, b: with or without CLAIR

as strategies making use of the viral load status of HIV positive partners. To better assess the risk of HIV transmission, the use of risk reduction strategies needs to be accounted for, requiring more detailed behavioural indicators to complement monitoring of condomless anal intercourse. In a recent study, we investigated a range of condom- and non-condom-based risk reduction practices among participants in the GCPS from 2007 to 2009, comparing HIV-negative men, HIV-positive men with an undetectable viral load and HIV positive men with a detectable viral load (Mao et al 2011). We now include the monitoring of various risk reduction practices as a standard component of the Annual Report of Trends in Behaviour and report over the ten-year period from 2004 to 2013.

Our original and updated analyses find that condom use continues to play an important role in gay men's sexual risk reduction practices (see Table 11 and Figure 8). However, while men reporting consistent condom use remain the largest subgroup of HIV negative men, proportions of HIV-negative men reporting consistent condom use have decreased significantly, from 35% in 2004 to 32% in 2013. Among HIV-negative men, the second-largest subgroup consists of men who have condomless anal intercourse with a regular partner (CLAIR) who is also HIV-negative. The proportion of men reporting this form of serosorting increased from 21% in 2004 to 24% in 2013.

Proportions of men reporting consistent condom use have steeply declined over the past decade among HIV-positive men with an undetectable viral load (from 30% in 2004 to 17% in 2013), as well as among HIV-positive men with a detectable viral load (from 31% in 2004 to 23% in 2013). Among HIV-positive men with an undetectable viral load, the largest subgroup of men are now those who have condomless anal intercourse with casual partners (CLAIC), preceded by HIV status disclosure to some, but not all, casual partners (21% in 2004 and 22% in 2013). Among HIV-positive men with a detectable viral load, the second-largest subgroup consisted of men who had CLAIC and consistently disclosed their HIV status to all casual sex partners, which increased from 6% in 2004 to 21% in 2013.

Taken together, these findings illustrate a shift away from consistent condom use to various non-condom-based and potentially riskier strategies. Furthermore, while the proportions of men practicing riskier forms of CLAI, including CLAI with a serodiscordant or sero-nonconcordant regular partner, have decreased among HIV-negative men (from 17.0% in 2004 to 9.4% in 2013) and HIV-positive men with an undetectable viral load (from 17.1% in 2004 to 11.2% in 2003), these remained stable among HIV-positive men with a detectable viral load (15.5% in 2004 and 14.5% in 2013).

## 2.5 The PrEPARE Project: Perceptions of HIV pre-exposure prophylaxis (PrEP) among gay and bisexual men

Martin Holt

A few years ago the Centre for Social Research in Health, in collaboration with colleagues at UNSW, the Australian Federation of AIDS Organisations and Goldsmiths College, London, began a program of work to investigate attitudes to biomedical HIV prevention technologies, including HIV pre-exposure prophylaxis (PrEP) and treatment as prevention (Holt, Ellard & de Wit, 2011). PrEP involves HIV-negative people regularly taking antiretroviral drugs to prevent infection with HIV. It has been shown to be efficacious in preventing HIV for gay and bisexual men, transgender women and heterosexual people at risk of HIV, although efficacy is highly dependent on drug adherence (Hankins & Dybul, 2013). PrEP is not currently available in Australia through the public health

system, although small demonstration projects began in three states in 2014. In 2011 we undertook a national online survey to investigate Australian gay and bisexual men's attitudes to PrEP. We repeated the survey in 2013 to monitor changes in attitudes over time.

In 2011, we found that 28% of HIV-negative and untested gay and bisexual men indicated that they were willing to use PrEP (Holt et al, 2012). In 2013, that figure fell slightly to 23% (adjusted odds ratio = 0.83, 95% confidence interval = 0.68–1.00,  $p = 0.050$ ). It is far from clear why willingness to use PrEP has declined; it is possible that as knowledge of PrEP has grown, interest in using it has become more concentrated among gay and bisexual men who find it acceptable, while other men have decided it is unsuitable for them (Holt, Lea et al, 2014). Although willingness to use PrEP appears to have declined over the last few years, the profile of men who are most interested in using PrEP appears to have remained largely unchanged. In 2011, we found that willingness to use PrEP was concentrated among younger men, those who had anal intercourse without condoms with casual partners, men who perceived themselves to be at risk of HIV, and those who had fewer concerns about side effects (Holt et al, 2012). In 2013, we found a similar profile: younger men, those who had HIV-positive partners, men who perceived themselves to be at risk of HIV, men who had previously taken post-exposure prophylaxis and those who had fewer concerns about side effects were the most interested in using PrEP (Holt et al, 2014).

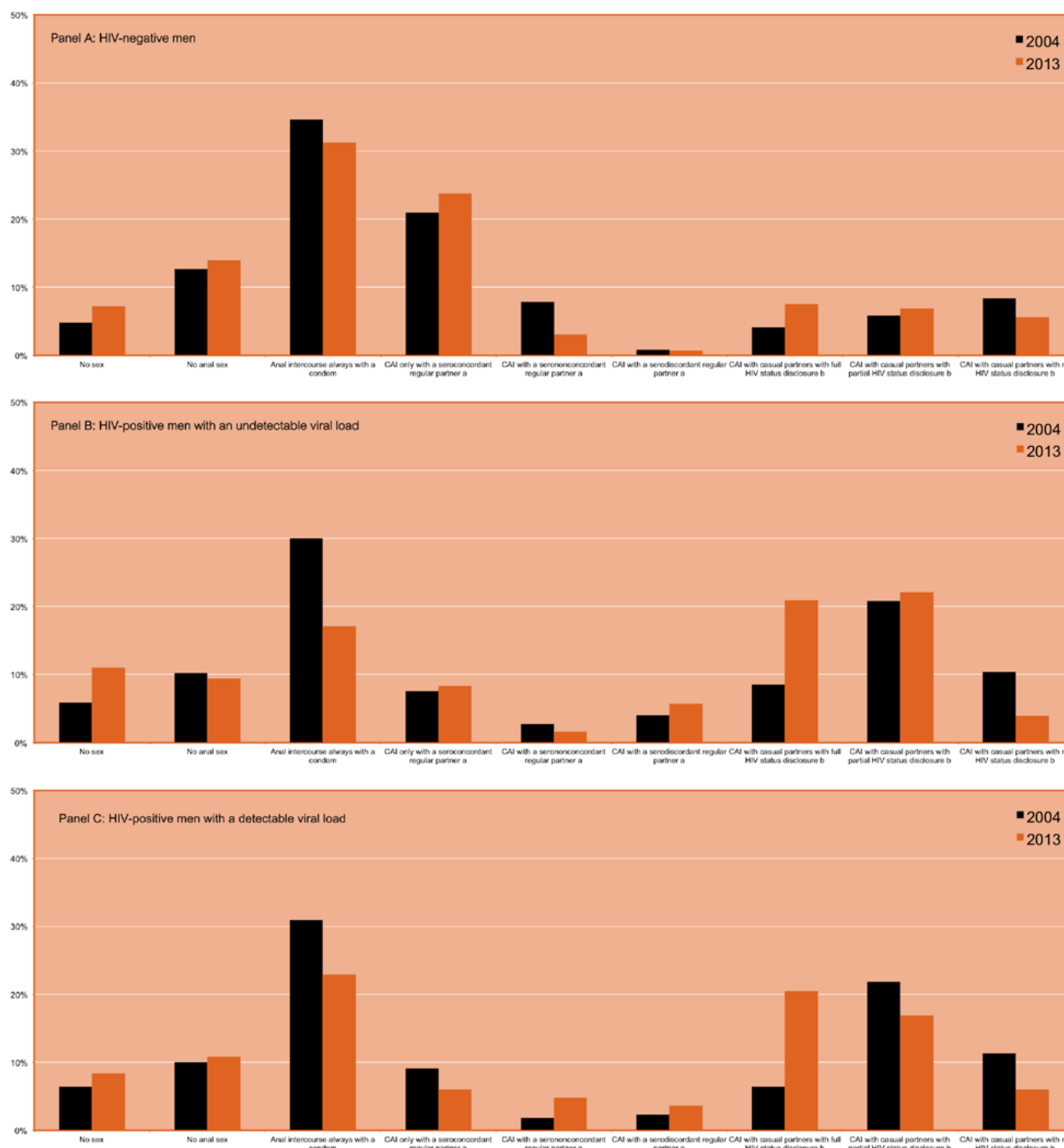
Although willingness to use PrEP has declined a little, it appears to remain concentrated among HIV-negative and untested men who are at increased risk of HIV. Our findings suggest that the targeted rollout of PrEP is feasible in Australia, because there is a minority of gay and bisexual men who are interested in using it and who would benefit from its protection. We will continue to monitor community attitudes to PrEP as demonstration projects take place and the debate continues about whether to make PrEP more widely available in Australia. It will be interesting to see whether willingness to use PrEP continues to change as knowledge of the technology grows.

## 2.6 Future developments – Acceptability and relevance of an online intervention aimed at mitigating the influence of cyber chatting

Philippe Adam and John de Wit

Gay and bisexual men who meet their sex partners online are at higher risk of engaging in non-deliberate sexual risk-taking. Findings from the Cybersex study showed that engaging in unprotected sex with partners met online is associated with not referring to condom use in one's dating/hook-up profile, engaging in online fantasising with potential sex partners about unprotected sex, and meeting partners directly after chatting online. These factors remained significantly associated with engaging in unprotected sex with partners met online after controlling for participants' intentions regarding condom use. These findings underscore that the dynamics of online partner seeking directly contribute to sexual risk-taking with partners met online and override men's intentions to use condoms.

To mitigate this unplanned risk-taking, we developed an online sexual health promotion intervention entitled Chat Smart ([www.chatsmart.csrh.org](http://www.chatsmart.csrh.org)). Central to Chat Smart is a self-regulation approach to support young gay and bisexual men in carrying through their intention to use condoms and avoid engaging in unprotected sex as a result of sexual scripts which develop in online interactions. Using tailored messages displayed in a digital quiz, Chat Smart aims at promoting a range of self-regulation strategies for sexual interactions, including indicating condom use in one's profile, avoiding



**Figure 8: Sexual practices, condom use and non-condom-based risk reduction in the six months prior to the survey: GCPS, 2004-2013 (all six states or territories, unadjusted data)**

fantasising about unprotected sex when chatting with potential sex partners, mentioning condom use in the last message sent before meeting sex partners, and postponing meeting a partner if there is a chance that condomless sex may occur.

The concept of the Chat Smart intervention was pilot-tested in a sample of 160 young gay men aged 18 to 29 years old who were recruited through Facebook. The evaluation encompassed assessing relevance and acceptability of the Chat Smart self-regulation intervention, and investigating intervention effects on participants' attitudes and intentions with respect to the recommended self-regulation strategies. The pilot test indicated that participants found the intervention relevant and acceptable, and held positive attitudes regarding the recommended self-regulations strategies. Participants' intentions to adopt the recommended self-regulation strategies were moderate to high depending on the specific strategy.

These findings indicate that the concept of the Chat Smart online intervention is acceptable and relevant to most participants and may be successfully used in a larger scale intervention. However, a proportion of participants believed that adopting the behaviours recommended in the intervention would make them lose sexual opportunities. To mitigate any adverse impact of these perceptions on intervention usage and effect, some messages used in the intervention have been adapted to ensure that participants experience appropriate agency. Where required, messages have been shortened to reduce potential drop out and allow completion on both computers and smart phones. The efficacy of the revised intervention is currently being tested using an RCT protocol. This assessment will tell whether the self-regulation intervention can actually change the way participants interact online with their potential sex partners and subsequently reduce (non-premeditated) sexual risk taking with partners met online.

## Spotlight – Priorities in Prevention: Attitudes of the HIV workforce to emerging HIV prevention technologies

Dean Murphy and John de Wit

Although there has been extensive research among gay men on attitudes to new HIV prevention technologies, such as pre-exposure prophylaxis (PrEP) and ‘treatment as prevention’ (TasP), much less attention has been paid to the attitudes and practices of people who work in the field. The Priorities in Prevention (PiP) study explored views of workers in the HIV sector in New South Wales with respect to five HIV prevention strategies: 1) pre-exposure prophylaxis, 2) ‘treatment as prevention’, 3) rectal microbicides, 4) condom use, and 5) serosorting.

Data were collected via an online survey undertaken between January and April 2014. Participants came from a range of different roles: health promotion or education (22.3%), social work or psychology (17.7%), nursing or allied health (15.8%), and HIV medical specialist or general practitioner (11.5%). Three-quarters (72.7%) worked in the public/government sector, and 27.3% in the community/non-government or private sector.

Participants’ responses reflected a clear hierarchy in relation to the perceived effectiveness of the different HIV prevention strategies. Based on mean scores (range 1–5), condoms were considered the most effective (mean = 4.39) followed by TasP (mean = 3.97). PrEP was considered to be moderately effective (3.54). Participants rated serosorting as the least effective of all strategies (2.89), even less effective than rectal microbicides (3.12).

In terms of the acceptability of these different strategies, participants considered strategies to be more acceptable to HIV-positive than HIV-negative men, with the exception of condoms use, for which there was no difference in perceived acceptability based on HIV status. Importantly, in contrast to their low rating of effectiveness, participants considered serosorting to be moderately-to-highly acceptable to gay men, in particular HIV-positive men. On average, participants were the most comfortable recommending condom use to prevent HIV infection, which they were also most likely to recommend. There was also strong support for recommending TasP, but reluctance regarding recommending serosorting.

The study found some differences regarding views about PrEP based on participants’ demographic characteristics and workplace. Older respondents were more likely to believe PrEP was less acceptable to HIV-negative men. Working outside Sydney and working outside the public sector were both associated with greater comfort and likelihood of recommending PrEP. There were no differences based on professional background or role. Views on TasP did not differ in relation to participants’ demographic characteristics, workplace, or profession/role.

# 3. HIV and STI Testing among gay men



## 3.1 Ever and recent HIV testing

Limin Mao, Martin Holt and John de Wit

The proportion of men participating in the Gay Community Periodic Surveys that has ever tested for HIV is very high, with around nine out of ten men nationally reporting that they have had at least once tested for HIV (see Table 12 and Figure 9). However, after a long period of stability, we now see a gradual downward trend in the proportion of ever-tested men in the GCPS, although it remains at over 85% nationally. This downward trend in testing for HIV may reflect sample variations over time. The fall in the proportion of ever-tested men has been observed in all states and territories, except Perth, over the last ten years. In the last three years, the proportion of men reporting that they have been tested for HIV has continued to decrease in Canberra and Melbourne, but has stabilised in the other states.

Table 13 and Figure 10 show the proportions of non-HIV-positive men (including those who had never tested for HIV) participating in the GCPS reporting HIV testing in the 12 months prior to the survey (testing in the last 12 months has previously been referred to as “recent” HIV testing). Over the ten-year period, rates of HIV testing in the previous 12 months among previously non-HIV-positive men have increased in Canberra and Melbourne, but decreased in Adelaide and Sydney. In the last three years, rates of HIV testing in the previous 12 months have declined in Canberra.

Across jurisdictions, the proportion of men reporting HIV testing in the previous 12 months was around 60%. Analysis of trends by age (unadjusted data) shows a significant decrease in rates of recent testing among men under 25 years of age (from 60% in 2004 to 57% in 2013;  $p < 0.01$ ), but not in other age groups.

**Table 12: Men who had ever been tested for HIV: GCPS, 2004-2013**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
Adelaide		89.4		91.2		85.2	83.9	86.8	85.9		↓	-
Canberra			83.1			94.1		86.7		80.0	↓	↓
Melbourne	89.2	92.6	89.2	90.6	90.7	90.3	87.0	89.1	89.3	85.3	↓	↓
Perth	81.9		83.0		89.2		84.2		78.4		ns	-
Queensland	91.2	92.1	90.9	90.2	94.6	91.2	86.5	89.9	90.8	89.1	↓	ns
Sydney	93.6	93.5	94.8	92.6	93.3	92.3	92.6	88.6	85.7	87.9	↓	ns
All six states/ territories	89.9	92.4	90.6	91.2	92.3	90.4	87.3	88.9	86.4	87.0	↓	ns

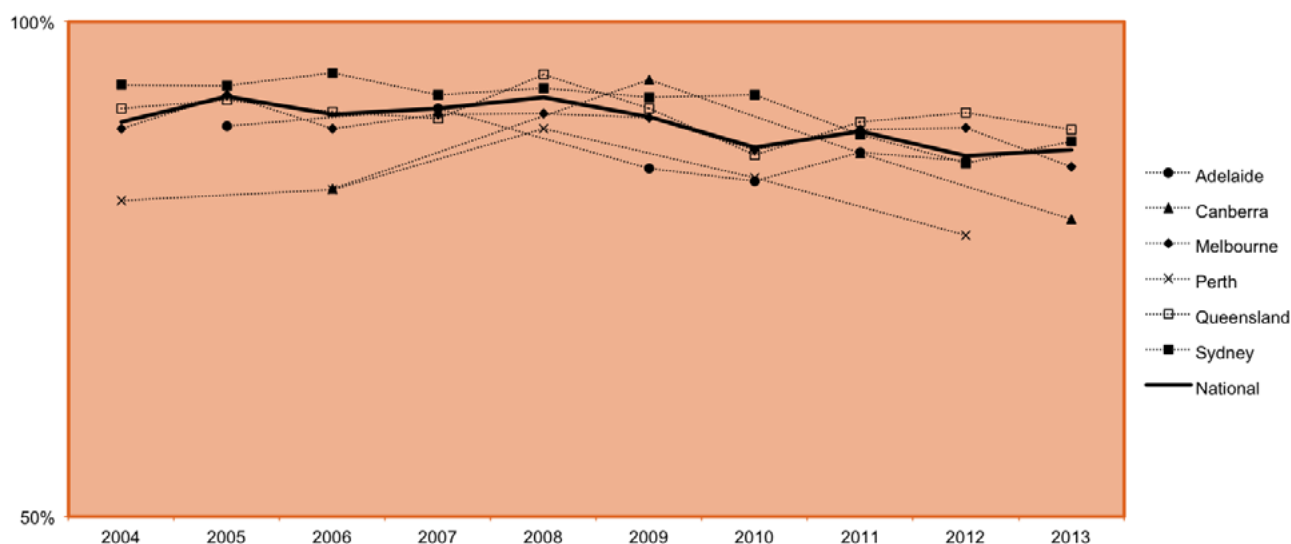


Figure 9: Men who had ever been tested for HIV: GCPS, 2004-2013

Table 13: Non-HIV-positive men tested for HIV in the 12 months prior to the survey: GCPS, 2004-2013

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
Adelaide		64.7		64.3		66.3	50.5	51.9	59.4		↓	-
Canberra			56.1			67.1		67.3		62.5	↑	↓
Melbourne	59.8	64.9	62.0	62.4	63.9	67.8	62.4	61.5	68.2	64.1	↑	ns
Perth	49.8		52.8		57.3		62.9		48.7		ns	-
Queensland	65.4	60.1	59.9	62.1	65.8	59.9	58.0	58.5	63.4	60.6	ns	ns
Sydney	64.7	67.8	68.1	71.3	71.0	70.4	59.3	62.3	58.2	58.4	↓	ns
All six states/ territories	61.4	65.5	62.5	65.6	66.0	66.5	58.9	60.6	60.5	60.7	↓	ns

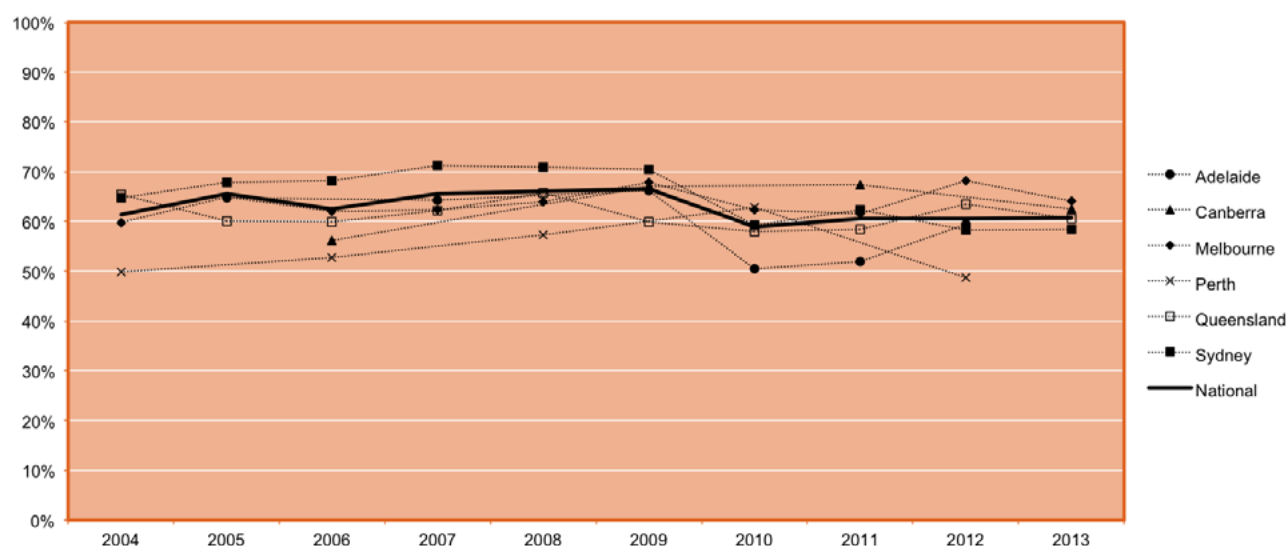


Figure 10: Non-HIV-positive men tested for HIV in the 12 months prior to the survey: GCPS, 2004-2013

### 3.2 Comprehensive STI testing

Limin Mao, Martin Holt and John de Wit

Table 14 and Figure 11 show the proportions of men reporting at least four different STI tests in the previous 12 months, based on the type of specimen that was taken (throat swab, anal swab, urine sample, and blood test other than for HIV). We regard having at least four different tests as an indicator of 'comprehensive' STI testing (i.e., testing for a range of STI

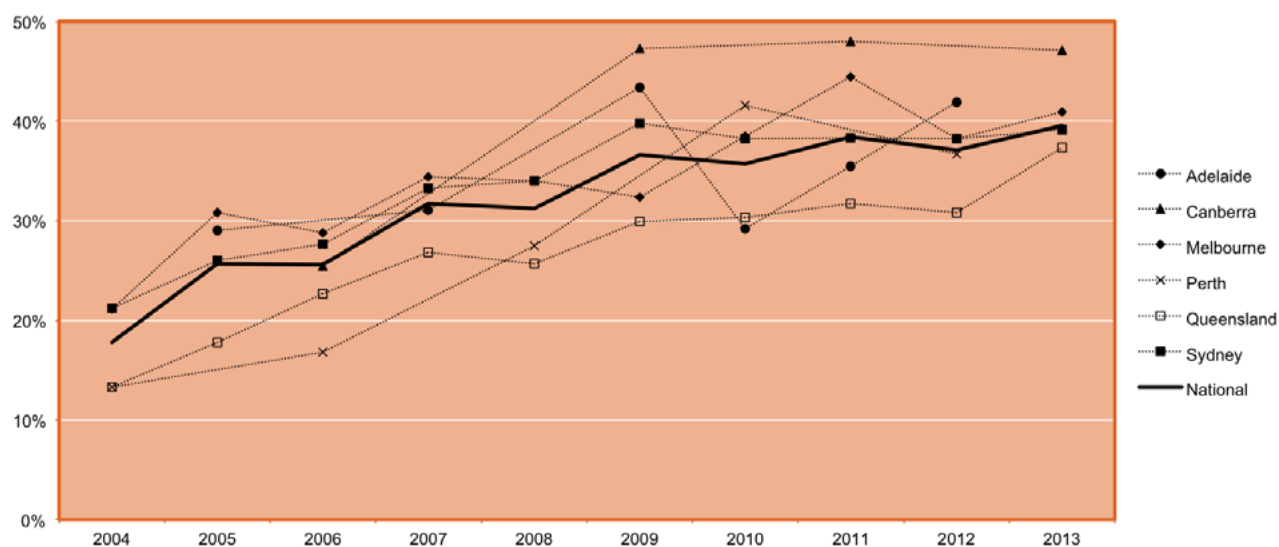
and taking specimens from different anatomical sites), as recommended in HIV/STI testing guidelines for gay men (e.g., STIGMA, 2014). However, it should be noted that we cannot tell from GCPS survey data whether these tests were conducted at the same time or over multiple occasions during the six-month period before the survey.

Since 2004, there has been a continuous and substantial increase nationally in the proportion of men in the GCPS who



**Table 14: Men who reported having at least four different STI tests in the 12 months prior to the survey: GCPS, 2004-2013**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in
Adelaide		29.0		31.1		43.4	29.2	35.5	41.9		-	
Canberra			25.4			47.3		48.0		47.1		ns
Melbourne	21.1	30.8	28.8	34.4	34.0	32.4	38.5	44.4	38.2	40.9		ns
Perth	13.3		16.8		27.5		41.6		36.7			-
Queensland	13.3	17.8	22.7	26.8	25.7	29.9	30.3	31.7	30.8	37.3		
Sydney	21.2	26.0	27.6	33.3	34.0	39.8	38.2	38.3	38.2	39.1		ns
All six states/ territories	17.8	25.7	25.6	31.7	31.2	36.6	35.7	38.4	37.1	39.5		ns

**Figure 11: Men who reported having at least four different STI tests in the 12 months prior to the survey: GCPS, 2004-2013**

report four or more STI tests in the previous 12 months, from 17.8% in 2004 to 39.5% in 2013. Over the past ten years an increase in comprehensive STI testing has been observed in every participating jurisdiction. The proportion of men reporting four or more STI tests has stabilised in the last three years in all survey locations except Queensland, where comprehensive STI testing has continued to increase.

A comparison of trends in comprehensive STI testing by HIV status shows there have been substantial increases among both HIV-positive men (from 30% in 2004 to 60% in 2013;  $p < 0.001$ ) and non-HIV-positive men (from 16% in 2004 to 37% in 2013;  $p < 0.001$ ). HIV-positive men remain more likely to report comprehensive testing than non-HIV-positive men. Comprehensive STI testing has become significantly more likely in all age groups. However, as typically 80% or more of men in the GCPS are sexually active, and given that guidelines suggest all sexually active gay men should have a sexual health check-up at least annually (STIGMA, 2014), our findings highlight that there remains considerable room for improvement in comprehensive STI testing among gay men.

### 3.3 Factors associated with comprehensive sexual health testing

Martin Holt

We undertook a detailed analysis of trends in the comprehensiveness of sexual health testing among men who participated in the Gay Community Periodic Surveys in Melbourne, Queensland and Sydney from 2003-2012 (Holt

et al, 2014). We also assessed factors associated with comprehensive testing, stratified by HIV status. For HIV-positive and non-HIV-positive men comprehensive testing was defined as at least four different STI tests (from anal swab, throat swab, urine sample and any blood test other than for HIV) in the 12 months prior to survey. For non-HIV-positive men comprehensive testing in addition included an HIV test in the 12 months prior to survey. Similar to the analysis reported in section 3.2 (and shown in Table 13), we found a substantial increase in comprehensive testing reported by participants over the ten-year period. In particular, we found notable increases in the use of specific specimen collection methods, particularly anal and throat swabs.

Controlling for year of data collection, HIV-positive men were substantially more likely than HIV-negative and HIV status unknown men to report comprehensive STI testing, excluding HIV testing (adjusted odds ratio=2.05, 95% CI 1.94 to 2.17,  $p < 0.001$ ). Among HIV-positive men, comprehensive STI testing was associated with spending more free time with gay men and with any illicit drug use. Among HIV-negative and untested men, we found that comprehensive STI and HIV testing was associated with having a university education, living in a metropolitan location, and finding partners online. In both HIV status groups, comprehensive testing was more commonly reported by men who had condomless anal intercourse with casual partners and men with higher numbers of partners, which is consistent with current testing guidelines (STIGMA, 2014). It was noticeable that rates of STI diagnoses in the 12 months prior to survey were considerably higher among men who had had comprehensive testing,



underlining the importance of regular and comprehensive screening to identify sexually transmissible infections. However, despite improvements over time, it is clear that there remains considerable room for improvement in encouraging comprehensive testing among sexually active gay men.

### 3.4 Identifying undiagnosed HIV infection among Australian gay men: delivering HIV testing through a national, community-based study

Martin Holt and John de Wit

The COUNT study of undiagnosed HIV infection among gay men commenced in 2013, with funding from the National Health and Medical Research Council. The study is conducted in collaboration between the Centre for Social Research in Health, the Burnet Institute and the Kirby Institute, with support from community organisations and clinical services. The study involves offering HIV testing to participants in the Gay Community Periodic Surveys, which are currently conducted in six states and territories. Participants are primarily recruited at gay community events and venues. For the COUNT study, consenting participants provide an oral fluid sample that is sent to the National Reference Laboratory for antibody testing. Test results are linked to the participant's GCPs questionnaires, so we can analyse the social and behavioural profile of men with undiagnosed infection. Participants can choose to receive their test results by text message, phone or email. Most negative test results are delivered by text message, backed up with further information on a secure website and a study support line. All participants with test results which indicate previously undiagnosed HIV are asked to call the study support line and are connected with a local clinical service for confirmatory HIV testing and care.

Recruitment for the COUNT study began in Canberra in October 2013, and moved on to Melbourne, Sydney and Perth in early 2014. Recruitment will be completed later this year in Brisbane and Adelaide. A total of 2345 men have participated so far, which is just under half of the total number of GCPs participants in the four cities. One hundred and sixty men (6.8%) have provided samples which tested positive for HIV. This is a lower HIV prevalence than we typically find through self-report in the GCPs (see chapter 5), which indicates that the COUNT study is currently under-recruiting HIV-positive men. Among men who have tested positive for HIV so far, 16 (10.0%) have been identified with previously undiagnosed HIV infection. This is a much lower level of undiagnosed infection than was found in smaller scale, anonymous prevalence studies previously conducted in Brisbane and Melbourne (Birrell et al, 2010; Pedrana et al, 2012).

One possible explanation for the apparently lower level of undiagnosed HIV infections is that giving participants the option of receiving their test results is discouraging men who may be at risk of HIV from participating in COUNT. However, an initial comparison of men who participated in COUNT and those who only participated in the GCPs suggests a

similar HIV risk profile, including in terms of numbers of male partners, sex with and without condoms with casual partners and recent HIV testing. An alternative explanation is that the previous anonymous prevalence studies may have overestimated undiagnosed HIV. Furthermore, through speaking with COUNT participants who appeared to have previously undiagnosed HIV, we have discovered that a few previously diagnosed HIV-positive men selected 'negative' as their HIV status when completing the behavioural questionnaire, because they have an undetectable viral load. This inflates the proportion of undiagnosed infection, unless these participants are reclassified as previously diagnosed, which we have been doing in COUNT. It is not possible to fully assess the differences between COUNT and other studies of undiagnosed HIV infections among gay men in Australia and the factors affecting estimates of undiagnosed HIV until the completion of the study/the study is completed. The estimates of undiagnosed HIV infections among gay men provided by COUNT are expected to be the most robust achieved to date in Australia.

### 3.5 Future developments – GPs understanding and uptake of STI testing guidelines

Philippe Adam

The prevalence of sexually transmissible infections (STIs) is high among gay men and other men who have sex with men in Sydney (MSM). To address this situation, a working group called 'STI in Gay Men Action group' (STIGMA) is implementing activities and strategies to increase regular STIs testing among MSM. Central to STIGMA's work is the development, regular update and implementation of STIs testing guidelines for MSM that provide guidance to GPs, especially those who have significant numbers of MSM amongst their clients. CSRH has been commissioned to provide scientific support to the development and conduct on an evaluation study aimed at assessing the way GPs engage with their MSM clients and how they use the most recent guidelines published in 2014.

A survey will be conducted among Sydney-based GPs who have MSM clients. Information about the survey will be circulated via GP networks and newsletters. GPs will have the option to complete an online or print questionnaire. An email invitation with a link to complete the questionnaire online will be circulated via the Australasian Society for HIV Medicine, local organisations supporting GPs, and professional networks. The questionnaire will expand the scope of the 2005 survey, 'Passing the tests? Inner Sydney GPs and use of STI testing guidelines for MSM'. The 2014 questionnaire will firstly assess GPs' experience with and confidence in interacting with MSM patients, their familiarity with (the new) testing guidelines and how often they refer to these guidelines in their practice. GPs will also be asked what they generally recommend to their MSM patients in terms of STI testing and how their patients respond to their testing recommendations. GPs will also have an opportunity to indicate what the main challenges are in recommending STI testing to MSM clients.

## Spotlight – An examination of appropriate and effective HIV pre-test discussion and post-test counselling

Stephen Bell and John de Wit

HIV testing and counselling is a critical gateway to further services, and is essential for effective HIV prevention and treatment (WHO, 2012). In many European countries, HIV testing efforts are failing to identify HIV infections early enough, and substantial proportions of people with HIV are unaware of their infection (Coenen, Lungren, Lazarus, & Matic, 2008; Hamers & Phillips, 2008). National, European and global guidelines offer recommendations about the different ways of obtaining informed consent, undertaking pre-test discussion and post-test counselling, delivering test results and making referrals to specialist services after testing. Whilst guidance is diverse, there are sometimes disparate recommendations and information gaps, and it is uncertain to what extent these are informed by evidence or expert opinion.

CSRH has been commissioned by the HIV in Europe initiative ([www.hiveurope.eu](http://www.hiveurope.eu)) to review testing and counselling guidelines across European country contexts. This project will contribute to the evidence base which guides the development and implementation of HIV testing models, which are acceptable to providers and clients, feasible in diverse practice settings and effective in promoting risk reduction. Ongoing research consists of a review of guidance documents to examine HIV testing and counselling recommendations, complemented by a review of the research literature to extend and update existing guidelines. A European stakeholder survey, achieving 379 responses from policy makers, health service providers and NGO activists in 52 countries, has been undertaken to collect information regarding current HIV testing processes across Europe. The final stage of the project will involve an expert consultation regarding the survey results to gain consensus about recommendations and best practice protocols for HIV testing.

# 4. Sexual health of young people



## 4.1 The GOANNA Project: Sexual health and relationships in young Aboriginal and Torres Strait Islander people

Joanne Bryant

This project provides the first national profile of the sexual health of young Indigenous Australians. It examined risk behaviours, levels of knowledge and types of health services used for sexual health and blood borne viruses. Surveys were conducted at Aboriginal community events in each State and territory over a three-year period from 2011-2013. The project was funded by an Australian Research Council Linkage grant and was led by Associate Professor James Ward at the Baker IDI and the Kirby Institute's Aboriginal and Torres Strait Islander Health Program, in partnership with co-investigators from the National Aboriginal Community Controlled Health Organisation, Centre for Social Research in Health and the Australian Research Centre in Sex Health and Society. The fieldwork was coordinated and carried out by Aboriginal researchers located at the Aboriginal Community Controlled Health Organisations in each State and Territory

A total of 2,877 Indigenous people aged 16-29 years completed the self-report questionnaire during the study period. Most participants lived in urban (51%) or regional (36%) areas, and 9% lived in remote Australia. Incarceration rates were high, with 11% of young men and 4% of young women reporting that they had even been in prison or juvenile detention. Knowledge about STI and BBV transmission and treatment was generally good, with, for example, 76% knowing that using condoms during sex could protect someone from contracting HIV, and 81% knowing that a woman could have an STI without any obvious symptoms. However, specific areas of knowledge need attention. Knowledge about chlamydia in

particular was poor, with only 66% knowing that chlamydia could be easily treated with antibiotics, and only 60% knowing that chlamydia infection can affect women's fertility. Moreover, men reported worse overall knowledge than women, and 16-19 year olds reported worse overall knowledge than 25-29 year olds.

Most participants (>80%) reported having ever had sexual intercourse. Just over a third (37%) reported they had always used condoms with their sexual partners in the last year, although this was less common among women than men (35% vs. 41%). Consistent condom use was highest (50%) amongst the youngest participants (16-19 years). Of respondents aged less than 20 years, 69% reported using a condom during their last sexual experience compared to 51% and 38% of those aged 20-24 and 25-29 years. STI testing coverage was generally good, with 61% of participants reporting that they had ever been tested for an STI. This was more common among women than men (65% vs. 56%), and among older than younger participants (42% of 16-20 year olds vs 80% of 25-29 year olds). Aboriginal Medical Services were reported as the most common place where testing occurred (approximately 50%), followed by private general practice clinics (31%). HIV testing rates were slightly lower than STI testing rates, with 50% of respondents reporting that they had ever been tested for HIV; HIV testing rates were lower among younger compared to older participants (36% of 16-20 year olds vs 67% of 25-29 year olds). Overall, 15% of participants reported that they had ever been diagnosed with an STI. Chlamydia was the most commonly diagnosed STI (14%), and rates of other STI, including gonorrhoea, syphilis, trichomoniasis, herpes and genital warts, ranged from 1% to 2%.

While 17% of respondents did not drink at all in the past year (17%), there also was a substantial level of risky drinking,

especially among men of whom 44% reported drinking seven or more drinks on each occasion in the last year. Over a third of participants (35%) reported using at least one type of illicit drug in the past year, and this was more common among people aged 25-29 years (40%) than those aged 16-20 years (29%). Cannabis was the most commonly used drug (30%), followed by ecstasy (11%) and methamphetamine (9%). Polydrug use (i.e., the use of more than one type of drug at any time) in the past year, was higher among men than women (14% vs 9%), and among participants aged 25-29 years (14%) than participants aged 16-19 years (9%). Only 3% reported having injected a drug in the last year, and this was more common among men than women (5% vs 2%). Over a third of participants who reported injecting drugs had used a needle and syringe after somebody else had already used it (37%), and 45% had shared ancillary injecting equipment.

## 4.2 Project 1626: sexual health knowledge, attitudes and practices among young people

Philippe Adam

Over the past years, STI notifications have considerably increased among adolescents and young adults in Australia and reducing the prevalence of STIs through the promotion of condom use and STI testing has become a public health priority. Studies conducted in Australia among various groups of adolescents and young adults have reported limited uptake of condoms and STI testing. However, as behavioural data are currently fragmented across surveys and groups of young people, an integrated behavioural surveillance system is needed to provide more robust estimates of condom use and STI testing among young people. A new surveillance system would also need to provide information on major barriers to condom use and STI testing that need to be addressed in sexual health promotion activities. This would also provide an innovative tool to monitor the extent to which current sexual health programs can contribute to increasing STI knowledge, reducing barriers to condom use and STI testing, and motivate young people to adopt sexual health behaviours.

To address these challenges, a feasibility project was undertaken to establish the basis for an ongoing online periodic survey among young people aged from 16 to 26 in New South Wales, adapting the methods and measures of our previous surveys, including 'Getting Down To It' and 'How Much Do You Care?'. Participants were recruited through the Internet research platform [www.project1626.net](http://www.project1626.net), between July and November 2013. An advertising campaign on Facebook was used to recruit participants. The sample consisted of 754 participants who completed the survey, of whom two thirds (66.6%) reported being sexually active. Overall, knowledge of STIs was only moderate, with higher levels of STI knowledge among sexually active participants than non-sexually active participants. Furthermore, knowledge regarding transmission of STIs was generally good, while knowledge of the consequences of having an STI was poor.

Findings suggest that sexual risk-taking is frequent, with 62.2% of the sexually active participants reported having had unprotected intercourse with regular and/or casual partners in the 12 months prior to the survey. Most of the respondents (78.5%) had regular partners in the 12 months prior to the survey, and 72.6% of them had engaged in unprotected sexual intercourse with their regular partners in that period. Sexual risk-taking also occurs with casual partners. Four out of ten (42.8%) sexually active participants had casual partners in the 12 months prior to the survey, and almost half (47.0%) of these participants had engaged in unprotected sexual intercourse with casual partners in that period. While the majority of sexually active participants had engaged in unprotected

intercourse, only 44.4% of all sexually active participants had ever tested for STIs. Three-quarters (73%) of those who had tested for STIs had tested in the preceding year, and most of them (79%) reported they had last tested with their GP.

Further analyses focused on identifying factors influencing young people's condom use and STI testing, and which need to be addressed in sexual health promotion campaigns and other interventions. Findings indicate that a range of social-cognitive factors together play an important role in young people's decisions to use condoms and/or test for STIs. To be effective, sexual health promotion activities need to go beyond promoting knowledge of STIs and raising awareness of the risk that STIs can represent, as well as address a larger range of social-cognitive factors. A unique feature of this study is that it provides an empirical assessment of the potential effect of sexual health promotion campaigns on social-cognitive factors related to condom use and STI testing. This suggests that while most recent campaigns promoting STI testing among young people are targeting the right social-cognitive factors, an important challenge is to strengthen the effective promotion of condoms through targeting the factors that shape their use. The 'Play safe' and 'Live Nation' digital interventions by the New South Wales Ministry of Health will offer unique platforms to intensify sexual health promotion efforts for young people and address proven barriers to STI testing and condom use.

## 4.3 Evaluating the influence of sexual health messaging for young people attending a music festival in NSW

Philippe Adam and John de Wit

Music festivals in Australia typically attract a sub-population of young people who are at elevated risk of STIs. During the 2012–2013 season, the first large scale sexual health promotion initiative was implemented at music festivals by the New South Wales Ministry of Health. The initiative advocated a range of sexual health behaviours, including communication between partners about condoms and STIs, condom use, and testing for STIs. These were promoted through interactive engagement with multiple activities or intervention components at the event and online, both in the lead-up to and after the music festival.

CSRH was commissioned by the New South Wales STI Programs Unit to evaluate the impact of this initiative and inform the development of future interventions at music festivals and beyond. The initiative was assessed three months after the event through an online survey conducted among 357 young people who had attended a specific music festival. Preliminary results confirm that the intervention was effective in motivating young people to adopt sexual health behaviours and that there are clear benefits in exposing young people to multiple intervention components rather than just one component. Since conducting a multi-component initiative is more resource intensive, comparing effects of exposure to multiple and specific components on desired outcomes was found to be informative for the development of future, efficient sexual health programs targeting young people at music festivals. Furthermore, the assessment conducted around the DareToScore app, which is part of the festival initiative resources, directly informed the development of Play Safe, a mass digital intervention by the New South Wales Ministry of Health (<https://playsafe.health.nsw.gov.au/>).



#### 4.4 Future developments – Informing and evaluating a mass sexual health promotion intervention targeting an online community of young people in New South Wales: The Live Nation project

Philippe Adam and John de Wit

Young people often use dedicated websites to buy tickets for music festivals and other events. The webpages and subscriber databases of these services offer unique and novel opportunities to access young people en masse. In July 2014, an online sexual health promotion intervention, referred to as the Live Nation project, was initiated to target adolescents and young adults aged 15-29 years old living in New South Wales who visit the Live Nation websites or have subscribed to their databases. The sexual health promotion strategy of the intervention has been informed by CSRH research on sexual health among young people, contemporary theorising in health psychology, and empirical evaluation of previous sexual health promotion initiatives in New South Wales undertaken by CSRH. To effectively promote condom use and testing for STIs among young people, the new intervention will aim at increasing their STI-knowledge, raising their awareness of the risk of contracting an STI, and addressing a range of (perceived) barriers to condom use and STI testing. Sexual health messages will be displayed in various digital formats on the various Live Nation websites and across the consumer journey.

Online surveys will be conducted to inform the development of the sexual health promotion intervention and to evaluate its effect. This will entail assessing the sexual health promotion needs of young subscribers/users prior to the start of the intervention, assessing how young people who visit the websites engage with the intervention, and evaluating its effect on knowledge of STIs, attitudes, perceived barriers, intentions and behaviours among the community of young subscribers/users. An initial online survey was conducted in July 2014, before the start of the intervention. The survey was advertised through the subscribers' database and had been programmed to only target participants aged 15-29 years old who live in New South Wales. To encourage participation, prizes (e.g., tickets to music festivals including the Lady Gaga concert in Sydney) were drawn among participants. Survey findings will provide information on the characteristics of the young subscribers/users and their sexual health promotion needs. These data will be used to refine the online intervention and further tailor its content to address the specific needs of young subscribers/users. The survey will also provide baseline data against which possible changes in outcomes after exposure to the intervention can be assessed.

#### Spotlight – Building innovative sexual health promotion frameworks to promote testing for STIs among young people : The Play Safe initiative

Philippe Adam and John de Wit

Beyond conducting behavioural and social science research, the range of activities undertaken by CSRH also includes the development and testing of novel forms of persuasive communication in the field of sexual health promotion, informed by theory, research and proven practice in attitude and behaviour change science and communication science. The development of Play Safe, a sexual health promotion intervention of the New South Wales Ministry of Health, is an outstanding example of successful collaboration across sexual health promotion practice and research between the New South Wales STI Programs Unit and CSRH.

Play Safe is a mass online intervention to promote condom use and STI testing among adolescents and young adults in New South Wales which has won the 'Best in Class' award for Education, 2014 Interactive Media Awards. The website uses state-of-the-art online technology and contemporary theory in health psychology to power the sexual health promotion initiative. In addition to providing detailed and youth friendly information about STIs, the website allows visitors to complete an anonymous quiz which provides instant and personalised feedback and advice on their sexual practices as well as advice on their potential need to test or retest for STIs. The development of the quiz builds on evidence from an extensive program of research on barriers to testing for STIs and HIV, led by CSRH (Adam, de Wit, & Bourne, 2013; Adam et al, 2011). This research has demonstrated that while increasing information on STIs and awareness of risk is important, it is not sufficient to achieve behaviour change. A range of individual, social and structural barriers also need to be addressed by sexual health promotion programs.

This unique theory-informed and evidence-based framework was used to augment an interactive module on risk assessment and awareness which was previously used in the DareToScore quiz which in turn was part of the resources of the festivals initiative to promote sexual health among visitors of music festivals in New South Wales. The newly developed Play Safe quiz is a critical component of the Play Safe online sexual health promotion platform which makes use of a complex decisional algorithm to provide personalised information and advice in response to a user-driven needs assessment. In addition to powering the content of the intervention, CSRH has been commissioned to assess its effectiveness based on the responses which will be provided by young people visiting the website for the first six months of the intervention. Play Safe is a unique tool offering a model for other interventions, including for other population groups affected by HIV and other STIs, as well as for a range of other health issues in various populations.

# 5. Living with HIV



## 5.1 Antiretroviral treatment and viral load among HIV-positive gay men

Limin Mao, Martin Holt and John de Wit

Nationally, the proportion of HIV-positive men recruited into the GCPS has been in the range of 14-18% between 2004 and 2013 (see Table 15 and Figure 12). The Sydney and Melbourne surveys generally recruit the largest proportions of HIV-positive men, followed by Queensland. This appears to reflect the size of the gay male and HIV-positive populations in each jurisdiction (Prestage et al, 2008). Please note that specific reports on the smaller surveys (Adelaide, Canberra and Perth) have been omitted from this analysis, as the limited numbers of HIV-positive men recruited in these locations may result in unreliable analyses. HIV-positive participants from Adelaide, Canberra and Perth are however included in the estimation of proportions and the analysis of trends across the six jurisdictions where GCPS are conducted.

The proportion of HIV-positive men participating in the GCPS has been relatively stable over time nationwide. This partly reflects the stability of survey recruitment over time. Although the number of people living with HIV, predominantly gay men,

has increased substantially during the reporting period, the estimated HIV prevalence rate appears to be stable (The Kirby Institute, 2013). As the social and demographic profile of HIV-positive participants in the survey has changed over time, it is possible that HIV-positive men are less likely to be recruited into the GCPS as they become older and less likely to participate in gay community events and venues (Holt et al, 2013).

The use of combination antiretroviral therapy at the time of the survey by HIV-positive men in the GCPS is shown in Table 16 and Figure 13. It is important to note that the smaller surveys (Adelaide, Canberra and Perth) have not been reported separately, because of the relatively small numbers of HIV-positive men recruited in these locations. HIV-positive participants from Adelaide, Canberra and Perth are, however, included in the estimation of proportions and the analysis of trends across the six jurisdictions where GCPS are conducted. Nationally, about 70% of HIV-positive men in the GCPS reported being on treatment between 2004 and 2013, with a significant increase in the proportion of HIV-positive participants on treatment during the reporting period, particularly since 2007.

**Table 15: Men who are HIV-positive: GCPS, 2004-2013**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
Melbourne	12.1	15.9	16.5	15.2	16.1	14.9	16.9	19.5	16.8	13.5	ns	↓
Queensland	14.2	24.8	13.6	10.2	11.0	11.6	14.6	14.2	9.2	21.3	↑	↑
Sydney	21.1	18.8	23.2	17.2	25.5	19.9	18.2	17.9	17.1	16.9	↓	ns
All six states/ territories	14.3	17.9	17.5	14.9	17.4	14.4	15.5	16.9	14.0	16.5	ns	ns

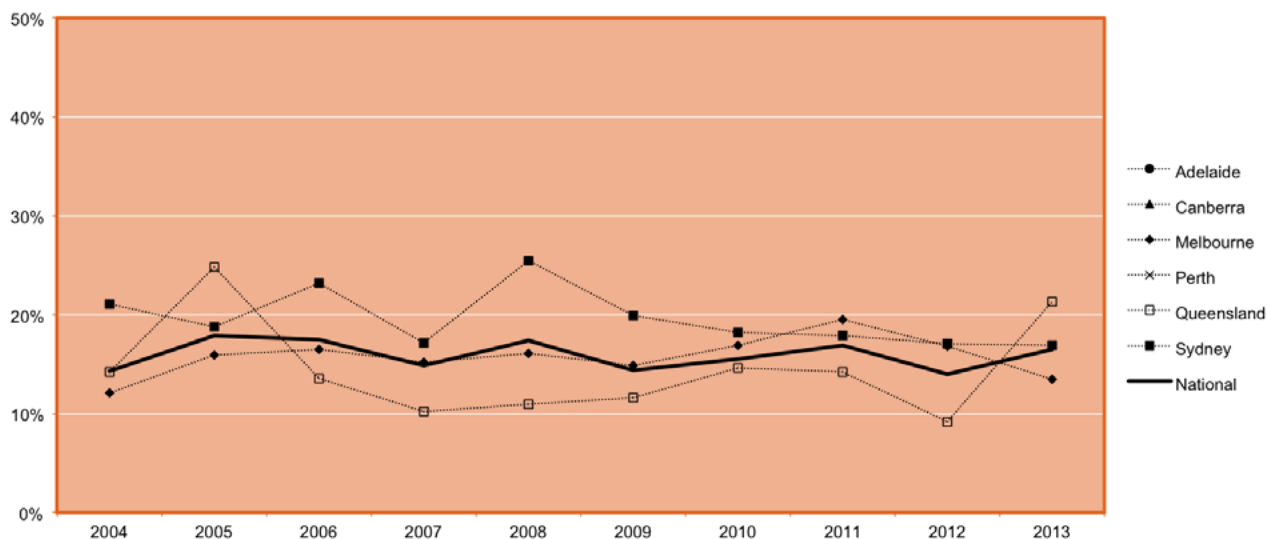


Figure 12: Men who are HIV-positive: GCPS, 2004-2013

Table 16: HIV-positive men on antiretroviral treatment, 2004-2013

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
Melbourne	63.8	56.5	55.3	51.5	63.3	61.3	69.7	72.6	77.7	65.7	↑	↓
Queensland	63.5	55.3	71.9	64.4	66.1	61.5	68.5	69.7	69.8	86.3	↑	↑
Sydney	54.9	64.4	54.7	53.2	70.6	73.5	68.9	70.6	80.2	76.6	↑	↑
All six states/ territories	61.9	60.3	60.1	57.2	68.0	67.4	69.5	71.8	77.9	76.4	↑	↑

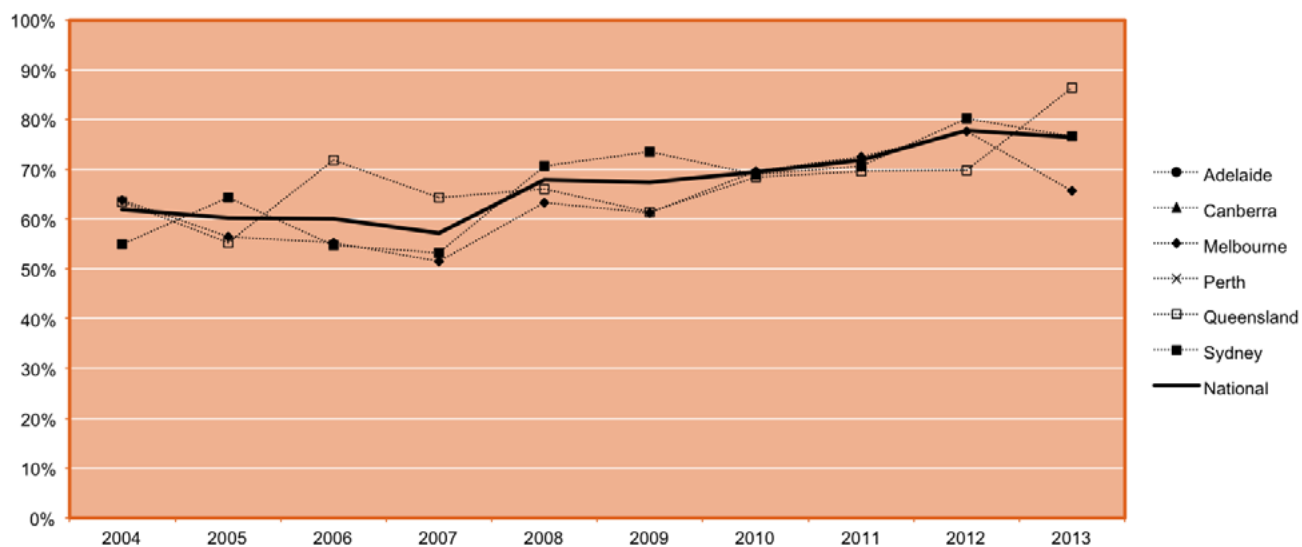
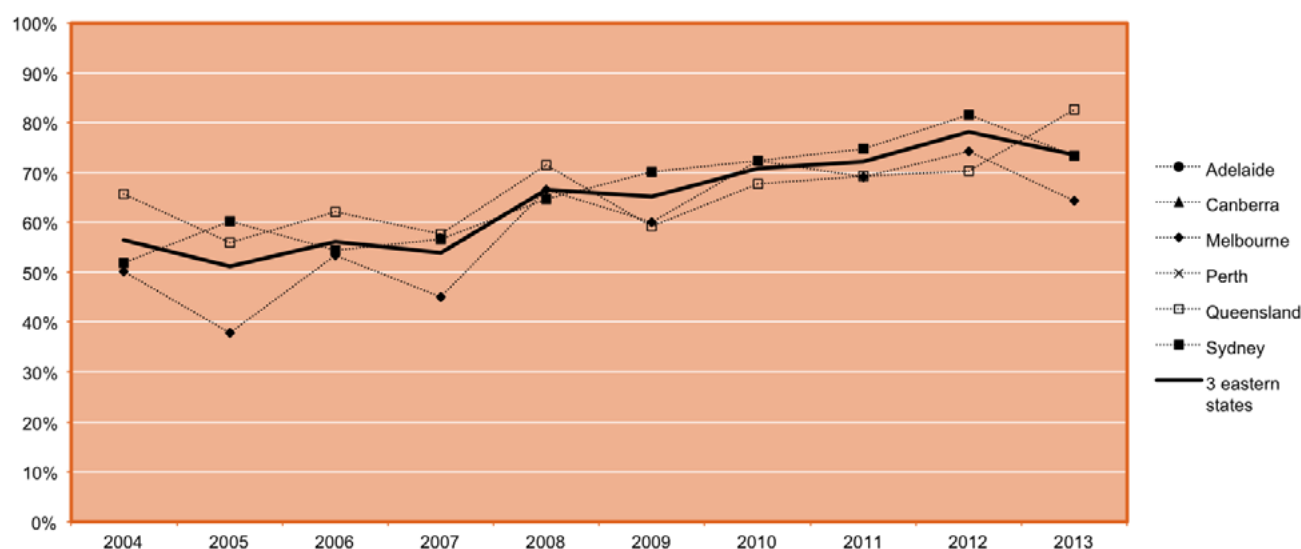


Figure 13: HIV-positive men on antiretroviral treatment: GCPS, 2004-2013

Table 17: HIV-positive men who reported an undetectable viral load: GCPS, 2004-2013

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
Melbourne	50.2	37.8	53.4	45.0	66.6	60.1	72.4	69.2	74.3	64.3	↑	↓
Queensland	65.7	55.9	62.1	57.6	71.6	59.3	67.7	69.3	70.3	82.7	↑	↑
Sydney	51.9	60.3	54.4	56.6	64.7	70.1	72.3	74.7	81.6	73.4	↑	ns
All three eastern states	56.5	51.2	56.1	53.9	66.6	65.2	70.9	72.2	78.1	73.6	↑	ns





**Figure 14: HIV-positive men who reported an undetectable viral load: GCPS, 2004-2013**

In 2013, 66%-86% of HIV-positive men in Melbourne, Queensland and Sydney reported being on treatment. Significant increases in treatment uptake have been observed in these three jurisdictions over the ten-year period, as well as in the last three years. However, treatment uptake appears to have fallen in Melbourne in the last three years. Nationally, the proportion of HIV-positive men on treatment reached its highest reported level in 2012 (77.9%). The proportion of HIV-positive men on treatment in the last three years has increased most in Queensland, from 70% in 2011 to 86% in 2013.

Table 17 and Figure 14 show the proportions of HIV-positive men reporting an undetectable viral load at the time of the survey, which serves as a proxy indicator of successful viral suppression. Please note that this includes all HIV-positive men, regardless of whether they are receiving treatment or not. The smaller surveys (Adelaide, Canberra and Perth) have been omitted from this analysis because of the small samples of HIV-positive men. They are also excluded from the estimation of national trends; trends are assessed for the three eastern states only.

There have been substantial increases in the proportions of HIV-positive men reporting an undetectable viral load in the three eastern states since 2004. In 2013, 74% of HIV-positive men in Melbourne, Queensland and Sydney reported having an undetectable viral load at the time of the survey. This probably reflects ongoing improvements in the uptake and efficacy of antiretroviral treatment in that more people who need treatment receive it and the treatment is more successful in achieving viral suppression. The increase in proportions of HIV-positive GCPS participants achieving viral suppression is consistent with observations from antiretroviral treatment prescribers (Mao et al, 2013) and clinical cohort data (Law et al, 2011). In the past three years, however, the proportion of HIV-positive men with an undetectable viral load has declined among participants in Melbourne, possibly reflecting a lower proportion of HIV-positive men on treatment in that state. In contrast, the proportion of HIV-positive men with an undetectable viral load in Queensland increased substantially in the past three years. In Sydney, the proportion of HIV-positive men on treatment has stabilized in the past three years, after a record high in 2012 (78.1% reporting being undetectable).



## 5.2 Uptake of antiretroviral treatment and treatment decision-making

Limin Mao, Christy Newman, Philippe Adam and John de Wit

Antiretroviral treatment (ART) not only has important benefits for individuals' health, but also for public health, as it reduces the likelihood of onward transmission. However, a substantial minority of people living with HIV (PLHIV) is not currently taking ART. In a context in which guidelines for HIV treatment are increasingly recommending earlier initiation and initiation for prevention purposes, CSRH undertook an NHMRC-funded study with the overall objective to investigate the extent to which PLHIV are not currently taking ART and to better understand the reasons PLHIV have for not taking ART.

As part of this project, we have undertaken two online surveys to investigate (changes in) the attitudes and practices of accredited antiretroviral treatment prescribers regarding ART initiation. According to prescribers participating in the first survey, undertaken in 2012, about 70%-80% of all their HIV-positive patients were receiving ART. Regarding the optimal timing of ART initiation, the survey found that prescribers primarily focused on the health benefits for their individual patients (Mao et al, 2013). Changes in prescribers' attitudes

and practices towards earlier ART initiation have been observed in the 2013 survey, with prescribers increasingly favouring earlier initiation of ART.

To identify key clinical, personal, social and structural barriers to treatment uptake by PLHIV, and reasons for ART non-use, a mixed-method approach is applied. This encompassed two semi-structured, face-to-face, group discussions to explore views and experiences of HIV treatment officers (n=11), who are peers providing information and support for PLHIV regarding HIV-related treatment decisions, particularly for those newly diagnosed with HIV. Findings suggest that, whilst HIV treatment officers are generally supportive of ART initiation as early as possible, they identify a number of challenges in people making a transition to taking daily ART.

Subsequently, in-depth interviews were conducted, mostly by phone, with PLHIV across Australia who are not currently taking ART (n=27). These interviews provide rich descriptions of the perspective of affected individuals and enable a comprehensive understanding of the reasons for deferring or avoiding ART in a context in which expectations regarding timely initiation and sustained use of ART are increasing amongst clinicians, community leaders and peers. An online survey targeting all adult PLHIV in Australia is scheduled to be launched at the end of 2014. The survey aims to assess and compare beliefs and concerns about ART between PLHIV who are currently taking ART, those who are ART experienced but not currently taking ART and those who are ART naive.

This comprehensive assessment of factors related to ART use extends a recent study based on 1,911 responses of HIV positive participants in Gay Community Periodic Surveys (GCPS) between 2010 and 2012 (Mao, de Wit, Kippax, Prestage, & Holt, 2014). These men were on average 44 years old and had been living with HIV for at least ten years. Close to 80% were taking ART, of whom more than 90% reported an undetectable viral load. There was a moderate increase in ART uptake over the three-year period. Various clinical (having received an HIV diagnosis in the past three years and no annual screening for sexually transmissible infections), personal (younger age) and structural (not receiving social welfare payments) factors were found to be independently associated with ART non-use (Mao et al, 2014).

In addition to generating new data, we have also used a number of existing HIV surveillance data (e.g., clinical data from the Australian HIV Observational Database and community data from the GCPS) to produce robust population estimates of ART coverage and HIV viral suppression amongst PLHIV in Australia. Lastly, in this project, mathematical modelling was undertaken to assess the potential impact of increased ART coverage on reducing the HIV epidemic in Australia. This modelling highlights the importance of combining the promotion of HIV testing and ART uptake to substantially reduce new HIV infections (Jansson, Kerr, & Wilson, 2014).

### 5.3 Hepatitis C testing, knowledge and risk practice among gay men

Max Hopwood, Toby Lea and Peter Aggleton

Gay men and other men who have sex with men are at a heightened risk of hepatitis C virus (HCV) infection via both drug use and sexual risk practices. In 2013, a national online cross-sectional survey of 474 gay and bisexual men was conducted to examine a broad range of social issues related to hepatitis C. The mean age of respondents was 38 years and most identified as gay (90%). Based on self-report, 32% of respondents were HIV-positive, 3% were HCV-positive and 9% were HIV/HCV co-infected.

Respondents reported high levels of hepatitis C testing: 80% of men had ever been tested and 58% reported testing in the previous 12 months. Among those who had not been tested, barriers included having never been offered a test, low risk perception and uncertainties about practical aspects, such as what a test involved and where to obtain one. Knowledge about hepatitis C and its treatment was moderate. There was a high degree of uncertainty about specific issues, such as treatment eligibility among people with HIV/HCV co-infection and the potential for re-infection following treatment. This suggests that further hepatitis C education is needed for gay men.

A high proportion of respondents reported injecting drug use (15% in the previous six months). Crystal methamphetamine was the drug most commonly injected (75%) and was typically injected before or during sex (95%). A high proportion of men reported reusing and passing on needles, syringes and other injecting equipment in the six months prior to the study (41%), and sharing commonly occurred with regular and casual sex partners. Sharing of injecting equipment remains the primary risk factor for hepatitis C transmission. These findings suggest a need for continued dissemination of harm reduction information in relation to the risk of acquiring hepatitis C, as well as a need for further research into gay men's injecting practices to guide harm reduction responses.

### 5.4 YouMe&HIV: Serodiscordant couples in a changing epidemic

Asha Persson

The recent past has witnessed important developments, both in our understanding of HIV and new possibilities for controlling its transmission, most notably the concept of treatment-as-prevention (TasP) and prophylactic technologies (e.g., PrEP, microbicides). Serodiscordant couples have played an important part in the research leading to these discoveries. However, while clinical trials have produced a wealth of data on sexual practices, transmission risk, and the preventive effects of antiretroviral treatment among serodiscordant couples, our knowledge about such couples outside of the narrow confines of controlled studies remains quite limited. This qualitative study addresses a significant research gap by seeking to produce new knowledge of how the emerging HIV "treatment-revolution" might shape the everyday realities of living serodiscordantly among gay and heterosexual couples in metropolitan and regional New South Wales.

In-depth interviews were conducted with 36 participants in serodiscordant relationships (17 HIV-positive and 19 HIV-negative partners), representing 23 couples and 1 throuple in total. This included 15 gay couples, 7 heterosexual couples, 1 heterosexual man/transwoman couple, 1 gay man/transman couple. Preliminary analysis shows that of the 24 positive partners in these couples, 19 were on treatment and three were planning to start in the near future. All positive partners were engaged with HIV care, including regular monitoring of viral load. All negative partners had tested for HIV, with two thirds testing every 3-6 months and one third testing once a year or less. There was a spectrum of sexual practices among these couples: 9 couples (all gay) consistently used condoms for anal sex, 10 couples had condomless sex, 3 couples alternated between condoms and condomless sex, and 2 did not have penetrative sex. Few gay couples used strategic positioning, and over half of all the negative partners in the study were the receptive partner. Two thirds of couples described their relationship as monogamous, and one third had an open relationship, or only played with other sexual partners together.

There was broad awareness of the concept of TasP among these serodiscordant couples, or at least of the effects of treatment on viral load and infectiousness. Many participants clearly saw treatment as key to serodiscordant relationships, because it enabled a sense of sexual safety and thereby a sense of possibility. Some emerging themes include: TasP now makes a serodiscordant relationship possible, TasP lessens persistent anxieties about transmission, and TasP enables an expansion of sexual repertoires. Among the positive partners, there was a tendency to describe treatment as a “given”, when in a serodiscordant relationship, as “doing the right thing”, and as “worth any downsides”. Negative partners were also strongly in favour of treatment, for both health and prevention reasons. Although some were critical of TasP as a general prevention policy, both positive and negative partners were overwhelmingly positive towards the mounting research and support for TasP. There were different perspectives on HIV risk in relation to TasP, as suggested by three emerging themes:

- TasP provides an extra layer of protection alongside ongoing condom use, because it is not safe enough on its own. This was the most common theme, mainly in gay couples.
- TasP provides welcome relief, reassurance or validation for those who already practise unprotected sex. This was a common theme among heterosexual couples.
- TasP provides permission to consider unprotected sex, for those who dislike condoms or have latex-sensitivity. This was not the most common theme. However, although TasP had little effect on already established sexual practices among couples, this theme was noticeable among some newer couples. As such, it is perhaps the most interesting theme in terms of potential future shifts in serodiscordant sexual practices as TasP becomes more widely known and used.

Regardless of diverse sexual practices and risk perceptions, all couples had found a way to work out their own sexual boundaries and risk-reduction strategies. The picture of serodiscordant relationships emerging in the study is one of both partners' considerable commitment to, and care for, each other's well-being. A detailed analysis of emerging themes is in progress.

## 5.5 Future development - Factors associated with successful failure of antiretroviral treatment

Limin Mao and John de Wit

Antiretroviral treatment (ART) for HIV is highly effective, but each year a substantial minority (estimated at about 10%) of PLHIV in Australia stop or switch regimen because of toxicity or virological failure, or are lost to follow-up by health care providers. Reasons for ART failure, in particular treatment interruption or cessation, are poorly understood. While a range of clinical, treatment-related, psychosocial and socioeconomic factors increase the risk of ART failure, one potentially important factor is the out-of-pocket expenditure to obtain ART and treatment for co-morbidities, including co-payments to hospital pharmacies for dispensing ART.

CSRH is collaborating on a study led by the Centre for Applied Medical Research, St. Vincent's Hospital, Sydney, with the objective to identify the contribution of financial factors, in particular the requirement for patient co-payments to obtain ART and other treatments, to the risk of ART failure. Eligible participants for this prospective clinical cohort study are people diagnosed with HIV, who are 18 years or older, currently living and accessing HIV clinical care in Australia and have achieved an undetectable viral load (defined as plasma HIV RNA <50 copies/ml) in the 3 months prior to baseline enrolment.

To date, 300 patients have provided written informed consent and have subsequently been enrolled into the study. A total of ten sites have initiated recruitment: St Vincent's Hospital (Sydney), Holdsworth House Medical Practice (Sydney), East Sydney Doctors, Sydney Sexual Health Centre, The Albion Centre (Sydney), Western Sydney Sexual Health Clinic, SHAIDS Clinic (Lismore, New South Wales), Canberra Sexual Health Centre, The Centre Clinic (Melbourne) and Cairns Sexual Health Service. These study sites represent various types of HIV clinical care services, encompassing hospital-based outpatient clinics, community-based general practices and sexual health clinics.

Self-report data are collected through electronic questionnaires which have been made available through touch-screen tablet computers at each site. Each participant is expected to complete a questionnaire and undertake a brief, standard cognitive screening (Cogstate) online at baseline and each annual follow-up round. In addition, an electronic case report form is completed by trained site coordinators every six months in order to document the clinical history and latest laboratory results of the corresponding patient. A maximum of 24 months follow-up is planned.

Preliminary findings suggest that the rate of self-reported ART adherence is suboptimal, even though all patients had an undetectable viral load in the three months prior to enrolment. It is noteworthy that a considerable proportion of the patients reported needing financial assistance with HIV-related or non-HIV-related issues (including basic daily living costs) in the 12 months prior to the baseline survey. It is likely that the study will detect an association between ART non-adherence or interruption and financial difficulties. In addition, poor mental health, which is reported by a considerable proportion of study participants, is likely to be another important factor in the failure of ART.

## Spotlight – The Positive Children’s Study

Asha Persson and Christy Newman

Young people growing up with perinatally acquired HIV are an emerging subpopulation in the HIV-epidemic in resource-rich settings. They are widely described in the growing research literature as a “unique” and “challenging” client group, facing a multitude of clinical, neurocognitive, behavioural and psychosocial challenges which are thought to complicate their transition through adolescence and young adulthood and may have a negative impact on health outcomes and HIV prevention. HIV-related stigma and secrecy are thought to contribute to these challenges and profoundly shape how these young people see themselves and live their lives.

In Australia, the current population of young people growing up with HIV is approximately 80, about half of who were born in Australia and half in sub-Saharan and other high prevalence countries. While their small numbers and survival are signs of tremendous success, it also means that these young people are growing up as a culturally invisible and often socially isolated group of individuals. Our exploratory qualitative study is the first in Australia to examine key issues for children with perinatally acquired HIV who are transitioning to adolescence and adulthood.

The study was conducted in collaboration with the Paediatric HIV Service at the Sydney Children’s Hospital. In 2012-2014, in-depth interviews were conducted with 12 young people (eight females, four males), aged 13-21 years and from six different states. The interviews included general questions about origin, family and living conditions, and more specific questions about experiences of health care and treatment, growing up with HIV, stigma, disclosure and, where relevant, sexuality and prevention. We also interviewed 12 clinicians in paediatric and adult health care settings in four different states to get their perspective on working with this population group.

Our study produced a range of interesting findings. In contrast to a tendency in the literature to focus on dysfunctions and negative public health outcomes (Persson & Newman, 2012), the focus among the participating clinicians was on the well-being and resilience of their young clients as they navigate the complex interplay between HIV and adolescence (Persson, Newman, & Miller, 2014). Clinicians anticipated significant client vulnerabilities during transition and worked beyond the boundaries of their roles and service parameters to keep their clients engaged as they moved between paediatric and adult care (Newman, Persson, Miller, & Cama, 2014).

The young people we interviewed were acutely aware of HIV-related stigma and typically kept their HIV status a secret. Although they found this frustrating, it was largely presented as a normal part of their reality and it also gave them the capacity to engage with life freely, blend in with their friends, and shape their own identities. Stigma was not necessarily internalised in the same way it might be for adults. Rather, HIV was seen as a relatively minor issue in their lives with little bearing on how they saw themselves. Having and living with HIV was described as “normal”, as something that can be integrated into life rather than pose an obstacle. Maintaining this normality required a certain amount of “work” to prevent the outside world, friends and peers from turning their HIV status into something abnormal or shameful. That is, they saw themselves as normal kids and adolescents who, unlike most of their peers, have to do a few unusual things, such as take daily medication, see the doctor regularly, and keep a family secret.



# 6. Drug use, risks, and harm reduction



## 6.1 Drug use and injection by participants in Gay Community Periodic Surveys

Limin Mao, Martin Holt and John de Wit

The Gay Community Periodic Surveys (GCPs) include questions about the use of a range of drugs. Table 18 and Figure 15 show the use of selected drugs by men nationally (including every participating state and territory) in the six months prior to the survey. Findings illustrate changes in commonly used recreational drugs among gay men across the country. Table 18 and Figure 15 show that amyl nitrite ('poppers') is the most commonly reported drug by participants in the GCPs. Amyl nitrite is an inhaled drug which is popular among gay men as both a euphoric and muscle relaxant; it is therefore used as both a 'party' drug for dancing and in sexual settings. Poppers use is reported by over a third of men in the GCPs and its use has remained stable since 2004. Cannabis is the second most commonly reported drug, although its use has continued to decline since 2004, mirroring national trends which show generally declining levels of drug use by gay men over the last decade (Lea, Prestage et al, 2013). The use of ecstasy and (meth)amphetamines ('speed' and 'crystal meth'/'ice') has also declined during the ten-year period; the use of amphetamines is now more commonly reported than ecstasy. The use of coCLAlne has been stable since 2004. Bucking the general trend of declining drug use, the use of erectile dysfunction medication like Viagra and Cialis has increased over the last ten years. Erectile dysfunction medication is used by gay men to facilitate sex and its use has been associated with an increased risk of HIV seroconversion (Prestage et al., 2009). In the last three years the use of all listed drugs has stabilised, except ecstasy use, which has fallen.

Any drug injection for recreational purposes remains rare among gay men, although it is more common than in the general population. Table 19 and Figure 16 show the proportions of participating men from Melbourne, Queensland and Sydney who reported any drug injection in the six months prior to the survey, as well as a national trend. It is important to note that, because it is infrequently reported, the rates of drug injection by gay men in Adelaide, Canberra and Perth are not reported separately; data from these locations have been included in the national rate. Nationally, the proportion of men who injected drugs in the six months prior to survey has continued to decline, albeit slowly, from 7.5% in 2004 to 5.1% in 2013. Over the ten-year period and in the past three years, there has been a continuing decline in the proportion of men who injected drugs in Queensland. We have consistently observed that HIV-positive men are more likely to report injecting drug use than HIV-negative men (Lea, Mao et al, 2013). (Meth)amphetamines and steroids are the substances most commonly injected by gay men.

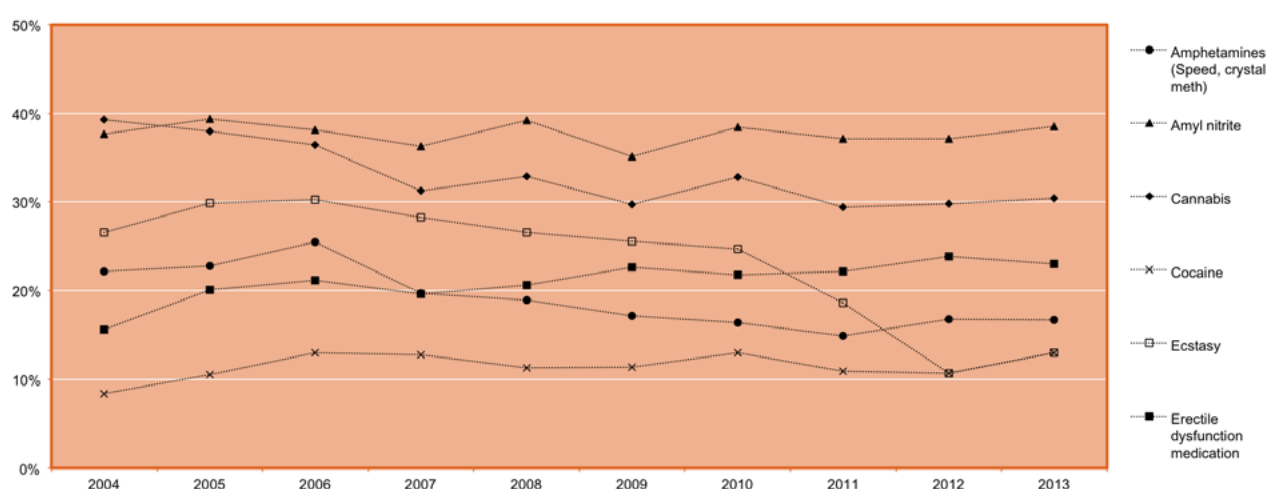
## 6.2 Vulnerable young people in inner-city areas who use alcohol and other drugs:

### Policing and pathways to diversion and care

Researchers, governments and youth workers know there is a small number of young people in the community who are involved in multiple risky activities. They are simultaneously involved with police, the juvenile justice system, and youth and other community services and drugs and alcohol are usually implicated in some way. More often than not, these young people have had difficult lives of poverty, violence, family upheaval, and homelessness. For these reasons the justice system seeks leniency when they commit offences, especially in relation to alcohol and illicit drug use. While Australia has

**Table 18: Men who reported any use of selected recreational drugs in the six months prior to the survey: GCPS, 2004-2013 (all six states or territories)**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
Amphetamines (e.g. 'speed', crystal methamphetamine)	22.2	22.8	25.5	19.7	18.9	17.2	16.4	14.9	16.8	16.7	↓	ns
Amyl nitrite	37.7	39.4	38.1	36.3	39.2	35.1	38.4	37.1	37.1	38.5	ns	ns
Cannabis	39.3	38.0	36.4	31.3	32.9	29.7	32.8	29.4	29.8	30.4	↓	ns
Cocaine	8.4	10.5	13.0	12.8	11.3	11.4	13.0	10.9	10.7	13.0	ns	ns
Ecstasy	26.6	29.9	30.3	28.3	26.6	25.6	24.7	18.6	10.7	13.0	↓	↓
Erectile dysfunction medication (e.g. Viagra, Cialis)	15.6	20.1	21.2	19.6	20.6	22.6	21.8	22.2	23.9	23.0	↑	ns



**Figure 15: Men who reported any use of selected recreational drugs in the six months prior to the survey: GCPS, 2004-2013 (all six states or territories)**

**Table 19: Men who reported any injecting drug use in the six months prior to the survey: GCPS, 2004-2013**

	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	Overall trend	Trend in last 3 years
Melbourne	5.4	6.2	8.0	4.9	6.2	6.7	4.5	4.9	9.5	3.9	ns	ns
Queensland	7.7	4.0	8.0	2.9	5.1	6.1	5.3	5.9	3.0	4.0	↓	↓
Sydney	10.2	6.7	6.5	8.4	8.1	7.8	6.9	5.2	5.9	6.2	↓	ns
All six states/ territories	7.5	5.7	7.2	5.6	6.6	6.5	5.4	5.0	6.1	5.1	↓	ns

comprehensive (and often complicated) diversion programs in place for young people who offend, there is still opportunity to improve pathways into treatment and care, rather than direct them into the courts and detention. Police play an important first-stage role in deciding whether a young offender is directed into the criminal system or diverted into treatment.

CSRH, in collaboration with Turning Point Alcohol and Drug Centre, are conducting a study which investigates police and their diversion practices in relation to young substance users. The project is being led by Dr Sarah MacLean at Turning Point Alcohol and Drug Centre in Victoria, with the New South Wales component being led by Dr Joanne Bryant at CSRH. Other investigators include Dr Rachael Green, Associate David Best, Professor Robin Room, Mr Andrew Bruun and Mr Jake Rance. The project will describe the opportunities to improve

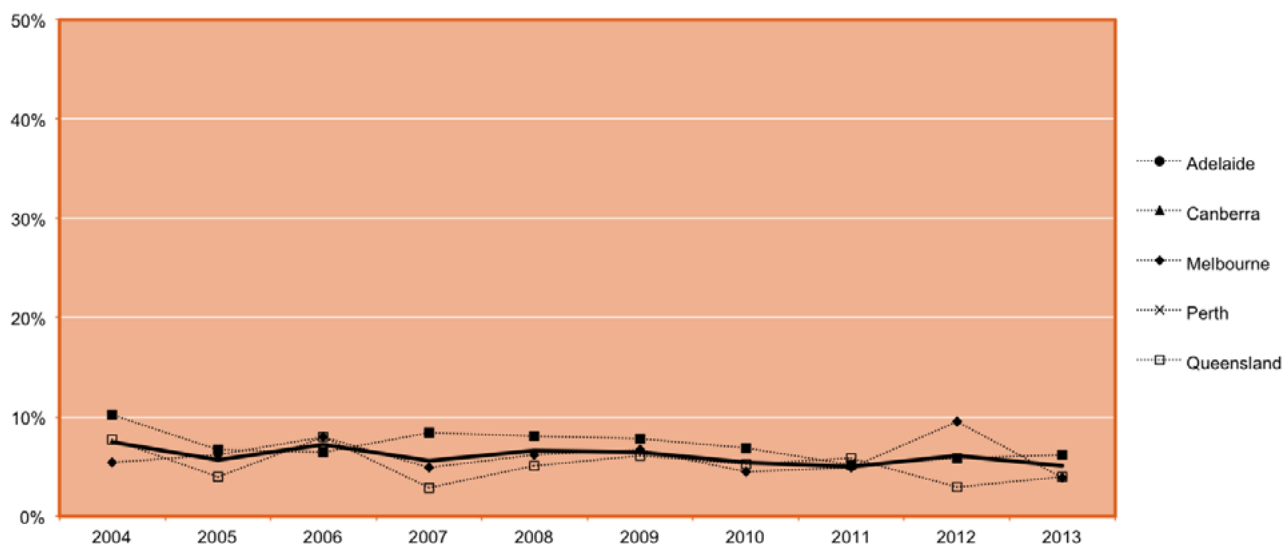
young people's engagement in diversion. The project also aims to produce training resources to support police in their diversion practices. The project uses a mixed method design, combining existing survey data in New South Wales and Victoria with data in-depth newly collected through interviews during the course of the project. Interviews have been conducted with police, young substance users aged 16-24 years, and staff of youth-focused alcohol and drug services.

### 6.3 Project 1626: Hepatitis C knowledge and exposure to injecting drug use among young people

Toby Lea, Joanne Bryant and Carla Treloar

Young people who have recently commenced injecting drugs are a priority population for hepatitis C prevention, because





**Figure 16: Men who reported any injecting drug use in the six months prior to the survey: GCPS, 2004-2013**

of the high risk of acquiring hepatitis C shortly after initiating injecting. Young people who are socially engaged with people who inject drugs may be at a high risk of transitioning to injecting, and as such are also an important target for hepatitis C prevention and education. We conducted a cross-sectional, online survey of young people aged 16-26 in New South Wales to examine knowledge about hepatitis C, and factors associated with higher levels of hepatitis C knowledge (including whether young people who had been exposed to injecting had different levels of knowledge to young people with no exposure to injecting). The study also aimed to assess the extent to which online methods were successful in attracting and recruiting young people exposed to injecting, and constituted a pilot for a periodic survey.

The survey was completed by 757 respondents, the majority of whom were recruited via advertisements on Facebook. Most respondents were female (59%), of Anglo-Australian cultural background (71%), identified as heterosexual (79%), had completed high school (75%), and lived in their parental or family home (69%). A small number of respondents reported having experienced problems at school or at work (6%), or with the police or criminal justice system (4%). Forty percent of respondents reported illicit drug use in the previous 12 months; a small proportion of respondents reported use of drugs which could be injected, such as cocaine (8%), methamphetamine (6%), heroin (0.4%), and other opioids (1%). Very few respondents reported having ever injected drugs (1%). Eleven percent of respondents reported exposure to injecting in the previous 12 months, either by having close friends or a partner (e.g., boyfriend or girlfriend) who injected, or having been offered drugs to inject.

Respondents generally had moderate to good levels of knowledge about hepatitis C transmission and its health consequences, but this varied considerably between individual knowledge items. The average number of correct knowledge items was 7, with a maximum of 13. Higher levels of hepatitis C knowledge were associated with a range of factors, including older age, identifying as lesbian or gay, higher educational attainment, and being in full-time employment. In addition, illicit drug use in the previous 12 months was associated with higher levels of hepatitis C knowledge. However, hepatitis C knowledge among respondents who had been exposed to injecting did not differ significantly from respondents who had not been exposed to injecting.

We found moderate to good levels of knowledge about hepatitis C in a sample of young people in New South Wales,

of whom few reported indicators of social disadvantage, use of drugs which can be injected or exposure to injecting drug use. Very few had ever injected drugs. This suggests that the majority of these young people are unlikely to initiate injecting drug use. Online methods were not successful in recruiting a high proportion of young people at risk of transitioning to injecting. Other sampling methods should be explored to capture this at-risk population.

#### 6.4 Perceived discrimination and injecting risk among people who inject drugs attending Needle and Syringe Programs in Sydney

Loren Brener

There is a substantial body of research which indicates that stigma and discrimination have negative consequences for both healthcare delivery and health outcomes of people who inject drugs (PWID). Less well researched is the association between perceived discrimination and engagement in risky behaviours. The limited available research shows that stigma and discrimination can result in increased adverse health behaviours and risk taking, such as smoking and risky sexual behaviours. Nested in a broader project, the aim of this sub-study was to investigate whether perceived discrimination from health workers in needle and syringe programs (NSPs) is associated with increased engagement in injecting risk practices such as the sharing of injecting equipment (Wilson, Brener, Mao, & Treloar, in press).

Two hundred and thirty six participants were recruited from eight NSP sites in Western Sydney. Participants who reported greater perceived discrimination from NSP staff were significantly more likely to report being injected by someone else after that person had injected themselves, and reusing a needle or syringe in the last month. Sharing of injecting equipment was also associated with injecting in a public place, but sharing practices were not associated with perceived discrimination from health care workers who were not from NSPs. Additionally, no significant relationship was found between frequency of NSP use and perceived stigma and discrimination.

These findings suggest that continued sharing of injecting equipment may be related to a range of other personal and social factors, in addition to a lack of access to equipment. This has led to the design of a new study assessing the

relationship between sharing of injecting equipment and implicit and explicit internalised stigma by PWID, in an attempt to increase understanding of psychosocial factors which may explain continued injection risk practices, especially in locations where access to equipment and needle and syringe coverage is good.

## 6.5 Future developments – Experiences of addiction, treatment and recovery

Carla Treloar

This project is the first of its kind, both in Australia and globally. Funded by the Australian Research Council (2014-2016), it will collect and analyse the personal accounts of people who describe themselves as having an addiction, and present these (anonymised) accounts in textual, audio and re-enacted video form on a publicly accessible website. The study has emerged in response to the lack of reliable knowledge in Australia of how people experience addiction in their lives. This experience is complicated by the modest success of treatment for alcohol and drug dependence and the stigma accompanying it. The aim of the study is to generate much-needed new insights into the range of experiences in the lives of people who consider themselves to have a drug addiction or dependence. How do people manage this aspect of their lives? How do they cope with the stigma associated with it? What kind of help do they seek, where necessary? What do ideas of wellbeing or recovery mean to them? What resources are important to them?

These questions will be explored through sixty in-depth interviews with affected individuals in Victoria and New South Wales, from both urban and regional areas. To capture a diverse range of experiences, types of drugs used, ages, ethnicities, socio-economic backgrounds and treatment experiences, the project will take a maximum-variation approach to recruitment. It also aims to interview people who consume more than one drug and who have mental health problems and other health conditions. Anonymous excerpts from the interviews will be included on the website, allowing access to a range of addiction experiences which include but exceed the most commonly presented stories of crisis and recovery. As part of the Healthtalkonline Australia research consortium (DIPEX Australia), the website will provide otherwise inaccessible information to affected individuals, health professionals and the general public.

## Spotlight – Surveillance and prevention of viral hepatitis amongst prisoners

Carla Treloar

This NHMRC-funded project recruited a sample of prison inmates with varying degrees of exposure to hepatitis C and risk factors. Participants were recruited from the ongoing Hepatitis C Incidence and Transmission Study (HITS-p), led by UNSW investigators. To date, 23 prison inmates have been recruited and interviewed (8 women and 15 men). This group includes six participants with documented hepatitis C acquisition in prison. That is, they have been continuously incarcerated and have documented negative and then positive hepatitis C tests. Among the six participants known to have become infected with hepatitis C in prison were four men and two women. The circumstances of infection these participants reported were primarily sharing of equipment for injecting drug use. In the absence of prison-based needle and syringe programs, participants made a range of decisions about how to reduce the risk of hepatitis C, including variable practices regarding and belief in the efficacy of cleaning of equipment. Future analyses will focus on the experience of tattooing and violence in prisons as possible risks for hepatitis C transmission.

# 7. Prevention and treatment of viral hepatitis



## 7.1 Understanding and preventing hepatitis C in sexual partnerships

Carla Treloar

CSRH is undertaking an NHMRC-funded study in collaboration with external colleagues, including Associate Professor Suzanne Fraser (Curtin University), Professor Tim Rhodes (London School of Hygiene and Tropical Medicine), and Ms Nicky Bath (General Manager, New South Wales Users and AIDS Association). This project involves a specific focus on couples as the site of hepatitis C risk and prevention, in the context of epidemiological evidence showing that equipment sharing is high among sexual partners. We aimed to recruit people in heterosexual relationships in which both partners inject drugs. Data collection has been completed, with a total of 80 people interviewed (40 in New South Wales and 40 in Victoria), mostly involving both partners of a couple (interviewed separately). We have recruited couples who are both hepatitis C positive, both hepatitis C negative, and couples in which one partner has hepatitis C and the other does not. The sample also includes people of a range of ages, and with different experiences regarding sharing injecting equipment.

Data analyses will include investigating the obstacles that couples experience in discussing and acting on hepatitis C prevention advice in sexual partnerships, with attention paid to differences between serodiscordant, negative seroconcordant and positive seroconcordant partnerships. We will also seek to identify and document effective modes of negotiation and strategies employed around hepatitis C prevention in sexual partnerships, where these occur. We have also interviewed front-line workers in New South Wales and Victoria to explore how they approach working with couples, either jointly or with one partner. These interviews also explored the training which front-line workers receive to effectively address the needs of clients.

## 7.2 Delivery of hepatitis C care and treatment for Aboriginal people

Carla Treloar

This project was conducted as part of an evaluation of a New South Wales Ministry of Health program. We conducted interviews with over 200 Aboriginal people living with hepatitis C, and follow-up interviews were undertaken with 39 participants. Results from this sample were overall consistent with findings from other studies in relation to levels of knowledge, referral to specialists, and uptake of treatment. Participants reported significant levels of perceived stigma in relation to hepatitis C and Aboriginality. Participants chose a range of services, Aboriginal community controlled as well as mainstream, for their hepatitis C care, although many reported that their hepatitis C diagnosis was provided with little information to support them in living with and managing hepatitis C. The in-depth interviews explored these issues in more detail, including the experience of multiple or overlapping stigmas, particularly relating to hepatitis C, injecting drug use and being Aboriginal.

## 7.3 Discrimination by health care workers versus discrimination by others: Countervailing forces on HCV treatment intentions

Loren Brener

Although there have been advances in hepatitis C treatment, treatment uptake remains low, especially amongst people who inject drugs (PWID). Stigma and discrimination by health care workers towards people with hepatitis C has been commonly reported. Experiencing or perceiving discrimination is known to have a negative impact on treatment uptake and retention. This study explored whether hepatitis C-related stigma and discrimination impacts on treatment access and uptake (Brener, Horwitz, von Hippel, Bryant, & Treloar, in press). Using a social identity theory approach, the study assessed whether perceiving hepatitis C-related discrimination can

actually make uptake of hepatitis C treatment more likely, in an attempt to remove the stigmatising illness. Specifically, the study tests the hypothesis that experiencing discrimination which is perceived as directed at the self will be more strongly related to intentions to uptake of hepatitis C treatment than believing people with hepatitis C in general are discriminated against. In contrast, and consistent with previous research, it is hypothesised that actual experiences of hepatitis C-related discrimination from health workers is related to decreased intentions to seek HCV treatment.

The study was conducted in a sample of 416 people in New South Wales who acquired hepatitis C from injecting drug use. Participants were asked about their experiences of perceived discrimination which they felt was directed towards themselves as well as perceived discrimination directed people with hepatitis C as a group. Results indicate that discrimination towards the self is a more powerful motivator of treatment intentions than discrimination aimed at the group. This confirms that, where possible, stigmatised people will try and change their stigmatised status. Additionally, the study also identified the source of discrimination as being important, with people who reported that they had experienced discrimination from a health worker having lower intentions to take up hepatitis C treatment in the future. As a whole, the findings indicate that while perceived discrimination is commonly thought to act as a barrier to treatment uptake, to effectively increase hepatitis C treatment uptake it is important to recognise that its relationship with stigma is complex.

#### 7.4 Mental health support workers' attitudes towards hepatitis C and injecting drug use among clients with a mental illness

Loren Brenner

Although the prevalence of hepatitis C amongst people with a mental illness is estimated to be substantially higher than in the general population, this has received little research attention in Australia. Hepatitis C is highly stigmatised, which largely results from its association with injecting drug use. Mental illness is also stigmatised, and hence people with a mental illness and hepatitis C may face a type of double stigma. CSRH, in collaboration with Aftercare, conducted a study to assess the impact of hepatitis C-related stigma on the health outcomes of people with a mental illness. This project involved a survey of support workers for people with a mental illness and consultations with clients and staff.

Findings show that workers' attitudes towards people with hepatitis C and people who inject drugs were not related to views about their own capabilities or about client recovery (Brenner, Rose, Treloar, Cama, & Whiticker, 2014). Attitudes towards people who inject were, however, related to the level of comfort support workers felt in working in the client's home. This has important implications for community outreach services, as counselling is often home-based. The study also documents that the knowledge of support workers regarding hepatitis C is only moderate and there are significant knowledge gaps around transmission and treatment of hepatitis C (Rose, Cama, Brenner, & Treloar, 2013). Additionally, greater knowledge about hepatitis C was significantly associated with more positive attitudes towards people who inject drugs.

Given that people with mental illness are at higher risk of acquiring hepatitis C, these results point to the need for education targeted at support workers of people with mental illness who inject drugs, to increase knowledge of hepatitis C and promote positive attitudes. This research illustrates that there is a particular need to upskill mental health support workers to enable them to feel more comfortable working with clients with hepatitis C, and to lessen any additional burden of stigma on those also coping with a mental illness.

#### 7.5 Future development – Evaluating viral hepatitis and sexual health promotion among Aboriginal people in Western Sydney

Carla Treloar

Aboriginal people are a key priority population for action in relation to viral hepatitis and STIs. An innovative program has been running in western Sydney which makes use of a peer-driven intervention to provide health promotion, opportunistic screening and vaccination to the local Aboriginal community. The "Deadly Liver Mob" involves Aboriginal NSP and sexual health workers identifying clients of the Needle and Syringe Program to educate their peers about hepatitis C risks. Initial participants are reimbursed for their contributions based on how well their peers can recall relevant hepatitis C knowledge. This approach was previously used by the health service to engage young people who inject drugs in initiatives regarding hepatitis C and safer injecting. The Deadly Liver Mob also offers participants assessment and screening at the co-located sexual health service, including vaccination for hepatitis B virus infection, treatment for any diagnosed STIs, and referral for hepatitis C assessment and care. Each engagement with care is incentivized. In the first 12 months of operation, the Deadly Liver Mob had engaged and delivered hepatitis C education to over 400 Aboriginal people.

While these initial results are promising, more work is required to ascertain whether the program has met its objectives of engaging and retaining Aboriginal people in care. CSRH has been working with the health service to develop an evaluation framework aimed at examining the extent to which participants have engaged with STI and viral hepatitis health care. The CSRH framework also examines, using qualitative methods, the experience of front-line workers, managers and clients. If replication of the Deadly Liver Mob is to be considered in other areas, information and analysis is required regarding the ways in which the workforce needs to be supported, as well as any organizational factors that need to be considered to successfully implement the program. Of key concern is the experience of the Aboriginal community. The evaluation design will include interviews with Aboriginal clients of the Deadly Liver Mob as well as people who chose not to engage with the project

#### Spotlight – Evaluation of NSP service models in Western Sydney

Carla Treloar

CSRH has worked with the Needle and Syringe Program (NSP) of two health districts in western Sydney, with the aim of examining the best way to deploy NSP resources to meet the overall objectives of the program and to promote the health and well-being of clients. This project encompassed a number of activities, including a survey of over 230 NSP clients, interviews with more than 30 NSP clients, and interviews with NSP staff. Some of the key insights from this project are concerned with improving understanding of the needs of NSP clients in relation to hepatitis C prevention and how the NSP service can best meet these needs. For example, the findings of the survey indicate that a small group of participants account for the majority of needs, such as high rates of hepatitis C and equipment sharing, along with a profile of complex life needs (such as mental health and physical health concerns). This suggests that NSP services could tailor their efforts to focus not only on the distribution of equipment, but also on other factors which influence sharing of equipment. We have also examined NSP clients' trust in NSP services and how that may generate possibilities for other services to be conducted within NSPs, and investigated the work done by NSP staff in setting up and maintaining NSP outlets hosted by other health services.



# 8. Current climate - Stigma regarding HIV, viral hepatitis and affected communities

John de Wit and Carla Treloar

Stigma is increasingly recognised globally as a critical barrier to effective responses to bloodborne viruses (BBVs) and sexually transmissible infections (STIs). Much of this stigma regarding BBVs and STIs plays out in health and social services settings, exacerbating its impact. Furthermore, marginalised individuals and social groups may experience multiple or layered social stigmas which adversely affect their health and wellbeing. The importance of preventing and addressing stigma and discrimination has continuously informed the Australian response to BBVs and STIs. Reflecting strong commitment to effective responses to social stigma, the five current Australian National Strategies regarding HIV, viral hepatitis and sexually transmissible infections, including in Indigenous peoples, each contain a clear objective to eliminate the negative impact of stigma, discrimination and legal and human rights issues on people's health. Australia has long prided itself on a partnership approach to BBVs/STIs with researchers, policy makers, health workers and affected community working collaboratively to advance agendas in each area of work. CSRH is working to bring the partnership together and build on preliminary work already undertaken by CSRH to develop intervention-based research in order to counter stigma and discrimination.

CSRH is both a national and international leader in research around the stigma and discrimination associated with BBVs and STIs. Some of the seminal work currently undertaken by the centre is reported elsewhere in this report, and is concerned with the role or perceived discrimination in injecting risk, the role of discrimination by health care workers on hepatitis C treatment uptake, and the role of support workers' attitudes on the care received by people with mental health problems. In addition, CSRH has previously investigated HIV-related stigma and a serostatus divide in the gay community, examined differences in experience, impact and resilience regarding stigma among people with HIV, and evaluated the effects of a positive speaker program for people living with hepatitis C. CSRH has also undertaken a partnership consultation during its most recent conference on social research in HIV, viral hepatitis and related diseases. At this workshop, representatives of key national and state partner organisations discussed the key research required to address stigma and discrimination in their field of work. This event has contributed to establishing a network of organisations that seek to respond to stigma and discrimination, and provided the groundwork to conduct further work.

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