



Annual Report of Trends in Behaviour 2016

HIV/AIDS, hepatitis and sexually transmissible infections in Australia

Never Stand Still

Arts & Social Sciences

Centre for Social Research in Health

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Glossary & report symbols

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

ARTB – Annual Report of Trends in Behaviour

BBV – blood borne virus

CALD – culturally and linguistically diverse

CLAI – condomless anal intercourse

CLAIC – condomless anal intercourse with casual partners

CLAIR – condomless anal intercourse with regular partners

CSRH – Centre for Social Research in Health

DAA – Directly Acting Antiviral

DVL – detectable viral load

FSP – Framework Support Program

GBM – gay and bisexual men

GLB – gay, lesbian and bisexual

GCPS – Gay Community Periodic Survey(s)

GPs – general practitioners, medical practitioners working in the community who provide comprehensive health care for people of all ages; in some countries known as family doctors/physicians

HBV – hepatitis B virus

HCV – hepatitis C virus

HIV – human immunodeficiency virus

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

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

IYLL – It's Your Love Life (periodic survey)

LHD – Local Health District

MSM – men who have sex with men

n – denotes the frequency of responses or classifications

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

NHMRC – National Health and Medical Research Council

ns – non-significant

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

OST – opioid substitution therapy

PEP – 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

PrEP – 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

sero-concordant – relationship in which both partners are of the same HIV status, either HIV-positive or HIV-negative

sero-discordant – 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)

sero-nonconcordant – 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)

serosorting – there are multiple definitions of serosorting; for the purpose 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

SHPF – sexual health promotion framework

STI – sexually transmissible infection

TasP – treatment as prevention

UDVL – undetectable viral load

Report symbols

The following symbols are used throughout the report to indicate different types of content:



Trends in behaviour



Single study

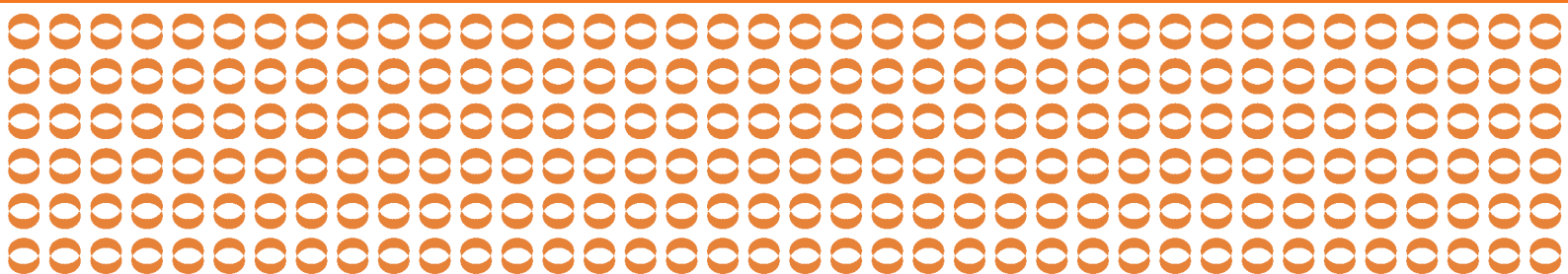


Commentary



New development

Executive summary



Overview

Introduction

The publication of the Annual Report of Trends in Behaviour (ARTB) in 2016 sits within a very dynamic context for HIV and for hepatitis C. Some of the indicators that we have relied on from the early days are no longer enough to understand these changes and the growing complexity of the field. This complexity generates additional questions to consider and requires ongoing adaption of surveillance responses in order to capture these advances in biomedical technologies and communities' evolving practices. We also need to take additional care to unpack and interpret the data we have generated to continue to contribute to the Australian blood borne virus (BBV) and sexually transmissible infection (STI) responses.

Throughout the ARTB we make comment on not only the meanings of the data we have generated, but the methods by which they were obtained including the need to update questions and measures and approaches. While we seek a stable surveillance system, it must be one that is meaningful to the context and fit for purpose. This takes significant effort to inform ourselves from a range of perspectives, being abreast of clinical and technical advances in medications, from the policy perspective in relation to emerging strategic interests and especially in relation to what is important to the variety of communities affected by BBVs and STIs, including detailed knowledge of the specific needs of communities and differences between them.

This is the most comprehensive ARTB yet. We have reorganised the presentation of material to reflect prevention, care and treatment cascades for a range of BBVs and STIs and priority populations. The wide ranging nature of the report makes it difficult to present a complete summary. Different audiences will seek information from various sections of the report. But beyond the cascade approach to measuring risk practices and uptake of treatment, is the need to triangulate with data from a range of other sources.

However, a few key issues stand out:

Gay and other men who have sex with men and HIV prevention

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 HIV prevention strategies. As the use of biomedical technologies become more widespread it is important to understand not only the uptake of these, but

their uptake by different groups and the importance of these findings for ongoing communication with affected communities and delivery of programs. Despite the highest reported rates of uptake of HIV treatments in 2015, belief in the efficacy of treatment as prevention varies significantly between HIV positive and HIV negative or untested men. While use of pre-exposure prophylaxis (PrEP) was low in 2015, there were significant gaps in knowledge identified which will have importance for the roll out of larger PrEP trials currently underway.

Heterosexually identifying young people and STIs

Our work has shown that significant work is required to support young people in relation to their sexual health. Significant knowledge gaps, low rates of condom use and barriers to STI testing (such as knowing where to obtain a test) reported by significant proportions of young people are ongoing challenges for effective STI responses. We look forward to being able to report on these data over time and examine changes in these key indicators.

Models of care for HIV and viral hepatitis

A significant proportion of the Centre for Research in Health (CSRH) research program is focused on understanding the decisions made by people living with HIV and viral hepatitis regarding engagement with care, and subsequently, how systems of care could be adapted to better meet the needs of their clients. Despite overall record levels of HIV treatment uptake, a sizeable proportion of those living with HIV will experience treatment failure or be lost to follow up. How doubts about HIV medicine appear requires an understanding of the influence of individual patient, clinician, workforce and system levels. A similar lens is required to examine how better models of care can be provided to the diverse communities most affected by hepatitis B. For a number of years, our work has sought to examine new models for hepatitis C care, including peer delivered models. The ways in which health services should be “fit for purpose” will transform again from 2016 with new generations of hepatitis C virus (HCV) treatments available for all.

Stigma

One of the strengths of the CSRH research program across all areas has been the continued spotlight thrown on stigma. Stigma is a key focus of this ARTB and underpins many of the analyses whether these are direct examinations of the impacts of stigma or lens with which we interpret findings. We examine the social positions, meanings and identities of BBVs and STIs and communities living with these. We examine the relationships of these social meanings with prevention, care, treatment and broader wellbeing experiences. We have examined the experience of Aboriginal people living with hepatitis C, including the protective effects of community attachment and the impact of stigma on decisions about treatment for HCV. We also flag a future project in which we can report, as an indicator, changes over time in the experience of stigma among key priority populations.

Data summaries

HIV among gay men and other priority populations

Reported data regarding sexual practices and risk among gay men are predominantly collected through the ongoing Gay Community Periodic Surveys (GCPS). Initiated in 1996, the GCPS are conducted in 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 2014, Tasmania was added to the network of GCPS locations. The GCPS deliberately target men who are socially and sexually involved with gay men, and recruit participants at gay community venues and events, sexual health clinics and online. See Appendix A for more information.

Sexual practices and risk reduction in gay men

Data regarding sexual practices and risk among gay men are predominantly collected through the ongoing GCPS. While these surveys show that many indicators of HIV risk among gay men have remained stable, trends in several important indicators suggest emerging challenges in further reducing the HIV epidemic in Australia. The 10-year trends in the proportions of men reporting more than 10 male sexual partners (decrease by about 2%, i.e. 28% in 2006 to 26% in 2015) and no condomless anal intercourse (CLAI) (stable at 52%) point to certain stability in HIV-related risk practices on the one hand. On the other hand, however, there have been substantial increases in the proportions of men engaging in any condomless anal intercourse with regular (CLAIR, increase by 9%, i.e. 46% in 2006 to 55% in 2015) and/or with casual partners (CLAIC, increase by 8%, i.e. 33% in 2006 to 41% in 2015). In particular, increases in CLAI are the most prominent between regular partners perceived to be of the same HIV status (by about one-in-five HIV-negative men); between casual partners after consistent disclosure of HIV-status before sex (i.e. 'serosorting' by about half of men who had any CLAIC, regardless of HIV-status); or relying on HIV-positive men themselves being virally suppressed (by three-quarters of HIV-positive men who had any CLAIC). Taken together, the GCPS data suggests both HIV-positive and HIV-negative gay men tend to gradually shift away from consistent condom use during anal intercourse to non-condom-based behavioural or biologically-based risk reduction strategies on the one hand and avoiding anal intercourse all together on the other hand.

Male partners and safe sex by participants in Gay Community Periodic Surveys

Over the last 10 years, the proportion of men reporting more than 10 male sex partners in the six months prior to survey has fallen across Australia, from 28.3% in 2006 to 26.2% in 2015. This decreasing trend over the 10-year period has been consistent across all participating states and territories, except in Adelaide, Melbourne and Queensland.

The proportion of men who had no CLAI with male partners has remained stable around 52% nationally in the past 10 years but decreased in the past three years. Rates of men who had no CLAI in Melbourne and Queensland have continuously declined, both over the past 10 years and in the most recent three years.

Risk and risk reduction with regular male partners by participants in Gay Community Periodic Surveys

Condomless anal intercourse with regular male partners remains more common than condomless anal intercourse with casual male partners. About half of men with regular partners report any CLAIR, and nationally this rate has increased over the last decade and in the most recent three years (by 7%, i.e. 48% in 2013 to 55% in 2015). Rates of CLAIR have continuously increased in Melbourne and Queensland, both over the past 10 years and in the most recent three years.

Among men with an HIV sero-discordant or sero-nonconcordant regular male partner, nationally the proportion reporting any CLAIR within their relationship has increased to 45% both over the past 10- and three-year periods. While rates have been stable in Sydney, significant increases have occurred in Melbourne and Queensland in the past 10 years.

The proportion of men in sero-concordant HIV-negative relationships who have explicit "negotiated safety agreements", which could reduce HIV transmission in these regular relationships, has declined to 30.4% in 2015. The 10-year trend has declined in most of the participating states and territories, except in Canberra and Sydney.

Risk and risk reduction with casual male partners by participants in Gay Community Periodic Surveys and the HIV Stigma Barometer Study

Over the last 10 years, rates of CLAIC among men with casual partners have increased nationally, from 33.0% in 2006 to 41.2% in 2015 (the highest ever on record). This increasing trend has been consistent across all participating states and territories, except in Canberra and Perth. In the past three years, proportions of men reporting CLAIC have been increased nationally and in Melbourne and Queensland but remained stable in Canberra and Sydney.

Over the past 10 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 with casual partners, the proportion reporting consistent disclosure of their HIV status to all casual partners increased from 18.4% in 2006 and to 28.6% in 2015. This 10-year increasing trend has been consistent across all participating states and territories, except in Canberra and Perth. In the last three years, the rates have increased nationally as well as in Melbourne and Sydney but decreased in Canberra and stabilised in Queensland.

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 to a record-high (43.0% in 2015). This trend has also increased in the past three years.

Apart from the GCPS, another study conducted by CSRH and AFAO (the HIV Stigma Barometer Study) explored other possible drivers of HIV status disclosure, in addition to risk reduction. Among gay men not reported to be HIV-positive, over three-quarters (76.3%) expected their HIV-positive partner to disclose before sex, whereas no more than half (41.6%) expected their HIV-negative partners to do so. Further, 41.7% of these non-HIV-positive participants had consistently disclosed to all of their sexual partners. Of these non-HIV-positive men, those who limited their partners to non-HIV-positive sex partners tend to have less contact with the HIV epidemic (e.g. less likely to have acquaintances being HIV-positive) and be less informed about the complexity of HIV risks and prevention than those who did not limit to non-HIV-positive sex partners.

Condom- and non-condom-based risk-reduction strategies by participants in Gay Community Periodic Surveys

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 HIV prevention strategies. Consistent condom use remains the most practised risk reduction strategy among HIV-negative men (26.3% in 2015, down from 34.3% in 2006). Among HIV-positive men, however, consistent condom use is no longer the most practised risk reduction strategy and has declined most rapidly (HIV-positive men with an undetectable viral load [UDVL]: from 30.0% in 2006 down to 13.4% in 2015; HIV-positive men with a detectable viral load [DVL]: from 24.9% in 2006 down to 10.3% in 2015). Instead, CLAIC without full HIV disclosure becomes the most common practice for HIV-positive men with an UDVL (23.9% in 2006 up to 27.5% in 2015). For HIV-positive men with a DVL, although actual numbers of men were small, CLAIC with full HIV status disclosure becomes the most practised risk reduction strategy (12.9% in 2006 up to 33.3% in 2015).

Among gay men who had engaged in CLAIC in the previous six months, 'serosorting' (ensuring partners of the same HIV-status) becomes the main risk reduction strategy by HIV-negative men and maintaining viral suppression becomes the main strategy by HIV-positive men.

Perceptions of HIV pre-exposure prophylaxis (PrEP) among gay and bisexual men by participants in the PrEPARE Study

Reported use of post-exposure prophylaxis (PEP) and PrEP in the PrEPARE study surveys show willingness to use PrEP has remained relatively stable since 2011, reported by 28%-32% of HIV-negative and untested men, presumably reflecting increased awareness and availability of PrEP in Australia. Willingness to use PrEP remains concentrated among men at increased risk of HIV, including men who engage in CLAIC, those with HIV-positive partners and men who have previously taken PEP.

Now that PrEP availability is rapidly expanding in Australia, particularly in the three Eastern states, it will be interesting to see if willingness to use PrEP remains concentrated among men at higher risk of HIV as recommended in the ASHM prescribing guidelines. Gay men's knowledge of the PrEP guidelines are considered relatively poor with about 38% being aware that PrEP should only be recommended for people at high risk of HIV and 51% being aware that taking PrEP requires regular clinical monitoring.

Use of PEP and PrEP by participants in Gay Community Periodic Surveys

The reported use of PEP and PrEP in the preceding six months by GCPS participants show that only a minority of men has taken them. Close to 4% of HIV-negative men in GCPS had use any prescribed

PrEP in the previous six months (unadjusted data, 3.5% in 2013, 3.3% in 2014 and 3.9% in 2015). No more than 2% of HIV-negative men in GCPS had used any PrEP in the previous six months, most likely acquired without prescription (unadjusted 1.7% in 2013, 1.3% in 2014 and 2.0% in 2015).

Early experience of PrEP in Australia by participants in the VicPrEP Study

Preliminary results show that most participants in the VicPrEP demonstration project (n=92) were gay or bisexual men and over 85% were completely adherent to the PrEP doses as prescribed. Participants reported positive changes in their sexual experiences (i.e. reduced concerns about HIV acquisition, increased confidence about sexual performance, and enhanced sexual pleasure) after PrEP uptake. Negative reactions from their sexual partners (e.g. avoidance) were not commonly reported. Further qualitative findings show the emergence of a new HIV-negative identity due to the protection of PrEP (e.g. being “neg and on PrEP”). There was a substantial increase in the proportion of participants endorsing PrEP effectiveness, from 25% to 49.4% over the first three months of the study. Of note, increases in CLAI during study follow-up have been observed. Although this does not directly translate into increased HIV-related risks given that participants have maintained high adherence to PrEP in the study, the study is likely to show increased STI-related risks over time.

Interest in using rectal microbicides by participants from the PrEPARE Study

Although no rectal microbicide product has yet been approved for use, rectal microbicides could become yet another important HIV bio-behavioural prevention tool in addition to PrEP. For gay men in particular, microbicide products are expected to provide lubrication during anal sex. Of the 1223 HIV-negative and status unknown respondents to one of the PrEPARE surveys, there was moderate interest in rectal microbicides. Potential use of rectal microbicides was independently associated with being born from overseas, perceived likelihood of HIV acquisition, beliefs in products' efficacy, engagement in CLAIC in the past six months and history of PrEP use.

HIV and STI testing among gay men

Ever and recent HIV testing by participants in Gay Community Periodic Surveys

Over the past 10 years, relatively stable trends have been observed in the proportion of participants in the GCPS reporting having ever tested for HIV (from 90.6% in 2006 to 89.5% in 2015), largely due to sampling variation. This decreasing trend has been significant across all participating states and territories, with the exception of Melbourne and Perth where rates remained stable. Rates of having ever tested for HIV were stable across all jurisdictions in the past three years.

Over 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. This rate was stable in the past 10 years but increased in the past three years. The 10-year trends declined in Adelaide and Sydney, increased in Melbourne and Queensland, and remained stable in Canberra and Perth. In 2015, of the non-HIV-positive men who had HIV testing in the previous 12 months, close to 29% (unadjusted data) had been tested at least three times.

Comprehensive STI testing by participants in Gay Community Periodic Surveys

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 25.6% in 2006 to 43.8% in 2015. This increasing trend in comprehensive STI testing has been observed in all participating states and territories, except in Adelaide where it remained stable. In the past three years, a significant increase has been observed in Queensland and Sydney, whereas a decrease trend in Canberra and a stable trend in Melbourne.

Identifying undiagnosed HIV infection

There are common and enduring barriers to HIV testing, such as perceiving oneself to be at low risk of HIV, fearing the consequences of testing (such as discrimination or rejection), and perceiving few benefits of testing. Recent CSRH-led or involved research (including the Count Study led by CSRH) has found that structural barriers and the inconvenience of testing, such as difficulty in finding somewhere to test, getting an appointment, or having to return to the clinic for test results, are

additional impediments to improving the frequency of testing. This has prompted reflection on the ways in which HIV testing is accessed, and has led to new models of service delivery such as community-based and peer-led HIV testing.

HIV sero-discordance and its influence on patterns of HIV and viral load testing by participants in the YouMe&HIV Study

Understanding the different meanings around testing among couples with mixed HIV status is of great value to ensuring the strength of the treatment cascade and how best to support affected populations in engaging with clinical care in a way that makes sense to them.

Living with HIV

Antiretroviral treatment and viral load among HIV-positive gay men in Gay Community Periodic Surveys

Nationally, the proportion of HIV-positive men recruited into the GCPS has been stable around 14%-18% between 2006 and 2015.

Nationally, 86.5% of HIV-positive gay men in the GCPS reported being on antiretroviral treatment (ART) at the time of the survey in 2015 (a record-high). Antiretroviral treatment (ART) uptake had increased significantly over the last 10 years, from 60.1% in 2006. The increasing trends were consistent across Melbourne, Queensland and Sydney in the past 10 years as well as in the most recent three years.

The proportion of HIV-positive men reporting an undetectable viral load at the time of the survey, the majority (>85%) on ART, has increased substantially over the past decade nationally, from 55.2% in 2006 to 87.9% in 2015 (a record-high). These rates have increased nationally and across Sydney, Melbourne and Queensland in the past 10 years as well as in the most recent three years.

Uptake of antiretroviral treatment and treatment decision-making by participants in the ART Use and Non-use Study

ART coverage in Australia continues to increase and is reasonably equitable across different groups at various stages of HIV infection. To further increase ART coverage and promote early ART initiation among people living with HIV in Australia, better clinical care and sustained structural support are needed for HIV management throughout their life course. But first and foremost, providing adequate and appropriate support for people with newly diagnosed HIV to make important decision on when and how to take up ART and engage with a range of clinical and community support services is critical. We need to ensure that the growing focus on treatment uptake avoids contributing to practices or perceptions of coercion, which risk forcing those with even minor doubts into stronger positions of treatment refusal and mistrust in the healthcare system.

SMS Messaging to promote adherence to ART for HIV by participants in the BGF Adherence Study

The main objective of this collaborative study between CSRH and the Bobby Goldsmith Foundation (BGF) is to systematically and comprehensively assess the acceptability and feasibility of SMS messaging delivered to individual's mobile phones as a support mechanism for people living with HIV, particularly by supporting treatment adherence. A six-week SMS campaign was launched by BGF between August and September 2015. The 62 valid online survey responses and 11 subsequent individual phone interviews were completed. This research collaboration is an important endeavour in our pursuit to find easy-to-use, easily implemented and sustainable tools to promote ART adherence, particularly among clients with diverse and complex service needs.

ART adherence, engagement with HIV clinical services by participants in the PAART Study

Each year, a sizable proportion of people diagnosed with HIV in Australia experience ART failure or be considered lost to follow-up from their primary HIV clinical providers. To date, no surveillance/monitoring system has comprehensively assessed types and reasons for ART failure (e.g. non-adherence, intended interruption due to intolerability, side effects or viral resistance) and factors associated with patients' disengagement from HIV clinical care in Australia.

PAART is an open, prospective clinical observational cohort, established in October 2013. Over 500 patients have already been enrolled from 17 clinical sites nationwide into the cohort. A two-year follow-

up from baseline recruitment is currently underway. Data from this observational clinical cohort will provide much needed real-life (i.e. outside of strictly planned clinical trial settings) information on key facilitators and barriers at both patient and clinical system- levels that predict continuous ART use, maintenance of high levels of ART adherence and sustained retention in HIV clinical care in Australia. This project is led by St. Vincent Hospital in Sydney, in collaboration with CSRH and the National Association of People with HIV Australia (NAPWA).

The impact of HIV treatment-related stigma on treatment uptake in the HIV Stigma Audit study

In another survey of 697 people living with HIV, experiences of both treatment-related and more general HIV-related stigma were common, though participants appeared to experience more stigma related to HIV treatment uptake than stigma related to other aspects of HIV. Treatment-related stigma however, was not associated with ART uptake in this study.

STIs among young people

The 'It's Your Love Life' periodic survey contributes new knowledge on the attitudes and practices of heterosexually-identified young people aged 15-29 years living in NSW and their exposure to sexual health promotion initiatives. Results indicate that while knowledge of STIs is generally fair, some gaps remain, with only half (53.9%) of young people knowing that STIs often have no symptoms. While young people in this sample had a high perception of the severity of STIs, most young people felt unlikely to contract and STI. Overall, a majority of heterosexually-identified young people (62.2%) were found to have had sex without condoms in the 12 months prior to the survey. Despite high rates of condomless sex, less than half of sexually active heterosexual young people (42.8%) reported that they had ever tested for STIs. Of those ever tested for any STIs, over half (56.5%) had been tested in the past 12 months. The proportion of participants who had ever tested for any STI differed by gender, with only 36.4% of male participants ever tested compared to 46.1% of female participants. This underscores the importance of strengthening the promotion of STI testing among young men in particular.

A range of individual, social and structural barriers were identified that contribute to low levels of condom use and STI testing. Promoting condom use among heterosexual young people will require comprehensively addressing some individual and social barriers, as well as improving access to free condoms and addressing concerns regarding confidentiality. To promote STI testing, a range of other perceived barriers also need to be addressed, including that only a minority of participants thought their peers would support their testing for STIs. Subjective norms were found to be less supportive of STI testing than that of condom use among heterosexually-identified young people.

The survey also provides new data on heterosexual young people's level of exposure to sexual health messaging and engagement with specific components of the NSW Sexual Health Promotion Framework. While most participating heterosexual young people had to some extent noticed messages promoting either condom use or STI testing, the frequency of their exposure remains moderate. A substantial proportion of young people may not have been exposed to sexual health promotion messages to an extent that would suffice to influence their sexual health-related attitudes and behaviours.

Results also indicate that the proportion of heterosexually-identified participants who reported having received free condoms in the past 12 months was limited (16.8%), and only 9.9% of heterosexually-identified participants were aware of any websites providing sexual health information. This illustrates the importance of improving access to (free) condoms and ensuring young people are aware of the online resources that are available to support their sexual health needs.

Together these findings provide important guidance for the strengthening of sexual health promotion initiatives among young people in NSW and a baseline to evaluate efforts to strengthen young people's engagement with sexual health promotion, including SHPF components which all aim to promote young people's sexual health.

Hepatitis C and other blood-borne viruses among people who inject drugs and other priority populations

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 35%-40% in the six months preceding the survey. The rate of cocaine use has also stabilised at around 10%-13%. The use of other recreational drugs, including cannabis, ecstasy and methamphetamines, has declined since 2006. In contrast, the proportion of men reporting using erectile dysfunction medication, such as Viagra, has increased over the 10-year period, from 21.2% in 2006 to 25.5% in 2015. In the past three years, reported usage of all substances has remained stable, except a decline in ecstasy.

More detailed analysis from the GCPs data focusing on methamphetamine use shows that any use of crystal methamphetamine, but not powder methamphetamines (i.e. speed), in the previous six months has increased slightly since 2010 (9.6% in 2010 to 11.4% in 2014). Mixing crystal methamphetamine use during various sexual contexts, however, is more likely to be adopted by certain sub-groups of gay and bisexual men, placing them at increased risk of both HIV and HCV transmission.

The use of crystal methamphetamine particularly in the context of sexual encounters and poly drug use (with or without injection) among specific groups of gay men suggests an urgent need to provide appropriate harm reduction and treatment services for these men.

Injecting drug use is low but more commonly reported among gay men than in the general population. The 10-year trends have remained stable nationally and across Melbourne, Sydney and Queensland at around 5%-7%. The proportion of gay men reporting any injecting drug use in the previous six months has increased in Melbourne and Queensland and remained stable in Sydney in the last three years.

Sexual identity and substance use in the general Australian population among participants in the National Drug Strategy Household Survey

Gay, lesbian and bisexual (GLB) men and women are more likely to report illicit drug use (non-injection and injection) in the previous 12 months than their heterosexual peers (36% vs 17% for men; 29% vs 11% for women, respectively). GLB men and women are at heightened risk of harms caused particularly by problematic drug use, which calls for more responsive and targeted harm reduction services for this population in Australia.

Hepatitis C risk factors, attitudes and knowledge amongst HIV-positive, -negative and status unknown gay and bisexual men in Australia

Differences were found to exist between HIV-negative, HIV-positive and HIV-untested gay and bisexual men on a range of sexual activities and attitudes associated with HCV. This suggests that HCV education and prevention for gay men may be most effective if tailored according to HIV status.

An online survey conducted in 2013 at CSRH of 405 gay and bisexual men found that increased HCV knowledge was associated with having completed university education, being HIV-positive and a history of drug injection.

Hepatitis C, sex and drug-related risk among Australian gay and bisexual men

Sharing of injecting equipment by Australian gay and bisexual men was associated with crystal methamphetamine use and sexual encounters. In an online survey of 474 gay and bisexual men, of the 71 men who had injected in the previous six months, 41% (n=29) reported sharing ancillary injecting equipment (including needle syringes). This suggests further investigation is needed into the sub-cultural meanings of crystal methamphetamine use, the injection of drugs and the sharing of injecting equipment within social-sexual settings among certain subgroups of gay men in Australia.

Understanding and preventing hepatitis C transmission within heterosexual couples

Couples are a key group to examine for hepatitis C prevention but little attention has been provided to this group. A CSRH qualitative interview study of 40 heterosexual couples who inject drugs found that health promotion efforts should recognise the unique issues that face couples who inject drugs, and that disregarding their partnerships means missed opportunities for understanding decision-making around injecting drug use and HCV prevention.

Peer distribution of sterile injecting equipment

Peer distribution of injecting equipment has been, until recently, illegal in all Australian jurisdictions. CSRH research using qualitative and quantitative methods has demonstrated that peer distribution is relatively frequent and grounded in altruism and concerns for safety. A recent analysis of the legal and regulatory frameworks surround peer distribution conducted by CSRH in collaboration with colleagues at the National Drug and Alcohol Research Centre and Monash University showed that the laws around “peer distribution” of equipment portray people who inject drugs as needing control and oversight. This portrayal undermines the potential to engage people who inject drugs as partners in the prevention of blood-borne viruses. The recent change in three jurisdictions to remove this legal barrier to safer injecting practice is welcome and supported by evidence.

Injecting drug use and BBV risk among Indigenous young people in incarceration

The Goanna study, which included a survey of 2,877 young Aboriginal people, showed a low prevalence of recent injecting, at about 3% of the total sample, although this is a higher proportion than the 1% reported in the general population. We observed a very high rate of receptive needle and syringe sharing (37% of those who had injected) although this is similar to that reported in recent studies of younger injectors. At an average age of 21 years, almost half of the participants in this study who had injected had a history of incarceration.

Pathways to alcohol and other drug care and treatment among young drug users involved with the police in NSW and Victoria

The prevalence of HCV among those incarcerated in juvenile justice facilities is very high. In a project conducted in collaboration with Turning Point Alcohol and Drug Centre, interviews (n=64) were conducted with police, young substance users aged 16-24 years, and staff of youth-focused alcohol and drug services and analysis undertaken of existing survey data. This project showed that understanding how young people can be supported to avoid contact with the criminal justice system is important for the HCV response.

Hepatitis C risk in prison settings

With a range of collaborators, CSRH has been active in commenting on the structural factors affecting hepatitis C risk in prison. Without access to sterile equipment in prison via a formal Needle and Syringe Program, inmates have few means by which to reduce their HCV risk. Programs and policies that can impact this risk include those within the criminal justice system (such as decriminalisation of drug use or alternative, community-based sentencing options for those with drug-related convictions) and within the corrections health system (such as greater access to drug treatment programs).

Knowledge about liver diseases and liver fibrosis assessment among people who inject drugs in alcohol and other drug treatment settings

The LiveRLife study conducted in collaboration with the Kirby Institute and health service partners provided Transient Elastography screening and examined knowledge and attitudes before and after screening. Among 253 people who inject drugs attending drug and alcohol treatment, baseline HCV knowledge scores were moderate, but there were significant gaps in knowledge of HCV antibody testing, factors impacting on HCV disease progression, and response rates to HCV treatment. Transient Elastography as a means to assess liver fibrosis was highly acceptable prior to screening and this acceptability increased after screening.

A review of interventions to increase hepatitis B and hepatitis C screening, assessment and monitoring

Complex, multimodal educational interventions appear to cause behavioural changes that increase rates of testing, vaccination, and treatment. As well, community-based interventions have used a variety of theoretically informed and culturally appropriate strategies to increase uptake of screening, including: the use of lay health workers from culturally and linguistically diverse communities; role-plays; physician education; electronic physician prompts; FibroScan (Transient Elastography) in street-based outreach clinics; nurse-led assessment clinics; hepatitis A and B vaccinations; support; and motivational interviewing-enhanced case management assistance.

These interventions have successfully: engaged people who inject drugs with health services; facilitated hepatitis care coordination in opioid substitution clinics; integrated infectious disease programming in mental health settings and increased acceptance of such services among clients; and lowered costs of screening and reduced waiting times. The following interventions were reported as potentially cost-effective: screening all recent arrivals for chronic HBV and treating recent arrivals; implementing an opt-out, general practitioner HCV case-finding intervention; interventions targeting multiple points along the HCV cascade-of-care; and one-off HCV testing of all people in the birth cohort 1945-1965.

Positive Speaking among people living with hep C

This qualitative study explored the experiences of nine people who were part of the positive speakers program (C-een and Heard) managed by Hepatitis NSW. People who take up positive speaking roles had typically witnessed or experienced hepatitis C-related discrimination, particularly in health care settings. These experiences led speakers to challenge misinformation and negative attitudes and start on a path of advocacy, culminating in participation in positive speaking programs.

The role of Aboriginal community attachment in buffering against stigma and promoting lifestyle changes after hepatitis C diagnosis

In a sample of 203 Aboriginal people living with HCV, those who felt more attached to their Aboriginal community were more likely to show greater resilience, report having a better quality of life and report less HCV-related stigma than those who were not as attached to their Aboriginal community. Attachment to an Aboriginal community was associated with positive lifestyle changes, such as changing their diet, reducing alcohol or illicit drug use, increasing level of exercise and having more regular HCV check-ups after diagnosis with HCV.

Multiple forms of stigma among Aboriginal and Torres Strait Islander people living with hepatitis C

In a qualitative interview study of 39 Aboriginal people living with hepatitis C, another layer of HCV-related stigma was described, which related to the cultural experience of shame, was found to have a profound impact on health and health care outcomes.

The impact of stigma on the provision of health care for people who inject drugs

In a survey of 57 health care workers, participants' beliefs about their colleagues' attitudes impacted on whether they would prescribe pain medication to a person who injected drugs. Those who perceived their work colleagues to be more supportive of harm reduction were more willing to prescribe pain medication, whereas participants' own support for harm reduction had no bearing on their intention to prescribe medication.

Discrimination by health care workers versus discrimination by others: countervailing forces on hepatitis C treatment intentions

In a survey of 416 people who reported having acquired HCV through use of non-sterile injecting equipment, experiencing discrimination from health workers resulted in lower intentions to engage in HCV treatment in the future.

Evaluation of two community-controlled peer services accessing hepatitis C services in OST clinics

In a qualitative interview study (n=42) conducted in collaboration with the Kirby Institute, NUAA (the NSW Users and AIDS Association) and participating health services (part of the ETHOS project), we described the ways in which peer workers may enhance the operation of hepatitis C clinics by engaging clients in education and support, allowing better prepared clients to engage with clinical staff. We conducted interviews with clinic clients (n=31), clinic staff (n=8) and peer workers (n=3) at two clinics in which peer support programs were operating. Although this study was conducted in the era of interferon-based treatments, it is suggested that peer workers remain essential in the era of new treatments to provide ongoing education and support, and to assist in moving the discourse away from the “horror stories” of interferon-based treatments.

Strengthening health workforce capacity to deliver HIV treatment in the community

In a qualitative study of 47 clinicians (including GPs actively prescribing HIV medications, GPs providing other non-medication forms of HIV care, GPs who had stopped maintaining their prescriber status and general practice nurses involved in HIV care), we documented the major challenges experienced by GPs in delivering HIV care and treatment in the community. These challenges included keeping up with knowledge, navigating low caseload and regional issues, balancing quality care with cost factors, and addressing the persistent social stigma associated with HIV.

Structural barriers and facilitators of hepatitis B and hepatitis C treatment and care in primary care settings: a literature review

This review focused primarily on the structural barriers and enablers to hepatitis B and C treatment and care in primary care settings. The management of HBV within primary health care settings was improved by community outreach programs, community-based education programs, and professional education programs.

Similarly, the management of HCV within primary health care settings could be enhanced through the development of social and structural interventions to promote HCV treatment, including strategies to address: stigma reduction; drug dependence; social support; mental health care; infectious disease; improvements in housing; enhanced geographic access to treatment; offsetting transport costs; overcoming the consequences of the criminalisation of illicit drug use; and sensitivity to cultural and ethnic diversity and gender differences. Primary care services should be promoted as community-based, mobile and/or situated in areas where people who inject drugs live, congregate and access health care and other services.

Acknowledgements

We thank our funders, the participants in our studies and the many collaborating organisations and their staff for their invaluable contributions to, and support of, the surveillance and research presented in this report. See the [CSRH website](#) for a list of our partner organisations.



Part I

BBV/STI Prevention

1 Gay men: HIV prevention

1.1 Male partners and safe sex

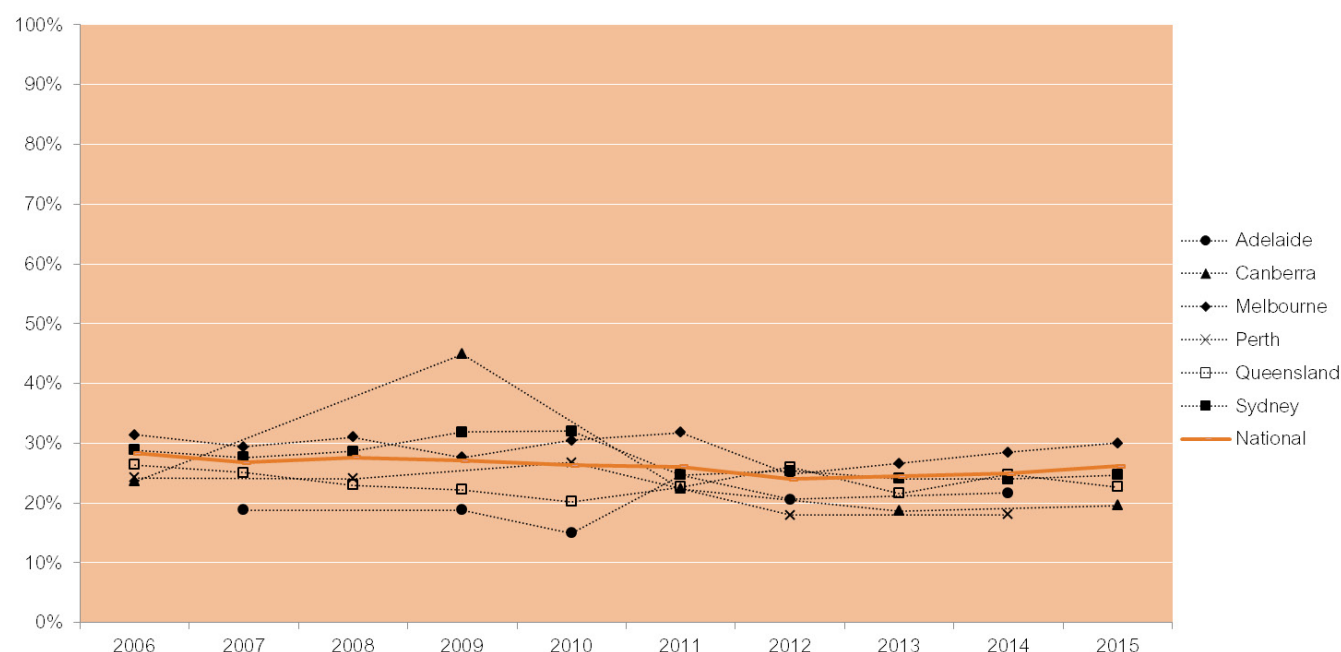
Number of male partners

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Over the last 10 years, there has been a significant reduction across Australia in the proportion of men reporting more than 10 male sex partners in the six months prior to the survey (see Table 1 and Figure 1). Nationally, this proportion has declined from 28.3% in 2006 to 26.2% in 2015. This 10-year decline is most obvious in Canberra, Perth, and Sydney while in the other jurisdictions, the number of partners has remained stable or has increased slightly (Adelaide). In the last three years, this indicator has remained stable in all participating states and territories.

Table 1: Men who reported more than ten male sex partners in the six months prior to the survey: GCPS, 2006-2015

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Adelaide		18.8		18.8	15.0	24.7	20.6		21.7		↑	-
Canberra	23.6			44.9		22.4		18.7		19.6	↓	ns
Melbourne	31.4	29.4	31.0	27.6	30.5	31.8	24.8	26.6	28.5	30.0	ns	ns
Perth	24.2		24.1		26.8		18.0		18.1		↓	-
Queensland	26.4	25.1	23.0	22.2	20.2	22.7	26.0	21.6	24.8	22.7	ns	ns
Sydney	28.9	27.6	28.6	31.9	32.0	24.7	25.4	24.1	24.0	24.7	↓	ns
Tasmania									6.8		-	-
All states/ territories	28.3	26.8	27.6	27.1	26.3	26.1	24.0	24.5	24.9	26.2	↓	ns

Figure 1: Men who reported more than ten male sex partners in the six months prior to the survey: GCPS, 2006-2015

1.2 Risk and risk reduction with regular male partners

a) No condomless anal intercourse with male partners

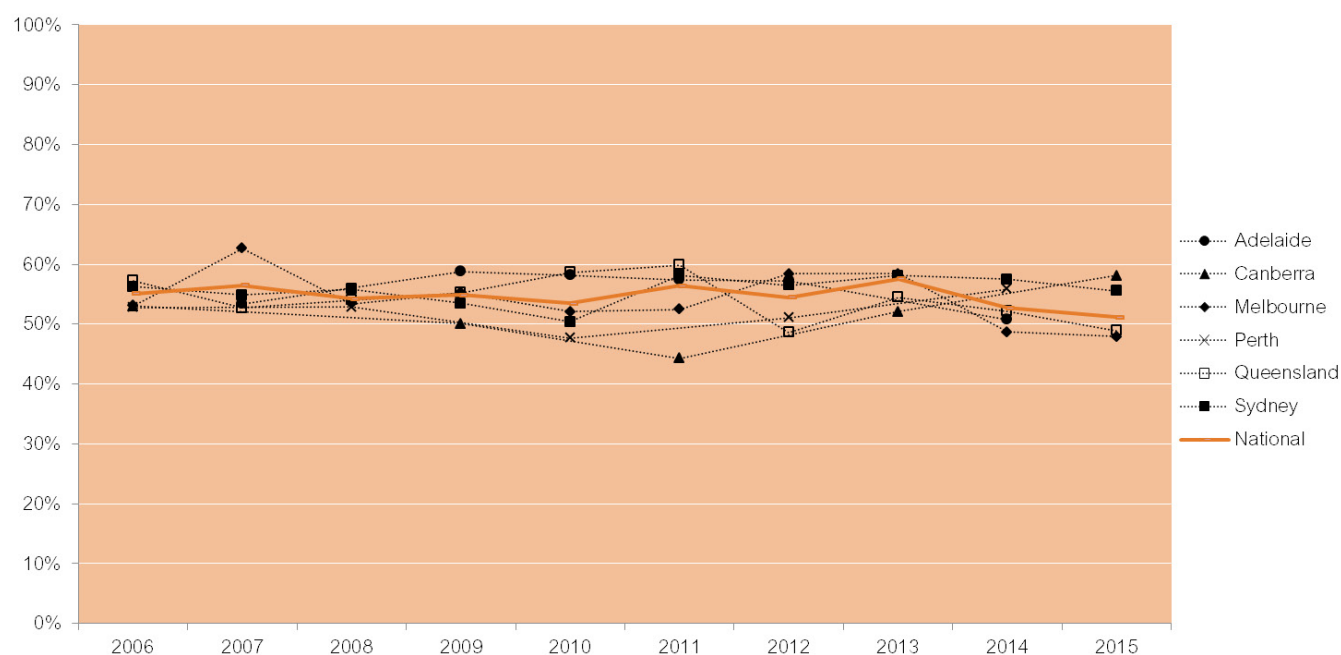
Limin Mao, John de Wit and Martin Holt

Table 2 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 10 years at about 52% of all GCPS participants. The proportion of men reporting no CLAI has increased in Canberra but decreased in Melbourne and Queensland over the last decade. In the last three years, the proportion of men who had no CLAI has increased in Canberra, stabilised in Sydney, and declined in Melbourne and Queensland, as well as nationally. Across jurisdictions, in the past 10 years, there have been significant increases in rates of *any* CLAI among HIV-positive men with an undetectable viral load (UDVL) and men in the 25-34-year age group.

Table 2: Men who reported no CLAI with any male sex partner in the six months prior to the survey: GCPS, 2006-2015

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Adelaide		53.4		58.8	58.2	57.4	57.3		50.8		ns	-
Canberra	53.0			50.1		44.3		52.1		58.1	↑	↑
Melbourne	53.1	62.7	53.4	55.3	52.1	52.5	58.4	58.4	48.7	47.9	↓	↓
Perth	52.8		52.9		47.7		51.1		55.9		ns	-
Queensland	57.3	52.7	54.0	55.3	58.7	59.9	48.6	54.5	52.2	48.9	↓	↓
Sydney	56.3	54.9	55.9	53.5	50.4	58.2	56.5	58.1	57.5	55.6	ns	ns
Tasmania									49.4		-	-
All states/ territories	55.1	56.5	54.3	54.9	53.5	56.4	54.5	57.6	52.7	51.2	ns	↓

Figure 2: Men who reported no CLAI with male sex partners in the six months prior to the survey: GCPS, 2006-2015



b) Condomless anal intercourse with regular male partners

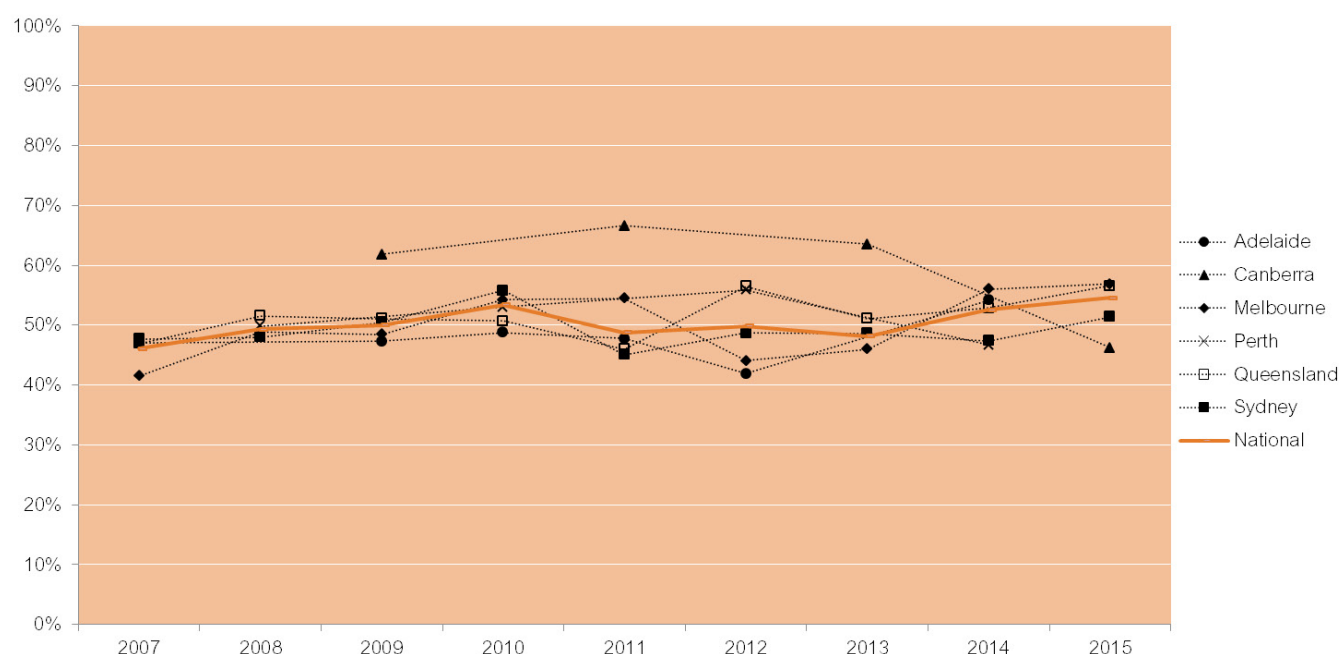
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Condomless anal intercourse is more likely to occur with regular partners (CLAIR) than with casual partners (CLAIC). Approximately 70% of gay men who participated in the GCPS have a regular male partner. The national trend depicted in Table 3 and Figure 3 shows that the proportion of participants with regular partners reporting any CLAIR has increased over the last 10 years to close to 55% in 2015. Analyses of trends over the last 10 years by state or territory show that the rate of CLAIR has risen in Adelaide, Melbourne and Queensland, but has remained stable in the other jurisdictions. In the last three years, the proportion of men reporting CLAIR has increased in Melbourne and Queensland, decreased in Canberra, and remained stable in Sydney.

A comparison of trends in CLAIR by HIV status (unadjusted data) shows rates have increased in both HIV-positive (from 54% in 2006 to 66% in 2015, $p=0.002$) and non-HIV-positive men (from 53% in 2006 to 58% in 2015, $p<0.001$). In terms of trends by age groups (unadjusted data), CLAIR has increased notably among men under 35 years of age (from 53% in 2006 to 62% in 2015, $p<0.001$), while the increase was less marked among those aged between 45 and 49 years (from 51% in 2006 to 57% in 2015, $p<0.01$).

Table 3: Men with regular partners who reported any CLAIR in the six months prior to the survey: GCPS, 2006-2015

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Adelaide		47.0		47.3	48.8	47.8	41.9		54.2	-	↑	-
Canberra	47.4			61.8		66.6		63.5		46.2	ns	↓
Melbourne	47.6	41.5	48.9	48.5	54.3	54.5	44.1	46.0	56.0	56.9	↑	↑
Perth	53.4		49.9		53.0		55.9		46.7	-	ns	-
Queensland	38.9	46.9	51.6	51.1	50.7	46.0	56.5	51.1	52.9	56.6	↑	↑
Sydney	46.4	47.7	48.0	50.5	55.8	45.1	48.7	48.6	47.4	51.4	ns	ns
Tasmania									56.3	-	-	-
All states/ territories	45.6	46.1	49.3	50.0	53.4	48.8	49.9	48.2	52.6	54.6	↑	↑

Figure 3: Men with regular partners who reported any CLAIR in the six months prior to the survey: GCPS, 2006-2015

c) Condomless anal intercourse with sero-discordant or sero-nonconcordant regular partners

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CLAIR presents a risk of HIV transmission between regular partners when the partners have different HIV statuses (sero-discordance), or when either or both partners have an unknown HIV status (sero-nonconcordance). Around 45% of gay men in the GCPS who have a regular partner report that their partner is sero-nonconcordant or sero-discordant, with more men reporting that they have an unknown status (sero-nonconcordant) partner (39%) than a known sero-discordant partner (6%). Table 4 and Figure 4 show the rates of CLAIR reported by men in sero-nonconcordant or sero-discordant relationships. It is important to note that the smaller states (Adelaide, Canberra, Perth and Tasmania) have been omitted from state-by-state analysis as the relatively small numbers of men in sero-nonconcordant or sero-discordant 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 sero-nonconcordant or sero-discordant relationships has increased during the last 10 years to 45% of men in those relationships in 2015. The rate of sero-nonconcordant or sero-

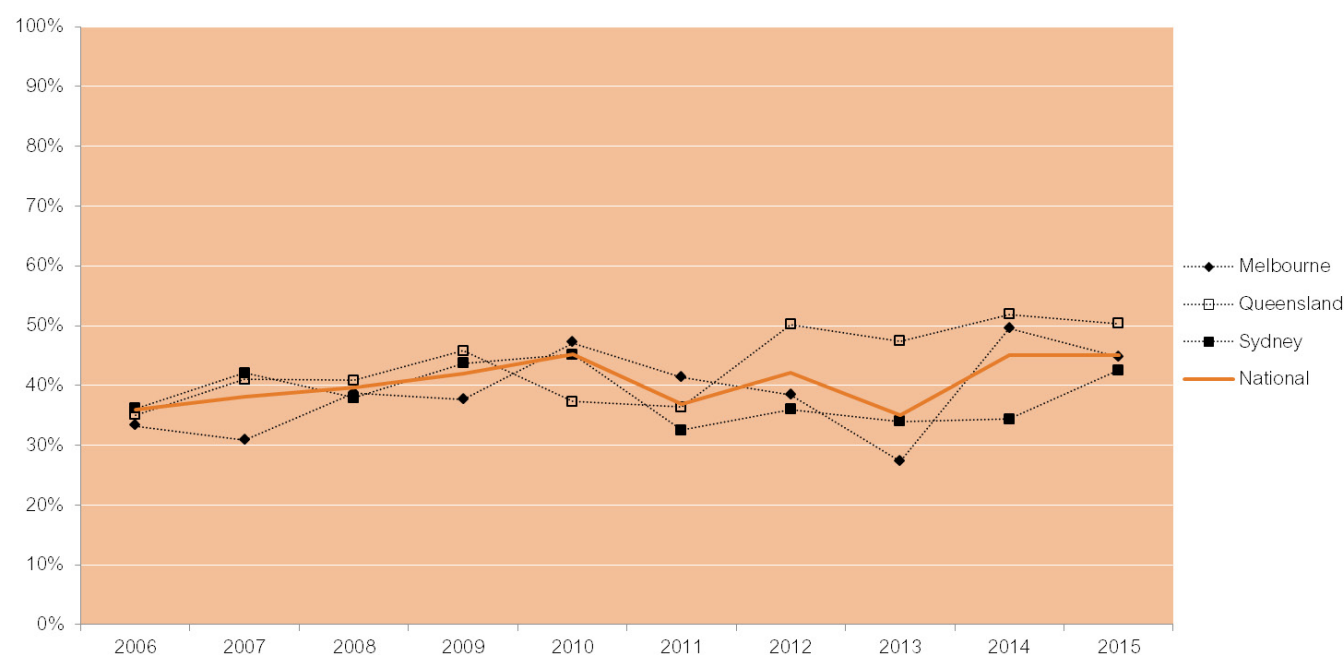
discordant CLAIR has been stable in Sydney, but increased in Melbourne and Queensland over the 10-year period. In the last three years, it has risen in Melbourne and Sydney as well as nationally, but has remained stable in Queensland.

A comparison of trends by HIV status (unadjusted data) shows that CLAIR with sero-nonconcordant or sero-discordant partners has increased among HIV-positive men (from 42% in 2006 to 56% in 2015, $p=0.001$). CLAIR with sero-nonconcordant or sero-discordant partners among non-HIV-positive men has largely remained stable over the 10-year period at around 44% (10-year mean rate). The rate has increased significantly among men under 25 years of age (from 45% in 2006 to 57% in 2015, $p<0.001$).

Table 4: Men with sero-nonconcordant or sero-discordant regular partners who reported any CLAIR in the six months prior to the survey: GCPS, 2006-2015

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Melbourne	33.2	30.8	38.7	37.6	47.1	41.3	38.4	27.3	49.5	44.7	↑	↑
Queensland	35.1	41.0	40.9	45.8	37.3	36.4	50.2	47.4	51.9	50.4	↑	ns
Sydney	36.2	42.1	37.9	43.7	45.2	32.5	36.0	34.0	34.4	42.6	ns	↑
All states/ territories	36.0	38.2	39.7	42.0	45.3	36.9	42.1	35.1	45.0	45.0	↑	↑

Figure 4: Men with sero-nonconcordant or sero-discordant regular partners who reported any CLAIR in the six months prior to the survey: GCPS, 2006-2015



d) Negotiated safety agreements with regular male partners

Limin Mao, John de Wit and Martin Holt

A negotiated safety agreement is defined as an explicit agreement between HIV-negative regular partners to allow CLAIR in the relationship and avoid CLAIR with partners outside the relationship. Negotiated safety agreements, if consistently practised by men in sero-concordant HIV-negative relationships, have been found to be relatively effective in preventing HIV transmission compared with other forms of condomless anal intercourse (Jin et al., 2009). For the analysis presented in Table 5 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 CLAI with each other but to have no CLAI 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).

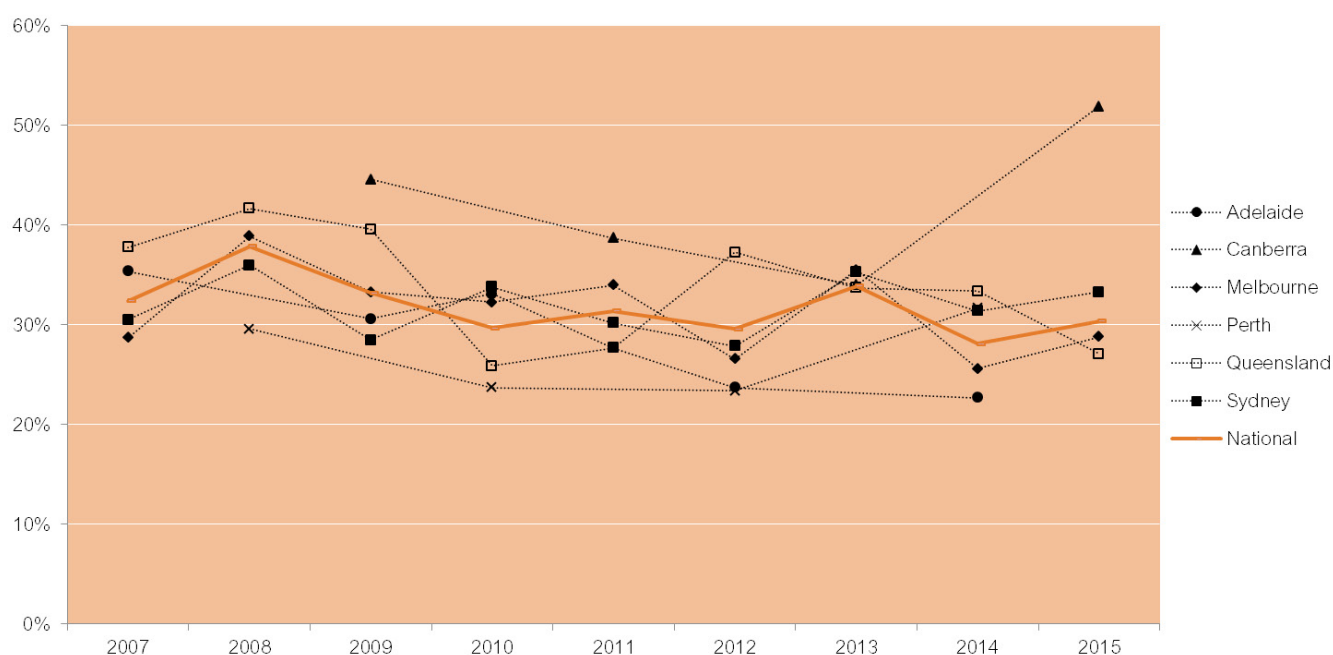
Nationally, the proportion of HIV-negative men with a negotiated safety agreement has declined over the last decade, and was reported by less than one-third of HIV-negative men in sero-concordant relationships in 2015 (see Table 5 and Figure 5). This decline in negotiated safety agreements is apparent in all states and territories over the 10-year period, except Canberra and Sydney.

The proportion of HIV-negative gay men with a negotiated safety agreement appears 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 Canberra, remained stable in Sydney, but declined in Melbourne and Queensland.

Table 5: Negotiated safety agreements among HIV-negative men with HIV-negative regular partners in the six months prior to the survey: GCPS, 2006-2015

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Adelaide		35.4		30.6	33.1	27.7	23.7		22.7		↓	-
Canberra	41.6			44.6		38.7		34.0		51.9	ns	↑
Melbourne	37.5	28.7	38.9	33.3	32.3	34.0	26.6	35.5	25.6	28.8	↓	↓
Perth	35.5		29.6		23.7		23.4		31.7		↓	-
Queensland		37.8	41.7	39.6	25.9	27.7	37.3	33.7	33.4	27.1	↓	↓
Sydney	33.1	30.5	36.0	28.5	33.8	30.2	27.9	35.3	31.4	33.3	ns	ns
Tasmania									35.3		-	-
All states/ territories	35.3	32.4	37.9	33.2	29.7	31.4	29.6	33.9	28.1	30.4	↓	ns

Figure 5: Negotiated safety agreements among HIV-negative men with HIV-negative regular partners: GCPS, 2006-2015



1.3 Risk and risk reduction with casual male partners

a) Condomless anal intercourse with casual male partners

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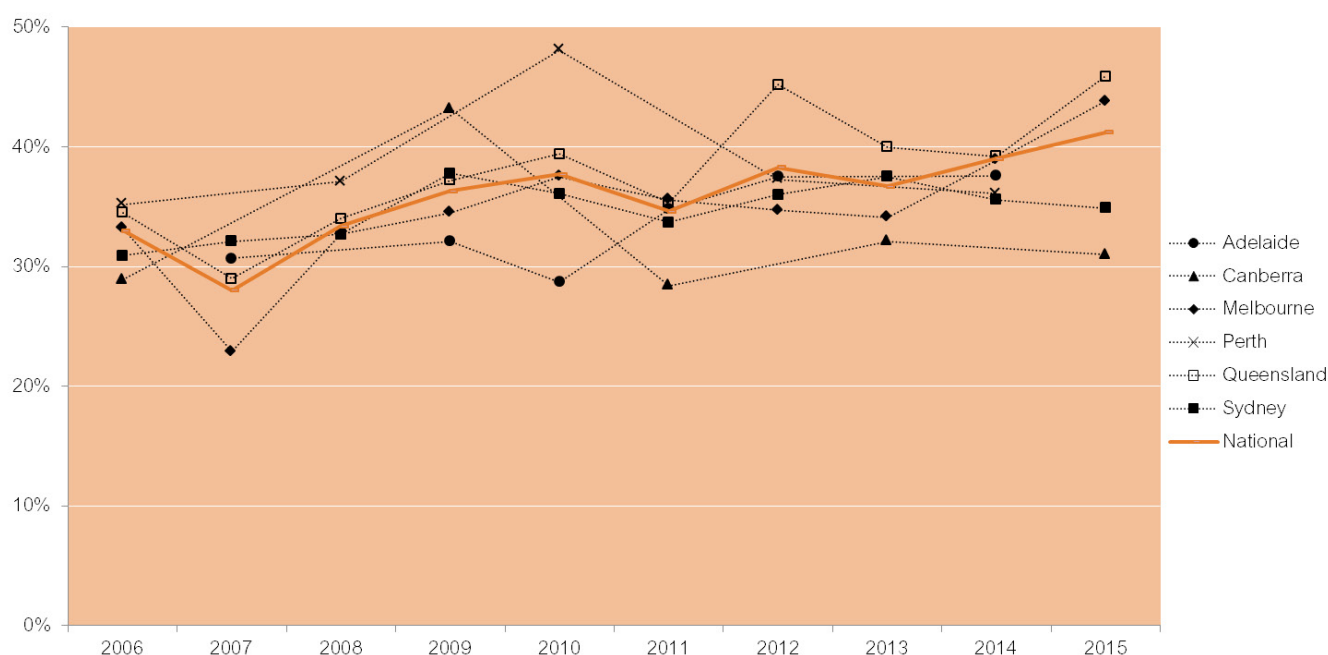
About 65% of gay men who participated in the GCPS reported having had sex with casual male partners in the past six months. Table 6 and Figure 6 show the rates of CLAIC reported by men with casual partners in the GCPS. The national rate of CLAIC has been gradually increasing over the last 10 years. It is worth noting that the latest national CLAIC rate (41.2% in 2015) is the highest we have seen for this indicator so far. In the last 10 years, CLAIC rates have increased across all participating states and territories, except for Canberra and Perth, where they have been stable. The rate of CLAIC has continued to increase nationally in the last three years. Increases were observed in Melbourne and Queensland, while rates have remained stable in Canberra and Sydney.

A comparison of trends in CLAIC by HIV status (unadjusted data) shows increases in CLAIC among both HIV-positive (from 53% in 2006 to 71% in 2015, $p < 0.001$) and non-HIV-positive men (from 28% in 2006 to 35% in 2015, $p < 0.001$). A comparison of trends in CLAIC by age groups (unadjusted data) shows a substantial increase among men under 25 years of age (from 29% in 2006 to 43% in 2015; $p < 0.01$) and a less marked increase among those aged 50 years or above (from 30% in 2006 to 38% in 2015, $p < 0.01$).

Table 6: Men with casual partners who reported any CLAIC in the six months prior to the survey: GCPS, 2006-2015

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Adelaide		30.7		32.1	28.7	34.8	37.5		37.6	-	↑	-
Canberra	28.9			43.2		28.4		32.1		31.0	ns	ns
Melbourne	33.2	22.9	32.7	34.5	37.5	35.6	34.7	34.1	38.9	43.8	↑	↑
Perth	35.2		37.1		48.1		37.3		36.1	-	ns	-
Queensland	34.5	29.0	34.0	37.2	39.4	35.3	45.2	40.0	39.2	45.9	↑	↑
Sydney	30.9	32.1	32.7	37.8	36.1	33.7	36.0	37.5	35.6	34.9	↑	ns
Tasmania									43.7	-	-	-
All states/ territories	33.0	28.0	33.4	36.3	37.7	34.6	38.3	36.7	39.0	41.2	↑	↑

Figure 6: Men with casual partners who reported any CLAIC in the six months prior to the survey: GCPS, 2006-2015



b) HIV status disclosure to casual male partners

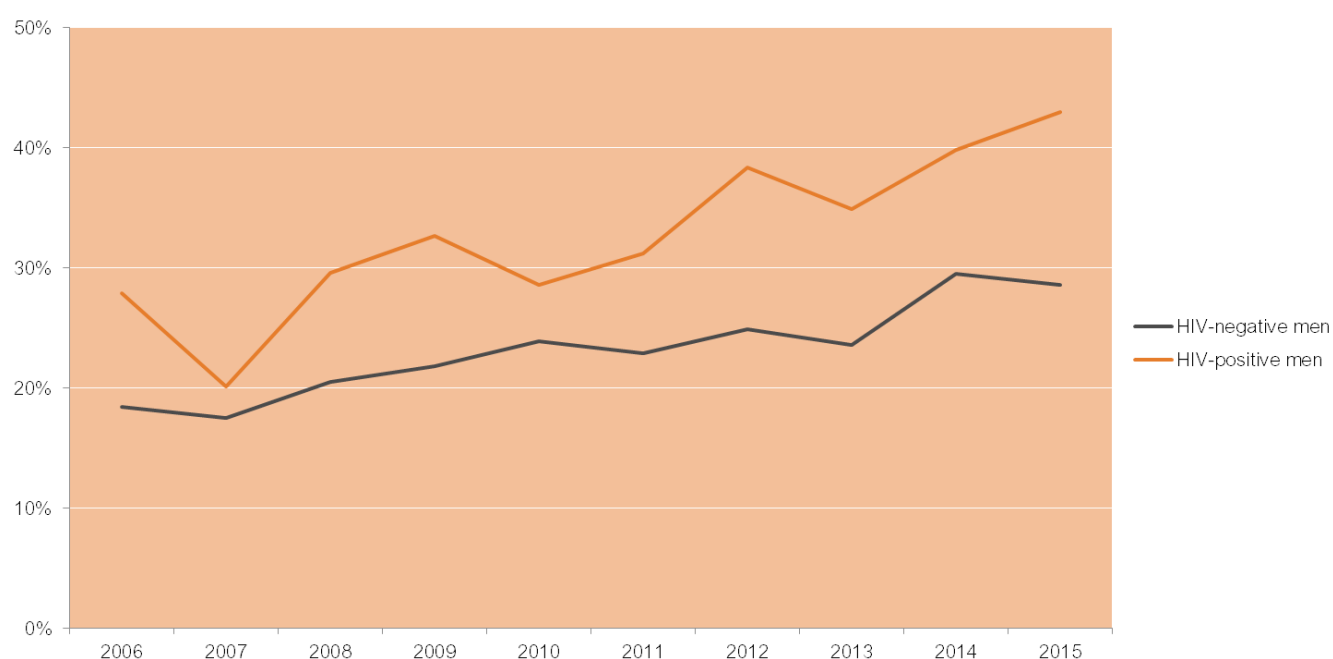
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The GCPS collect data on men's disclosure of their HIV status to casual male partners. HIV disclosure has become a key HIV risk reduction indicator over the last 15 years because the efficacy of non-condom-based risk reduction strategies is reliant on accurate knowledge of partners' HIV status (Holt et al., 2015; Jin et al., 2009; Mao et al., 2011; Mao et al., 2006; Zablotska et al., 2009). Table 7 and Figure 7 show the proportions of HIV-negative and HIV-positive men with casual partners who consistently disclosed their HIV status to all their casual male partners. We only present the national trend in disclosure of HIV-positive status (see Table 7), as the number of HIV-positive men reporting consistent HIV disclosure in each state and territory is relatively small.

National trends shown in Table 7 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 2006, about 28% of HIV-positive and 18% of HIV-negative men disclosed their status to all their casual partners. That proportion has increased to 43% of HIV-positive men with casual partners in 2015. Close to 29% of HIV-negative men with casual partners reported consistent disclosure of their HIV status in 2015. Increases in consistent HIV status disclosure by HIV-negative men have occurred in all states and territories over the ten-year period, except in Canberra and Perth. In the past three years, while there have been increases in most states and territories for HIV-negative men, there has been a decline in the rate of consistent HIV status disclosure in Canberra and a stable trend in Sydney.

Table 7: Men with casual partners who reported disclosing their HIV status to all casual partners in the six months prior to the survey, by HIV status of participant: GCPS, 2006-2015

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
<i>HIV-negative men</i>												
Adelaide		10.7		17.6	27.5	27.7	29.3		30.4		↑	-
Canberra	25.2			21.4		23.5		29.8		23.7	ns	↓
Melbourne	18.9	13.9	22.0	20.9	20.9	17.7	20.0	18.7	28.4	26.4	↑	↑
Perth	20.9		22.3		29.1		18.4		22.4		ns	-
Queensland	14.6	19.9	20.2	26.9	26.6	27.2	36.5	28.7	29.4	30.2	↑	ns
Sydney	19.4	20.6	19.2	20.4	21.0	22.3	21.1	24.8	32.0	31.4	↑	↑
Tasmania									45.9		-	-
All states/ territories	18.4	17.5	20.5	21.8	23.9	22.9	24.9	23.6	29.5	28.6	↑	↑
<i>HIV-positive men</i>												
All states/ territories	27.9	20.1	29.6	32.7	28.6	31.2	38.4	34.9	39.8	43.0	↑	↑

Figure 7: Men with casual partners who reported disclosing their HIV status to all casual partners, by HIV status of participant: GCPS, 2005-2016

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

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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 non-condom based strategies which can reduce the risk of HIV (Jin et al., 2009; Mao et al., 2011), in particular strategies that draw on knowledge of the HIV status of those involved in the sexual interaction, as well as strategies making use of knowledge of the viral load status of HIV positive partners (Holt et al., 2015). To better assess the risk of HIV transmission, the use of such risk reduction

strategies needs to be accounted for, requiring more detailed behavioural indicators to complement monitoring of CLAI. We have previously 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 (DVL) (Mao et al., 2011). Since 2014, we have included the monitoring of various risk reduction practices as a standard component of the ARTB.

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 8). However, while consistent condom use remains the most common behavioural risk reduction strategy among HIV-negative men, the proportion of HIV-negative men reporting consistent condom use has decreased significantly, from 34% in 2006 to 26% in 2015. Among HIV-negative men, the second most common behavioural risk reduction strategy was to restrict CLAI to sero-concordant regular partners (i.e. serosorting). The proportion of men reporting this form of serosorting increased from 22% in 2006 to 25% in 2015.

Proportions of men reporting consistent condom use have also declined among HIV-positive men with a self-reported UDVL (from 30% in 2006 to 13% in 2015), as well as among HIV-positive men with a self-reported DVL (from 25% in 2006 to 10% in 2015). Among HIV-positive men with an UDVL, the most common behavioural risk reduction strategy was to disclose their HIV status to some but not all casual partners before CLAIC (from 24% in 2006 to 28% in 2015). Among HIV-positive men with a DVL, the most common behavioural risk reduction strategy was to disclose their HIV status to all casual sex partners before CLAIC, which increased from 13% in 2006 to 33% in 2015. The proportion of men practicing CLAI with a sero-discordant or sero-nonconcordant regular partner has decreased among HIV-negative men (from 8% in 2006 to 5% in 2015), but has remained stable among HIV-positive men with an UDVL (about 7% in 2006-15) and HIV-positive men with a DVL (about 5% in 2006-15). Taken together, these findings illustrate a shift away from consistent condom use to various non-condom-based strategies in anal sex with regular or casual partners, likely reflecting an increased recognition that condomless sex with partners confirmed to be of the same HIV status or with HIV-positive men who have maintained viral suppression poses little risk of HIV transmission.

Since 2015, we have included information (unadjusted data) to identify men who frequently ("always" or "often") engage in non-condom-based risk reduction strategies during CLAIC (see Table 9). The risk reduction strategy most commonly reported by HIV-negative men who engaged in any CLAIC was serosorting (55%), which has increased since 2012 ($p < 0.001$). Among HIV-negative men who had CLAIC, there has been a decline in reliance on their partners withdrawing before ejaculation (17% in 2012 to 13% in 2015, $p = 0.001$). Further, since 2013, a consistently small proportion of HIV-negative men who had CLAIC reported that they frequently checked that their HIV-positive partners had an undetectable viral load before sex (12% during 2013-5). The use of antiretroviral drugs before or after sex (i.e. PrEP and PEP) was reported by fewer than 5% of HIV-negative men who had CLAIC during 2013-15.

The most commonly reported risk reduction strategy by HIV-positive men who had CLAIC was knowing that they had an undetectable viral load before sex (75%), likely reflecting that the majority of HIV-positive men in the GCPS are on antiretroviral treatment and have an UDVL. Since 2013, relying on an UDVL has been increasingly adopted by HIV-positive men during CLAIC ($p < 0.001$) (see Holt et al., 2015). Serosorting has remained the second most commonly adopted non-condom based risk reduction strategy by HIV-positive men during CLAIC (58% during the 2012-5), while taking the receptive position for CLAI with an HIV-negative or HIV-status unknown casual partner has increased

substantially (from 15% in 2012 to 24% in 2015, $p < 0.05$).

Table 8: Sexual practices, condom use and non-condom-based risk reduction in the six months prior to the survey: GCPS, 2006-2015 (all states or territories, unadjusted data)

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	10-year average %
<i>HIV-negative men</i>											
No sex	5.3	5.2	5.0	6.1	9.3	6.9	8.4	7.2	8.2	8.0	7.1
No anal sex	11.7	12.7	12.4	12.2	10.7	14.2	13.6	14.0	13.2	13.4	12.8
Anal intercourse always with a condom	34.3	34.3	34.6	32.6	28.8	31.3	30.6	31.2	27.7	26.3	30.9
CLAI only with a seroconcordant regular partner ¹	21.5	19.1	20.5	21.6	21.7	23.6	24.0	23.8	24.9	25.1	22.7
CLAI with other types of regular partner ¹	8.1	9.9	7.6	6.9	8.8	4.1	4.0	3.8	5.1	5.3	6.3
CLAI with casual partners and consistent HIV status disclosure ²	5.2	4.4	4.8	5.7	6.1	6.8	6.9	7.5	8.9	10.2	6.8
CLAI with casual partners and inconsistent HIV status disclosure ²	13.9	14.4	14.9	15.1	14.5	13.1	12.5	11.5	12.2	11.7	13.4
<i>HIV-positive men with an undetectable viral load</i>											
No sex	6.3	5.0	8.1	6.6	10.3	9.2	10.6	11.0	10.5	8.2	8.8
No anal sex	9.1	12.7	10.5	10.3	7.6	10.6	10.4	9.4	12.3	8.7	10.1
Anal intercourse always with a condom	30.0	25.4	25.6	25.2		24.0	17.9	17.1	20.9	13.4	21.9
CLAI only with a seroconcordant regular partner ¹	7.7	10.7	8.8	7.8	11.4	6.8	7.6	8.3	9.1	10.2	8.7
CLAI with other types of regular partner ¹	8.6	9.0	5.8	5.7	6.5	7.3	4.4	7.3	7.4	7.8	7.2
CLAI with casual partners with full HIV status disclosure ²	14.3	12.0	14.1	15.6	13.8	17.0	21.8	20.9	20.6	24.2	17.8
CLAI with casual partners without full HIV status disclosure ²	23.9	25.2	27.0	28.8	26.6	25.1	27.2	26.0	19.2	27.5	25.5
<i>HIV-positive men with a detectable viral load³</i>											
No sex	4.5	6.0	9.1	2.1	8.1	6.8	6.3	8.4	12.7	7.7	6.6
No anal sex	5.5	7.1	7.1	8.3	5.9	11.9	8.4	10.8	7.0	5.1	7.6
Anal intercourse always with a condom	24.9	23.6	22.7	20.7	23.5	22.0	22.1	22.9	18.3	10.3	22.3
CLAI only with a seroconcordant regular partner ¹	11.0	8.8	9.7	4.8	9.6	7.6	11.6	6.0	8.5	12.8	8.9
CLAI with other types of regular partner ¹	6.5	5.0	7.1	4.8	2.9	4.2	7.4	8.4	0	5.1	5.3
CLAI with casual partners with full HIV status disclosure ²	12.9	15.9	14.9	26.9	16.9	11.9	24.2	20.5	26.8	33.3	18.5
CLAI with casual partners without full HIV status disclosure ²	34.8	32.5	29.3	32.4	33.1	35.6	20.0	22.9	26.8	25.6	30.8

¹ No CLAIC; ² With or without CLAIC; ³ Sample size less than 100 from 2012 onwards, interpret proportions with caution

Table 9: Men who 'always' or 'often' used non-condom based risk-reduction strategies when engaging in CLAIC in the six months prior to the survey: GCPS, 2012-2015 (all states or territories, unadjusted data)

	2012 %	2013 %	2014 %	2015 %	Overall trend
<i>HIV-positive men</i>					
Ensured partners were seroconcordant before CLAIC (serosorting)	59.0	55.4	61.3	54.9	ns
Took receptive position during CLAIC that was not concordant	15.4	21.0	17.2	23.7	increased
Withdrew before ejaculation during insertive CLAIC	11.5	14.6	11.7	9.0	ns
Participant knew he had an undetectable viral load before sex		58.4	73.7	75.4	increased
Total n (not mutually exclusive)	n=305	n=267	n=274	n=333	
<i>HIV-negative men</i>					
Ensured partners were seroconcordant before CLAIC (serosorting)	44.9	46.9	52.4	54.7	increased
Took insertive position during CLAIC that was not concordant	25.0	23.5	22.3	22.5	ns
Partner withdrew before ejaculation during receptive CLAIC	17.2	16.8	15.8	12.7	decreased
Ensured HIV-positive partner had an undetectable viral load before sex		11.5	10.6	13.2	ns
Took anti-HIV medication before sex		3.8	2.9	5.0	ns
Took anti-HIV medication after sex		4.6	4.3	4.8	ns
Total n (not mutually exclusive)	n=1162	n=933	n=1193	n=1390	

This table only includes data from men who reported having CLAIC in the six months prior to the survey.

2 Gay men: antiretrovirals for HIV prevention

2.1 Use of PEP and PrEP among gay men

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In 2015, 65% of HIV-negative men in the GCPS knew that post-exposure prophylaxis (PEP) was readily available (unadjusted data, 62% in 2010). However, fewer than 4% of HIV-negative men in the GCPS reported use of PEP in the previous six months between 2013 and 2015 (unadjusted data, 3.6% during 2013-5). Table 9 (above) shows that among HIV-negative men with casual partners who had any CLAIC in the previous six months, only 4%-5% took anti-HIV medication after CLAIC to reduce the risk of HIV acquisition (unadjusted data, 4.6% during 2013-5).

As of 2015, pre-exposure prophylaxis (PrEP) has become available in Australia through research studies, in addition to private, off-label prescribing and personal importation from overseas. PrEP use up to and including 2015 was reported by 2% or less of HIV-negative men in the GCPS (unadjusted data, 1.7% in 2013, 1.3% in 2014, 2.0% in 2015, respectively). Among HIV-negative men with casual partners who had any CLAIC in the previous six months, about 3%-5% used PrEP in the six months prior to the survey (unadjusted data, 4.0% during 2013-5), as shown in Table 9 (above). PrEP use is expected to increase substantially in the future as accessibility is increasing, in particular in NSW, Victoria, and Queensland.

2.2 Changing attitudes to HIV PrEP and treatment as prevention (TasP) among gay and bisexual men

Martin Holt, Toby Lea, Dean Murphy and John de Wit

As noted in last year's report, willingness to use PrEP has remained relatively stable since 2011, reported by 28-32% of HIV-negative and untested men (Holt et al., 2014b; Holt et al, 2012). Willingness to use PrEP remains concentrated among men at increased risk of HIV, including men who engage in condomless sex with casual partners, those with HIV-positive partners, and men who have previously taken post-exposure prophylaxis. Now that PrEP availability is rapidly expanding in Australia, particularly in the eastern states, it will be interesting to see if willingness to use PrEP remains concentrated among men at higher risk of HIV (as recommended in prescribing guidelines) (Australasian Society for HIV Medicine, 2015), or whether interest grows among gay men in general. A recent analysis we conducted in the PrePARE study suggests that while over three-quarters (77%) of gay and bisexual men are now aware of PrEP, the knowledge of PrEP prescribing guidelines is relatively poor (Holt, Lea, Kippax, et al., 2016). In particular, relatively few men (51%) know that taking

PrEP involves regular clinical visits and that PrEP is only recommended for people at high risk of HIV (38%).

Since 2012, the health and preventative benefits of HIV treatment have been increasingly promoted to gay and bisexual men. Up until 2013, in the PrePARE study, we found that very few men (<3%) believed that treatment as prevention (TasP) was effective in preventing HIV transmission (Holt et al., 2014a). Between 2013 and 2015, we observed dramatic increases in the belief that TasP is effective, from 2 to 10% of HIV-negative and untested men and 10 to 46% of HIV-positive men (Holt, Lea, Schmidt, et al., 2016). Other than being HIV-positive, in 2015, belief in TasP was associated with having a tertiary education, engaging in condomless anal intercourse with casual male partners, and ever having taken post-exposure prophylaxis.

A question we are considering is whether the difference in attitudes towards TasP between HIV-negative, untested and HIV-positive men is problematic or not. How might sexual practices and negotiation be affected if HIV-positive men largely believe that TasP works while HIV-negative and untested men largely remain unconvinced? Dutch colleagues, for example, have suggested that HIV-positive men may be increasingly disinclined to disclose their HIV status to casual partners if they are reassured that there is a minimal transmission risk when they are on HIV treatment (Van Den Boom et al., 2013). The decision not to disclose, however, violates HIV-negative and untested men's expectations of HIV status disclosure from HIV-positive men (Murphy, de Wit, Donohoe, & Adam, 2015). It remains unclear how these different expectations will play out in practice.

References

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Holt, M., Lea, T., Schmidt, H. M., Murphy, D., Rosengarten, M., Crawford, D., . . . de Wit, J. (2016). Increasing belief in the effectiveness of HIV treatment as prevention: results of repeated, national surveys of Australian gay and bisexual men, 2013-15. *AIDS and Behavior*, 20(7), 1564-71. doi: 10.1007/s10461-016-1306-0



2.3 Interest in using new HIV prevention technologies: rectal microbicides

Dean Murphy

Alongside CSRH's ongoing work on attitudes to PrEP and treatment as prevention, researchers at the centre have also been exploring attitudes to another prevention technology in development: rectal microbicides (Murphy, Lea, et al., 2015). Although no rectal microbicide product has yet been approved for use, rectal microbicides may be an important HIV prevention tool for a number of reasons: microbicides may be applied prior to sex, their use may be event driven, and their use can be controlled by the receptive partner. Also, given that the majority of men who have sex with men (MSM) report lubricant use for anal sex, rectal microbicides that also provide lubrication are likely to be acceptable.

We measured interest in using rectal microbicides on a reliable seven-item scale ($\alpha=0.81$). This scale was developed as part of the PrePARE Project, a national online study of gay and bisexual men's attitudes to different HIV prevention strategies. A total of 1,223 HIV-negative and untested men were included in our analysis of attitudes to rectal microbicides. Overall, there was moderate interest in using rectal microbicides (mean=3.33, range 1-5). In multivariate analysis, greater interest in using microbicides was independently associated with being born outside Australia (adjusted OR (AOR)=1.59; $p=0.009$), greater self-perceived likelihood of becoming HIV-positive (AOR=3.40; $p<0.001$), less uncertainty about the efficacy of microbicides (AOR=0.65; $p=0.009$), any condomless anal sex with casual partners in the previous 6 months (AOR=1.78; $p=0.03$), and ever having received post-exposure prophylaxis (AOR=1.53; $p=0.04$). Interest in using microbicides was not associated with age, number of male sex partners or the HIV status of regular male partners.

It appears, therefore, that there are men who would benefit from, and are highly motivated to use a rectal microbicide product.

Reference

Murphy, D.A., Lea, T., de Wit, J.B., Ellard, J. M., Kippax, S.C., Rosengarten, M., & Holt, M. (2015). Interest in using rectal microbicides among Australian gay men is associated with perceived HIV vulnerability and engaging in condomless sex with casual partners: results from a national survey. *Sexually Transmitted Infections*, 91, 266-268. doi: 10.1136/sextrans-2014-051694



2.4 Early experience of PrEP in Australia

Dean Murphy

In 2015 we reported on early experiences of PrEP among men in the VicPrEP study. This study, which commenced in June 2014, was the first demonstration project in Australia investigating the feasibility, acceptability and impact of making PrEP available to people at high-risk of HIV acquisition. Our analyses were based on the 92 participants for whom there was also clinical data available. These participants were all male, with 96.8% identifying as gay or bisexual.

Participants in the study reported positive changes in their experiences of sex since starting PrEP (Murphy, de Wit, et al., 2015). Experiences of sex since starting PrEP were measured by responses to statements on a five-point scale (1=completely disagree; 5=completely agree). Overall, they agreed that PrEP made them feel more confident about sex (mean=4.17). They also moderately agreed that sex was more pleasurable (mean=3.89). Most notably, they strongly agreed that PrEP reduced their worries about HIV acquisition (mean=4.53).

Although some media reports have focused on stigmatising practices toward sexual exclusion of people on PrEP, participants in this study reported few such experiences (Murphy, de Wit, et al., 2015). They disagreed that they had received negative reactions from (potential) sex partners about PrEP (mean=1.99), and also disagreed that potential sex partners would avoid them if they knew they were taking PrEP (mean=2.03).

Qualitative findings based on in-depth interviews with participants suggested the emergence of a new thinking about HIV-negative identity, with the possibility of experiencing this status as more definite (less ambiguous) than an HIV-negative status in the absence of PrEP (Murphy & Rosengarten, 2015). Self-descriptions of being 'neg and on PrEP' reinstated conventional neo-liberal framings of risk, and specifically located potential risk in assumed HIV-negative men not taking PrEP.

There has also been much speculation about subsequent changes in condom use among users of PrEP. Little evidence of any changes has been found in clinical trials and extension projects. Our study, however, found that gay/bisexual men decreased consistent condom use with casual partners in the three months since starting PrEP (OR=-0.51) (de Wit et al., 2015). This decrease suggested a selective change in risk reduction practices – although there had been a reduction in condom use since starting PrEP, there were few changes in other practices such as serosorting, strategic positioning, withdrawal or reliance on viral suppression. Notably, there was also an increase in the proportion of men who believed PrEP was completely effective, increasing from 25% to 49.4% over the first three months of the study.

Reliance on PrEP as an HIV prevention strategy also depends on adherence to the dosing requirements. Early findings from the VicPrEP Project suggested that 86.1% of participants had not missed any doses in the week prior to being surveyed (de Wit et al., 2015). This high level of adherence was confirmed through testing of blood samples, which found that 89.7% of participants had drug levels consistent with taking at least four doses in the previous week (which is consistent with a 96% reduction in HIV risk) (Audsley et al., 2015).

References

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Murphy, D., de Wit, J., Lal, L., Audsley, J., Roth, N., Moore, R., . . . on behalf of the VicPrEP Study Team (2015). *Pills, pleasure and privacy: Early experiences of Pre-exposure Prophylaxis among men in the VicPrEP study*. Paper presented at the Australasian HIV Conference, Brisbane.

Murphy, D. A. & Rosengarten, M. (2015). *PrEP and the new negativity: Experiences of disclosure and sex among participants in the qualitative arm of the VicPrEP study*. Poster presented at the Australasian HIV Conference, Brisbane.



2.5 Disclosure of HIV status to sexual partners: expectations and preferences

Dean Murphy

There is evidence of increases in disclosure of HIV status disclosure among gay men. Although this trend is largely attributed to the increasing popularity of non-condom risk reduction strategies such as serosorting, a study undertaken by researchers at CSRH explored other possible drivers of disclosure – namely, the disclosure expectations and serostatus preferences of (potential) sexual partners (Murphy, de Wit, Donohoe, & Adam, 2015).

Our analysis, based on responses to a national online survey (the HIV Stigma Barometer Study), explored three aspects of disclosure: 1) the importance non-HIV-positive men in Australia placed on knowing the HIV status of their sexual partners; 2) the extent to which they restrict sex to partners of the same HIV status; and 3) their HIV disclosure expectations. Included in the analysis were 1,044 men, of whom 914 were HIV-negative and 130 were untested (or of unknown status).

A quarter (25.9%) of participants wanted to know the HIV status of all sexual partners, and one-third (37.2%) restricted sex to partners of similar HIV status. Three quarters (76.3%) expected HIV-positive partners to disclose their HIV status before sex, compared to 41.6% who expected HIV-negative men to disclose their HIV status. Less than half (41.7%) of participants reported that they consistently disclosed their HIV status to sexual partners.

Men who expected HIV-positive partners to disclose their HIV status before sex more often lived outside capital cities, were less educated, were less likely to identify as gay, perceived more risk of HIV transmission from a range of sexual practices, were less engaged with the HIV-positive community, and expressed more stigma towards HIV-positive people. These findings suggest that men who are most likely to exclude HIV-positive male sex partners are less connected to the HIV epidemic and less educated about HIV risk and prevention.

Reference

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2.6 Adapting behavioural surveillance to measure the impact of antiretroviral-based prevention

Martin Holt and Limin Mao

As new prevention technologies such as PrEP and TasP have been adopted in Australia's national and state HIV strategies, we have been gradually adapting our monitoring systems like the GCPS to follow their introduction and assess their impact. HIV treatment and viral load test results have been collected from HIV-positive gay men for over 10 years (de Wit, Mao, Adam, & Treloar, 2015). Since 2011, we have asked gay men about the intentional use of UDLV as a risk reduction strategy during condomless sex with casual partners (Holt et al., 2015), and in 2013, we started to measure PrEP use by HIV-negative men. We began to report this expanded range of HIV risk reduction strategies in last year's ARTB (de Wit, Mao, Adam, & Treloar, et al., 2015). Please see section 2.1 in this report for the latest data.

However, we have continued to refine our measures and reporting to better capture the ways in which the introduction of PrEP and TasP may affect gay men's practices, particularly between casual sex

partners. This is in response to a growing recognition that existing measures like CLAI with casual partners do not distinguish between potentially risky and safer forms of condomless sex, such as condomless sex between partners of unknown HIV status (risky) or condomless sex by HIV-negative men on PrEP, or by HIV-positive men with an UDL (safer) (Jin et al., 2015). For this reason, from 2016 onwards, we are including the following classification of sex between casual male partners in state and territory GPCS reports:

- a) No anal intercourse with casual partners (participants of any HIV status)
- b) Consistent condom use with casual partners (participants of any HIV status)
- c) Any CLAI by HIV-positive men on HIV treatment and with an undetectable viral load
- d) Any CLAI by HIV-negative men on PrEP
- e) Any CLAI by HIV-positive men not on HIV treatment or with a detectable viral load
- f) Insertive only CLAI by HIV-negative or untested men not on PrEP
- g) Any receptive CLAI by HIV-negative or untested men not on PrEP.

Categories 1-4 are classified as 'safe sex', and categories 5-7 as risky for HIV transmission or infection, although the relative risk of each of these practices is not the same (Jin et al., 2009).

Reference

Holt, M., Lea, T., Mao, L., Zablotska, I., Lee, E., Hull, P., de Wit, J., & Prestage, G. (2016). Adapting behavioural surveillance to antiretroviral-based HIV prevention: reviewing and anticipating trends in the Australian Gay Community Periodic Surveys. *Sexual Health*. Advance online publication. doi: 10.1071/SH6072

2.7 Getting the balance right in HIV prevention, treatment and care

Peter Aggleton

The last few years have seen major advances in HIV treatment globally and in Australia. Substantial numbers of people are now in receipt of treatment drugs that work, saving lives and improving quality of life. Concurrently, however, there has been a downplaying of the importance of HIV prevention, both in terms of intensity and reach, and with respect to the range of prevention options that are promoted.

All too frequently, talk of Test and Treat, Treatment as Prevention and, more recently, PrEP have come to substitute education, programming and support about sex, sexuality, relationships, and injecting drug use. Too often, highly effective HIV prevention approaches such as condom use, which showed success in the past, are being sidelined in favour of pills which, like their forbears, are only one of a number of possible means of preventing HIV.

Ultimately, any one HIV prevention approach will only be useful to some people, in some situations, some of the time. To make headway against a rapidly changing and increasingly complex epidemic, a combination approach which speaks to hearts as well as minds, and which recognises the agency of individuals to choose what is best for themselves and their partners, at particular moments in their lives remains needed.

Within this context, it is important to critically interrogate some of the assumptions that have come to underpin HIV work today. Terminology such as MSM, transgender, bisexual and even 'gay', extensively used early in the epidemic to describe supposedly discrete populations groups, requires scrutiny in a world where the diversity of gender and sexuality is more evident. The refusal of increasing numbers of people – both young and old – to identify with any of these descriptors poses challenges for the future targeting of health education and health promotion.

The face-to-face 'communities' of the past – organised around bars, nightclubs, drop-ins and community groups are rapidly being replaced by the virtual and online communities of the present. Simultaneously, community organisations have become more professionalised, more bureaucratised, and more bounded in their work, sometimes serving as little more than extensions of the state, increasingly removed from the lived realities of the diverse circumstances of those they seek to serve.

All this calls for a re-appraisal of what counts as HIV education, as well as the relationship between

treatment, prevention and care. In undertaking this, we must learn the lessons of the past. No one approach works well for everyone all of the time. A menu of care, treatment and prevention options is better than one heavily promoted approach. It is important to speak to people and their needs in ways that articulate with real lives lived in real contexts, not as abstract entities or as the subjects of scientific and therapeutic ‘intervention’.

We always need to remember that HIV was, is and always will be the most social of conditions, lived in a multiplicity of ways through anger, rage, in sadness, and in hope.

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3 Gay men: other BBV/STI prevention

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

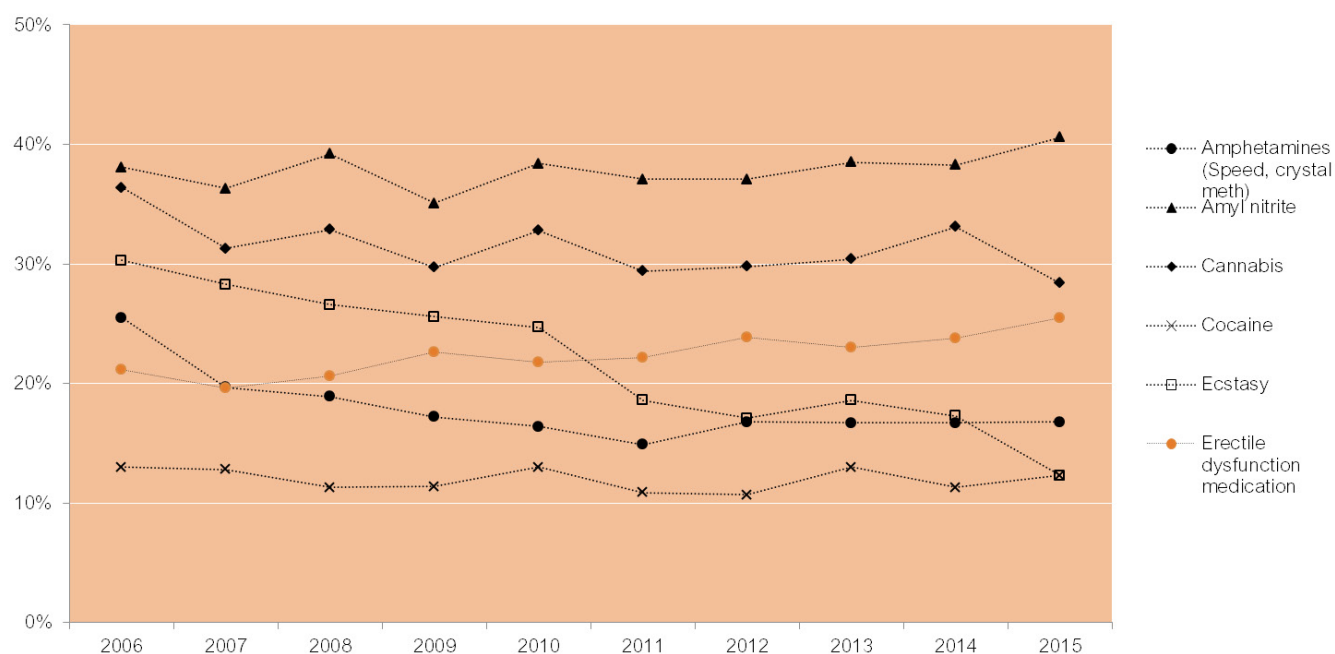
Limin Mao, John de Wit and Martin Holt

The GCPS include questions about the use of a range of drugs. Table 10 and Figure 8 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 10 and Figure 8 show that amyl nitrite ('poppers') is the most commonly reported drug used 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 used as both a 'party' drug for dancing and in sexual settings. Use of 'poppers' is reported by over a third of men in the GCPS and its use has remained stable since 2006. Cannabis is the second most commonly reported drug although its use has continued to decline since 2006, 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 as well as the use of (meth)amphetamines ('speed' or 'crystal meth'/'ice') have both declined during the 10-year period. The use of cocaine has been stable since 2006. The use of erectile dysfunction medication like Viagra and Cialis has increased over the last 10 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 been stable, except the use of ecstasy which decreased.

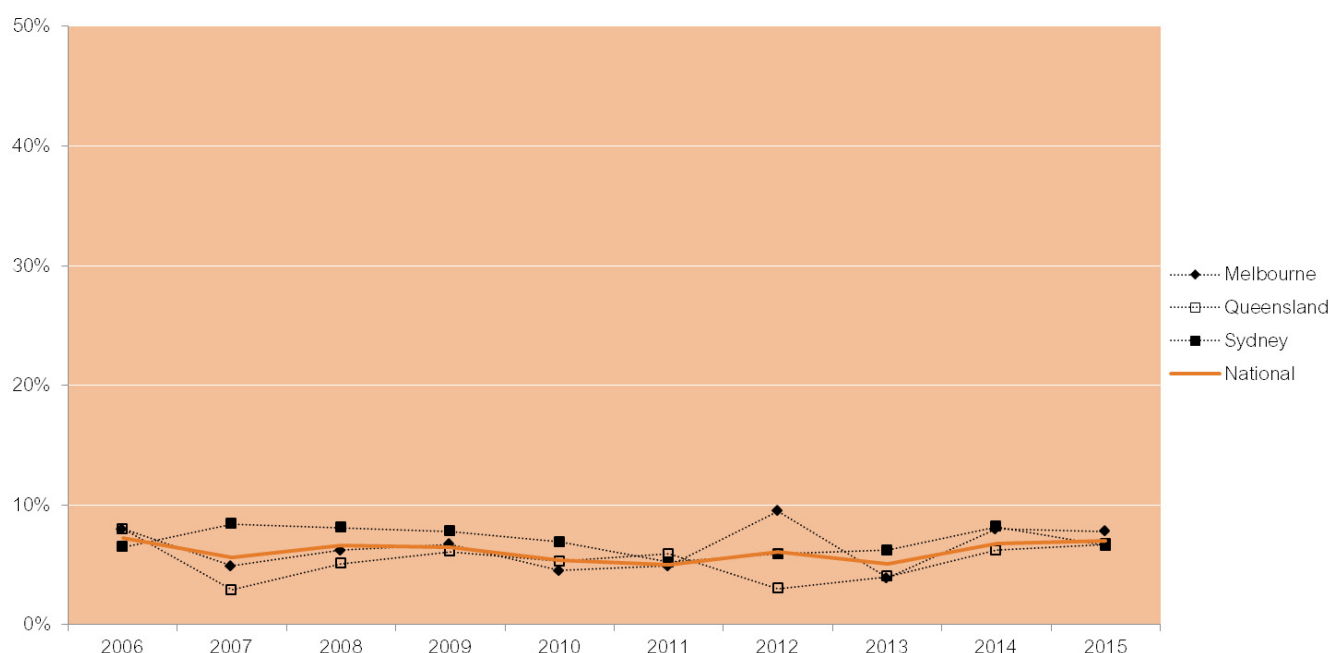
Injection of non-prescribed drugs for recreational purposes remains relatively rare among gay men although it is more common than in the general population. Table 11 and Figure 9 show the proportions of men from Melbourne, Queensland and Sydney who reported any drug injection in the six months prior to the survey, as well as the national trend. It is important to note that because it is infrequently reported, the rates of drug injection by gay men in Adelaide, Canberra, Perth and Tasmania are not reported separately. Data from these locations, however, have been included in the national rate. Over the 10-year period, the proportion of men who injected drugs in the six months prior to survey is stable nationally at around 5%-7%. In the past three years, however, there has been a continuing increase in the proportion of men who report injecting drugs in Melbourne and Queensland while trends have been stable in Sydney as well as nationally. 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.

Table 10: Men who reported any use of selected recreational drugs in the six months prior to the survey: GCPS, 2006-2015 (all states or territories)

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Amphetamines (e.g. 'speed', 'crystal meth')	25.5	19.7	18.9	17.2	16.4	14.9	16.8	16.7	16.7	16.8	↓	ns
Amyl nitrite	38.1	36.3	39.2	35.1	38.4	37.1	37.1	38.5	38.3	40.6	ns	ns
Cannabis	36.4	31.3	32.9	29.7	32.8	29.4	29.8	30.4	33.1	28.4	↓	ns
Cocaine	13.0	12.8	11.3	11.4	13.0	10.9	10.7	13.0	11.3	12.3	ns	ns
Ecstasy	30.3	28.3	26.6	25.6	24.7	18.6	17.1	18.6	17.3	12.3	↓	↓
Erectile dysfunction medication (e.g. Viagra, Cialis)	21.2	19.6	20.6	22.6	21.8	22.2	23.9	23.0	23.8	25.5	↑	ns

Figure 8: Men who reported any use of selected recreational drugs in the six months prior to the survey: GCPS, 2006-2014 (all states or territories)**Table 11: Men who reported any injecting drug use in the six months prior to the survey: GCPS, 2006-2015**

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Melbourne	8.0	4.9	6.2	6.7	4.5	4.9	9.5	3.9	8.0	7.8	ns	↑
Queensland	8.0	2.9	5.1	6.1	5.3	5.9	3.0	4.0	6.2	6.7	ns	↑
Sydney	6.5	8.4	8.1	7.8	6.9	5.2	5.9	6.2	8.2	6.6	ns	ns
All states/ territories	7.2	5.6	6.6	6.5	5.4	5.0	6.1	5.1	6.8	7.0	ns	ns

Figure 9: Men who reported any injecting drug use in the six months prior to the survey: GCPS, 2006-2015

3.2 Trend of methamphetamine use among gay and bisexual men

Toby Lea

Gay and bisexual men (GBM) report higher rates of methamphetamine use compared to heterosexual men. The contexts of, and motivations for, methamphetamine use differ considerably between GBM and heterosexual men, which can shape the problems GBM experience from use. For example, many GBM use crystal methamphetamine to enhance sexual pleasure, which has been associated with a higher likelihood of reporting sexual risk practices associated with HIV transmission, such as condomless anal intercourse with casual partners.

Much media and political attention has focused recently on an apparent increase in crystal methamphetamine use in the Australian general population. With this in mind, we sought to examine 10-year trends in crystal methamphetamine and powder methamphetamine ('speed') use among GBM participating in GCPS.

Speed use in the preceding six months steadily declined between 2005 and 2014: from 25.0% to 10.2%. However, crystal methamphetamine use in the preceding 6 months declined between 2005 and 2009 (from 15.6% to 9.6%), and then had a small but significant increase between 2010 and 2014 (9.6% to 11.4%). While there were no differences between HIV-positive and HIV-negative and untested men in recent speed use in 2014 (11.0% vs. 10.1%), HIV-positive men were much more likely to report recent crystal methamphetamine use compared to HIV-negative and untested men (27.4% vs. 9.9%). In addition, among GBM who reported recent crystal methamphetamine use in 2014, HIV-positive men were more likely than HIV-negative and untested men to report any injecting drug use in the preceding six months (53.8% vs. 21.9%). Crystal methamphetamine use in the previous six months was found to be associated with a range of specific sex and drug use practices, including any CLAI, drug use in sexual contexts (i.e. chemsex), GHB use, and drug injection in the previous six months.

The findings suggest that crystal methamphetamine use in sexual contexts is adopted by a small group of GBM who are likely to be involved in some sexually adventurous cultures. Responding to crystal methamphetamine use problems among GBM thus requires an understanding of the motivations for and pleasures derived from using methamphetamine in sexual contexts. The high rates of crystal methamphetamine use and injecting among HIV-positive men in particular indicates that these men should be a specific focus for harm reduction and treatment services.

Reference

Lea, T., Mao, L., Hopwood, M., Prestage, G., Zablotska, I., de Wit, J. & Holt, M. (2016). Methamphetamine use among gay and bisexual men in Australia: Trends in recent and regular use from the Gay Community Periodic Surveys. *International Journal of Drug Policy*, 29, 66-72.



3.3 Hepatitis C knowledge among gay and bisexual men

Toby Lea

GBM are at an elevated risk of acquiring HCV via the sharing of unsterile injecting equipment as well as sexual risk practices. HIV-positive men are overrepresented among GBM living with HCV, with recent self-reported estimates suggesting that around 10% of HIV-positive GBM in Australia have chronic HCV. The prevalence of HCV among HIV-negative GBM is thought to be similar to that in the general population (around 1%).

While GBM's health literacy and knowledge about HIV is generally quite good, there is comparatively little known about their knowledge of HCV. A national, online survey was conducted in 2013 that aimed to explore the social dimensions of HCV infection among GBM. Completed questionnaires were received from 405 men. The mean age of participants was 39 years. Most men identified as gay (90%) and had completed a university degree or other tertiary qualification (71%). Forty-one percent of participants reported being HIV-positive and 30% had ever injected drugs.

Knowledge about HCV varied considerably among the sample. Knowledge about HCV transmission was generally good, with most respondents correctly identifying injecting drug use and sex between men as potential transmission routes. Less was known about HCV testing, HCV treatments and the natural history of HCV infection. As this study was conducted in 2013, questions about the new direct-acting antiviral treatments were not asked. Knowledge was highest among participants with a university education, and among men at a higher risk of HCV transmission including participants who were HIV-positive and who reported injecting drug use. Viral hepatitis and HIV organisations, together with other health services should continue to target GBM at a high risk of acquiring HCV with education and health promotion.

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3.4 Hepatitis C, sex and drug-related risk among Australian gay and bisexual men

Max Hopwood

Illicit drug use is characterised as a valued gay cultural practice. For example, research has found that gay and bisexual men use the drug crystal methamphetamine to enhance sociality and to increase sexual pleasure (Southgate & Hopwood, 2001). Notwithstanding these culturally desired effects, injecting drug use in particular can increase the risk of blood-borne virus transmission when injecting equipment is shared, intentionally or unintentionally.

The sharing of injecting equipment, including ancillary equipment such as swabs, spoons and water phials, is a primary risk factor for the transmission of HCV infection. In Australia over recent years, hepatitis C prevention has become a concern for health promotion aimed at lesbian, gay, bisexual and transgender communities, in part due to the high rate of injecting drug use reported by gay and bisexual men. A recent national, online CSRH study of hepatitis C infection (Hopwood, Lea, & Aggleton, 2015) found that the sharing of injecting equipment by Australian gay and bisexual men was associated with crystal methamphetamine use and socialising for sex. In total, 41% (i.e. n=29) of 71 gay and bisexual men who had injected in the previous six months, reported sharing injecting equipment, including needle syringes, in the six months prior to the study. Most commonly, participants reported sharing ancillary injecting equipment such as swabs, filters and water phials.

Theoretically, hepatitis C transmission can occur among gay and bisexual men because of poor knowledge about infection risks from sharing injecting equipment, a lack of amenities for safer injecting in sexual settings, and/or specific crystal methamphetamine-related effects that inhibit safer injecting and sexual practices. However, it is currently unknown why gay and bisexual men share ancillary injecting equipment. Some sharing practices are likely to occur within HIV and/or hepatitis C sero-concordant regular relationships. The CSRH study findings suggest that the sharing of injecting equipment might also be a result of ritualised patterns of behaviour. To explore this proposition further, an investigation is needed into the sub-cultural meanings of crystal methamphetamine use, the injection of drugs and the sharing of injecting equipment within social-sexual settings in Australian gay communities. Such a study will generate useful theory regarding the intersection of drug use and sexual practice among gay and bisexual men, and the harms associated with co-occurring sex and drug-related practices.

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3.5 Hepatitis C risk factors, attitudes and knowledge amongst HIV-positive, HIV-negative and HIV untested gay and bisexual men in Australia

Loren Brener

There are increasing reports of sexual transmission of HCV among HIV-positive MSM. In contrast, HCV prevalence among HIV-negative MSM is low and comparable to that of the general population. Research suggests that an increasing number of MSM, especially those who are HIV-positive, may be engaging in sexual practices which may in turn place them at risk of acquiring HCV. Given that this group is at increased risk of contracting HCV, it is important to understand the level of HCV knowledge and sexual risk practices of HIV-positive gay and bisexual men compared to HIV-negative and HIV-untested men in order to develop particular education and intervention strategies around HCV transmission.

This research compared HCV knowledge and risk practices among HIV-positive, HIV-negative, and HIV-untested gay and bisexual men in Australia. Participants (n=534) completed an online survey assessing sexual risk practices, HCV knowledge, perceived risk of acquiring HCV, and perceptions of people with HCV and who inject drugs. Findings show that differences exist between HIV-negative, HIV-positive, and HIV-untested gay and bisexual men on a range of sexual activities and attitudes associated with HCV. The HIV-positive group report engaging in a greater number of behaviours that place them at risk for HCV; however, they also believe that they are at higher risk of acquiring HCV and show more positive attitudes towards people with HCV and those who inject drugs than other participants. In contrast, the HIV-untested group reported engaging in fewer risk practices, but had lower HCV knowledge and more negative attitudes towards people with HCV and those who inject drugs than HIV-positive participants. They were also more likely to socially and sexually exclude people with HCV compared with both groups. Findings from this data also indicate that there is an association between negative attitudes towards HCV and HCV testing, with those holding more negative attitudes less likely to be tested for HCV. Hence, these negative attitudes towards HCV may present a barrier to HCV testing. The findings of this research indicate that HIV-positive men engage in greater risk practices than other groups, which includes both sexual and injecting practices, such as sexually adventurous behaviour in the context of drug injecting. Additionally, the findings suggest that HCV education and prevention for gay men may be most effective if tailored according to HIV status.

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3.6 Sexual identity and substance use in the general Australian population

Toby Lea

Gay, lesbian and bisexual (GLB) people typically report higher rates of alcohol and other drug use and harms compared to heterosexual people. However, most Australian research in this area has relied on convenience samples, as national population surveys have only recently begun to collect data on sexual identity. To address this gap, in collaboration with the National Drug and Alcohol Research Centre, we analysed data from the 2013 National Drug Strategy Household Survey to compare the population prevalence of alcohol and other drug use between GLB and heterosexual people.

While there were no differences between GBM and heterosexual men in the prevalence of tobacco use (18% vs. 14%) and risky drinking (16% vs. 10%) in the preceding 12 months, GLB women were significantly more likely than heterosexual women to report tobacco use (24% vs. 11%) and risky drinking (8% vs. 3%). Regarding illicit drug use, GBM had 2.3 times the odds of heterosexual men in reporting any illicit drug use in the preceding 12 months (36% vs. 17%), while GLB women had 3.5 the odds of heterosexual women in reporting any use (29% vs. 11%). GLB participants were also more likely to report injecting drug use in the preceding 12 months compared to heterosexual participants (2.4% vs. 0.2%).

Consistent with international research, these findings provide some of the first population level evidence that GLB people are at a heightened risk of substance use and harms from use in Australia, and highlight that GLB women are an important target for tobacco and alcohol interventions. These findings suggest a need for more responsive and targeted harm reduction and treatment services for GLB people in Australia.

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4 People who inject drugs, Aboriginal & Torres Strait Islanders & prisoners: hepatitis C prevention



4.1 Understanding and preventing hepatitis C transmission within heterosexual couples

Carla Treloar

In a NHMRC-funded study, we explored the practices surrounding injecting drug use in interviews with 40 heterosexual couples. The partnerships of people who inject drugs are based on mutual trust, honesty, and care. People in couple relationships value their own health and that of their partners, and want to ensure the ongoing security of their relationships. Relationships between couples who inject can serve to protect each partner in the couple from 'external' threats such as stigma and other aspects of a hostile social environment in which injecting drug use is heavily stigmatised. Couples typically report sharing injecting equipment only when no other sterile injecting equipment can be accessed: it is a 'last resort'. While people who inject drugs with their partners are motivated to protect each other's health and the security of the relationship, their decisions about injecting practice may run counter to advice on HCV risk when they try to balance these sometimes competing priorities. For example, caring for a partner and the security of the relationship may mean reusing or sharing injecting equipment to cope with the immediate demands of drug dependence and withdrawal. Couples are not indifferent to HCV risk when reusing or sharing injecting equipment. Many couples engage with biomedical knowledge around HCV and incorporate it into forms of 'negotiated safety': organising the reuse or sharing of injecting equipment according to each partner's serostatus or genotype. Couples who inject drugs are not addressed in existing health promotion work and the harm reduction workforce is not equipped or orientated to engage effectively with couples who inject drugs.

It is possible to develop new approaches to harm reduction that address couples who inject drugs. These could include messages that acknowledge the mutual care and protection within couples and the desire to protect and enhance the health for each partner; i.e. messages that address the emotional basis of the relationship beyond concerns about viral risk. We can also redesign injecting equipment and packaging to promote and support additional discussions about couple-based safety between clients and workers in harm reduction services, and to promote discussion and awareness of practice among couples. There is a need for better recognition of the meanings attached to injecting equipment for couples who inject (such as its role in demonstrating care between partners). It is important to acknowledge the serious impact of unequal gender power relations on some couples, including the occurrence of family and domestic violence. The inequities within such couples may seriously limit the injecting-related choices available to one of the partners.

Failing to recognise the unique issues that face couples who inject drugs and disregarding their

partnerships mean missed opportunities for understanding decision-making around injecting drug use and HCV prevention. Failing to acknowledge the strengths of partnerships among people who inject is likely to limit the impact of hepatitis C prevention and health promotion programs.

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4.2 Peer distribution of sterile injecting equipment: research supports recent change of laws in three Australian jurisdictions

Carla Treloar, Joanne Bryant, Max Hopwood and Christy Newman

The Northern Territory (NT) and Australian Capital Territory (ACT) governments recently announced their intentions to change their laws to allow members of the community to exchange used equipment in efforts to reduce the transmission of blood borne viruses. The availability of sterile needles and syringes is a key component in efforts to prevent transmission of HIV, hepatitis C and hepatitis B. Australia has supported publicly funded Needle and Syringe Programs (NSP) since the 1980s. However, until recently, passing sterile needles and syringes between community members has been illegal in all Australian states and territories.

These laws go against what happens in the community, as has been found through detailed analysis of these practices. Dr Joanne Bryant and Dr Max Hopwood were among the first to document that the practice of providing small amounts of sterile equipment to others was a relatively frequent practice among people attending community pharmacies to obtain sterile equipment. The main motivation for this practice was to support other people who inject drugs in their desire to use drugs in the safest way possible. Although frequently occurring, most people provided only a small amount of equipment to their peers. This was further supported by research undertaken by Dr Jamee Newland, whose PhD project at CSRH showed that a small number of people can distribute thousands of pieces of equipment each year in more formal and organised ways.

Recent research examined the ways in which laws around “peer distribution” of equipment portray people who inject drugs as needing control and oversight. This portrayal undermines the potential to engage people who inject drugs as partners in the prevention of blood-borne viruses. Importantly, these laws have been used in a previous manslaughter prosecution (in NSW) where a person supplied a needle to a second person and that (second) person later died of an overdose. These laws and the use of them in this prosecution could act as a significant barrier to people carrying extra sterile equipment to pass on to those in need, and as a vital cog in the prevention of blood borne virus epidemics.

These changes in the NT and ACT follow changes in Tasmania in 2015 to allow distribution of equipment by those involved in the practice. In doing this, the legal systems of these three jurisdictions have caught up with practices that have long been regarded as normal and vital in the community. These changes mean that it will be possible to properly promote and support peer distribution for improving the cost-effectiveness of the NSP and making the program an even better public health investment. Besides the very practical outcomes, these changes provide the potential to position people who inject drugs as powerful actors in achieving better health outcomes.

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4.3 Injecting drug use among Indigenous young people: the role of incarceration in Indigenous injecting and BBV acquisition

Joanne Bryant

The Goanna Project provides the first national profile of risk behaviours, levels of knowledge and the types of health services used by young Indigenous people for sexual health, blood-borne viruses and illicit and injecting drug use. Funded through an Australian Research Council (ARC) Linkage project, it collected data from 40 Indigenous cultural events across Australia resulting in the collection of 2,877 surveys from Indigenous young people aged 16-29 years.

In relation to injecting drug use, the sample offers unique insights compared to other studies of Indigenous people who inject drugs. The sample was young (on average 21 years, compared to the much older participants of the Australian NSP Survey, for example) and thereby better represents current trends in the uptake of injecting among Indigenous people. The data showed a low prevalence of (recent) injecting in the previous 12 months, at about 3% of the total sample, although this is a higher proportion than the <0.5% reported in the general population. We observed a very high rate of receptive needle syringe sharing (37% of those who had injected) in the past 12 months although this is similar to that reported in recent studies of younger injectors, which suggests that the high risk injecting found in the Goanna data may not be specific to Indigenous young people but is a pattern of risk attributable to young people more generally. Moreover, almost a quarter of our participants reported that they had injected methadone, which carries significant risk since it requires specialised injecting equipment that is typically not available at primary NSP.

Importantly, data shows that those who had injected were five times more likely to have been in prison. Incarceration has a recurrent and strong association with substance use among Indigenous people. At an average age of 21 years, almost half of the participants in our study who had injected had already been in prison. Given the known high risk of BBV acquisition in Australian prisons, priority must be given to reducing the numbers of Indigenous young people entering justice settings in the first place, delaying the age at first entry to justice settings through diversion schemes, and reducing the risk of BBV virus acquisition while in justice settings. Prison-based NSP is one practical way in which harm can be reduced for Indigenous young people in custody, but other innovative programs must accompany this, including BBV education, low threshold access to pharmacotherapy, and Indigenous-specific treatment that emphasises connection to country and culture which has been shown to be effective in international settings.

The Goanna Project was conducted with a team of investigators from CSRH, The Kirby Institute, the Australian Research Centre in Sex Health and Society and the School of Public Health and Community Medicine at the UNSW, in partnership with the National Aboriginal Community Controlled Health Organisation.

References

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4.4 Navigating services: pathways to alcohol and other drug care and treatment among young drug users involved with the police in NSW and Victoria

Joanne Bryant

There are significant rates of hepatitis C among young people incarcerated in juvenile justice facilities. Understanding the pathways by which young people may find themselves at the attention of police is important to understand their down-the-track vulnerability to hepatitis C infection. There is a small group of young people in the community who, for a variety of reasons, have recurring contact with the police, and drugs and alcohol are usually implicated in some way. The justice system seeks leniency when they commit offences, especially in relation to drug and alcohol offences. While Australia has comprehensive and often complicated diversion programs for young people who offend, there is still opportunity to improve pathways into treatment, and police play an important first-stage role in determining these pathways.

During 2012-2015, CSRH in collaboration with Turning Point Alcohol and Drug Centre in Victoria, conducted a study that looks at police and their diversion practices in relation to young substance users. The project used a mixed method design: it used existing survey data in NSW (n=219) and Victoria (n=150, 3 time points), together with in-depth interview data collected during the course of the project. Interviews were conducted with police (n=25), young substance users aged 16-24 years (n=23), and staff of youth-focused alcohol and drug services (n=16).

The findings showed that some vulnerable young people become entrenched in the justice system at a young age and that the time between first police contact and incarceration was short. This provided a narrow window of opportunity for therapeutic services to intervene. In addition, the pathways into therapeutic care for young people were not straightforward and shaped significantly by adversarial relationships between young people and police. These relationships were partially a product of harsh policing practices (reported by young people and some police interviewees) which served to exacerbate young people's involvement in the justice system. Similarly, police found their interactions with young people to be emotionally challenging because of the often repeated violent encounters with them, and their beliefs that some young people lacked the capacity to change their behaviour.

At a systemic level, the study found that these negative relationships took place within a highly complicated and inconsistent diversion framework, which often only worked if the individual police officer involved had good knowledge about the available cautions and referrals. Further, the referral system appeared less consistent in NSW compared to Victoria, mainly because Victoria had an e-referral system whereby police could enter a young person's needs (emergency accommodation, drug and alcohol counselling) and this was triaged to a range of social and health support services in order to provide the most appropriate help. This system also had the benefit of notifying police whether a young person had taken up their referrals, providing a feedback system which, at times, countered their view that young people lacked the capacity to change their behaviour.

Reference

Green, R., McLean, S., Bryant, J., Gray, R., Brown, R. & Rance, J. (2015) *Characteristics of vulnerable young people in inner-city areas who use alcohol and other drugs; policing and pathways to diversion and care*. Turning Point Alcohol and Drug Centre, Melbourne.

4.5 Tobacco free prisons increases tattooing harm

Carla Treloar

Implementing strategies to positively influence the health of prison inmates is challenging. The unanticipated outcomes of important public health interventions must be examined in prisons where the restrictions of the environment impact inmate behaviour in ways that are different to the community. Data from a CSRH project on BBV risks in prisons raises important concerns in relation to recent moves to create “tobacco free” prisons in various Australian jurisdictions.

Rates of tobacco smoking among Australian prison inmates are very high and deserve attention to alleviate the individual and social burden of smoking-related ill-health. Australian prison authorities have moved to implement various programs to reduce or eliminate tobacco smoking among prison inmates and staff. While programs to benefit the health of inmates are welcome, recent data highlight the potential of unanticipated increased risks of blood borne virus transmission via tattooing in prison.

Tattooing in prison remains illegal. However, tattoos are regularly done as inmates acquire and manufacture the relevant equipment and ink from materials within the prison. Analysis of qualitative interview data (conducted by CSRH as part of a NHMRC Partnership Project, HITS-P) highlighted the important role of lighting implements (matches or cigarette lighters that were previously freely available) in the production of ink for tattooing.

A ban on tobacco smoking in prisons also categorises lighting implements as contraband. Hence, ink that may have been manufactured afresh for each tattoo (as access to lighting implements was unrestricted) may now become a more precious commodity that is stored for later re-use or shared between people creating a risk for transmission for blood borne viruses when no (or minimal) risk existed before.

Other jurisdictions in Australia have implemented programs in which inmates are trained to provide tattoos and sterile implements are provided. Such programs could be considered in Australian prisons. In addition, our surveillance systems may need sharpening to be able to record and attribute BBV transmission that occur as a result of this change in policy and practice in an area that targets other aspects of inmates' health.

Reference

Treloar, C., Baldry, E., Higgs, P., Dietze, P., Stooze, M. & Lloyd, A. (2015). Going tobacco free in Australian prisons – increasing tattooing harm? *International Journal of Prisoner Health*, 11. doi: 10.1108/IJPH-04-2015-0011

4.6 Acquiring hepatitis C in prison: the role of social organisation

Carla Treloar

Establishing that a hepatitis C infection was acquired in prison is difficult to achieve in practice. Australian prisons typically offer screening for blood borne viruses on entry to prison. Subsequent tests must be at the inmates' request. The Hepatitis C Incidence and Transmission Study in Prison (HITS-P) provided the infrastructure to monitor inmates without hepatitis C throughout the duration of their incarceration and identify incident infections among those continuously incarcerated. A qualitative sub-study was conducted to examine the accounts of those men and women found to have acquired hepatitis C in prison as well as examine accounts of risk of hepatitis C in prison as a result of injecting, tattooing and other blood-to-blood contact.

In a study of 30 inmates, six participants (four men and two women) were interviewed about the individual, social, and environmental circumstances of HCV acquisition in prison. Participants reported that they could not ascertain a change in their routine that would account for hepatitis C acquisition. However, on prompting, two participants did discuss injecting with others outside of a trusted network (in which participants relied on others' to disclose HCV status) or the use of a pre-mixed “gift” shot of drugs in which he did not have control of the injecting equipment used. Participants were aware of the need and mechanism of cleaning injecting equipment. However, some participants were ambivalent about the effectiveness of cleaning in preventing BBV transmission or were unable to put advice into practice because of limitations in the environment (lack of time, privacy, or fear of detection). Being

diagnosed with HCV resulted in participants feeling angry (at others with HCV) or regretful of their practice, particularly in relation to the cleaning of equipment.

Without access to sterile equipment in prison via a formal NSP, inmates have few means by which to reduce their HCV risk. Programs and policies that can impact this risk include those within the criminal justice system (such as decriminalisation of drug use or alternative, community-based sentencing options for those with drug-related convictions) and within the corrections health system (such as greater access to drug treatment programs). This study is among the first to examine the accounts of people who have acquired hepatitis C in prison and to highlight the complex decisions inmates are required to make to reduce their HCV risk when they do not have access to services equivalent to community standards.

Reference

Treloar, C., McCredie, L. & Lloyd, A. R. (2015). Acquiring hepatitis C in prison: the social organisation of injecting risk. *Harm Reduction Journal*, 12, 10. doi: 10.1186/s12954-015-0045-2



4.7 Prison NSP service provision

Carla Treloar

There is strong evidence of the effectiveness of Needle and Syringe Programs (NSP) and NSP in prisons (PNSP) to reduce sharing of used equipment among people who inject, and in turn, reducing the risk of transmission of blood borne viruses. Despite more than 80 countries implementing community NSP, only eight countries have implemented PNSP. Australia is one of the many countries which has rejected this evidence and failed to protect the health of inmates and the community via the provision of sterile injecting equipment in prison, which is at odds with the standard of care provided in the community.

A commentary in the Medical Journal of Australia examined a range of factors in the Australian context. Advocacy for PNSP comes from endorsements from leading Australian medical and health bodies as well as international agencies such as the World Health Organisations and UNAIDS. Leadership in policy circles has been inconsistent. Prison inmates have been named as a priority population in all four National Hepatitis C Strategies but the current strategy (2014-2017) omits articulation of PNSP as a specific strategy for prevention, despite the previous strategy (2010-2013) making a strong call for trialling of PNSP.

The commentary published in the Medical Journal of Australia also examines local policy and practice with a focus on the ACT where the strongest hope exists for a future trial of PNSP in the Alexander Maconochie Centre. However, the union representing corrections officers has strongly resisted such a trial on the basis of workplace health and safety concerns and that a PNSP can encourage drug use in custody. Neither of these claims has been supported by evidence from PNSP operating in other countries.

Writing as a coalition of researchers and community advocates, this commentary aims to reinforce understanding of the existing evidence and outline the concerns contributing to inertia on PNSP. We have called for the ACT government to show leadership and press ahead with their efforts to implement the trial PNSP. We note that no visible progress towards this goal has been made in the intervening period.

Reference

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5 Young people: STIs



5.1 Young people's knowledge of STIs

Philippe Adam, John de Wit, Mandy Schippers and Dean Murphy

Holding adequate knowledge of STIs is important for effective prevention and management of STIs. A range of sexual health promotion initiatives have been conducted in the past years to increase STI knowledge among young people. Our assessment of the extent of knowledge of STIs among heterosexually identified young people is based on data collected from 2,120 young people aged 15-29 years and living in NSW who responded to the It's Your Love Life (IYLL) periodic survey between December 2015 and March 2016.

The survey questionnaire included an STI knowledge scale adapted from previous surveys and developed in collaboration with stakeholders delivering sexual health information and services to young people. Participants were asked to answer 7 questions relating to a range of topics, including severity of STIs, prevalence of STIs among young people, symptoms, transmission, and treatment of STIs. For each question, answer possibilities included 'true', 'false', and 'unsure'. Answers to these questions were analysed individually, and an overall count (range 0-7) of correct answers to questions on STI knowledge (range 0-7) was calculated.

On average heterosexually identified participants provided correct answers to 5.4 of the 7 STI knowledge questions. Knowledge of STIs was higher among sexually active participants than among non-sexually active participants (5.6 versus 4.8, $p < 0.001$). Both in non-sexually active and in sexually active participants, knowledge of STIs was higher in female than male participants.

While most participants provided correct answers to most questions aimed at measuring their knowledge of STIs, only half (51.3%) knew that Chlamydia is the most common STI among young people. A similar proportion of participants (53.9%) knew that STIs often have no symptoms. The proportion of individuals who were able to provide a correct answer to this last question was lower among male participants (23.6%).

These results indicate that knowledge of STIs is moderately fair among heterosexually identified young people aged 15-29 years in NSW. However, while a minority, there is still a substantial minority of young people who do not hold correct knowledge on basic notions, including the fact that STIs most of the time have no symptoms. Results also show a discrepancy in levels of knowledge by gender to be further addressed by sexual health campaigns and other activities. Increasing levels of knowledge of STIs among male young people appears to be a priority.

5.2 Perceived severity of STIs and perceived risk of contracting an STI

Philippe Adam, John de Wit, Mandy Schippers and Dean Murphy

The notion of perceived threat refers to both perceived severity and perceived risk. As young people's perceived threat regarding STIs is a dimension that may influence their sexual health related behaviours, levels of perceived threat merit to be assessed through behavioural surveys. Our assessment of the extent of perceived threat of STIs among heterosexually identified young people is based on data collected from 2,120 young people aged 15-29 years and living in NSW who responded to the IYLL periodic survey between December 2015 and March 2016.

Perceived severity of STIs was measured using 2 items ('Contracting an STI could seriously affect my health'; 'Contracting an STI is no big deal' (reverse scored)) as was perceived risk of contracting an STI ('I believe I could contract an STI', 'I feel that I'm unlikely to get an STI' (reverse scored)). Answers to all questions were provided on a 5-point scale (from 1-'Totally disagree' to 5-'Totally agree') and, for each dimension of perceived severity and perceived risk, scores were averaged.

Almost all participants somewhat or totally agreed with the idea that 'contracting an STI could seriously affect their health' (93.4%) and only a few (5.2%) somewhat or totally agreed with the statement 'contracting an STI is no big deal'. The overall score of perceived severity was very high (mean=4.57, range 1-5) and similar among both non-sexually active and sexually active participants. While no gender difference could be observed among non-sexually active participants, sexually active young women, even more than sexually active young men, perceived having an STI as a severe condition.

A strong majority of participants (69.9%) somewhat or totally acknowledged that they felt they were 'unlikely to get an STI' and a third (34.2%) somewhat or totally agreed with the idea that they 'could contract an STI'. The overall score of perceived risk of contracting an STI was low among participants (mean score=2.40). While no gender differences could be observed in perceived risk, it was slightly lower among non-sexually active participants than among sexually active participants.

Results indicate that while the severity of STIs is acknowledged by most heterosexually identified young people, many of them still consider themselves at low risk of contracting an STI.

5.3 Perceived barriers to condom use

Philippe Adam, John de Wit, Mandy Schippers and Dean Murphy

Promoting condom use among young people requires comprehensively addressing a range of (perceived) individual, social and structural barriers to and facilitators of condom use in this population. Our assessment of the extent of various (perceived) barriers to and facilitators of condom use among heterosexually identified young people is based on data collected from 2,120 young people aged 15-29 years and living in NSW who responded to the IYLL periodic survey between December 2015 and March 2016.

Both non-sexually and sexually active participants were asked to report on fourteen indicators of potential barriers to and facilitators of using condoms derived from previous research and discussions with sexual health promotion stakeholders. Answers provided to each question on a 5-point scale (from 1-'Totally disagree' to 5-'Totally agree') were assessed individually.

Most heterosexual young people surveyed believed that using condoms has many advantages (91.2%), is a good thing (93.8%), and they also indicated that they knew where to get condoms (93.0%). Additionally, most participants (84.5%) were confident that they could use condoms when they wanted and 72.9% agreed that using condoms is easy. There was also a majority of participants (55.4%) who felt supported by their peers and believed that significant others would support their condom use.

Some perceived barriers to using condoms seemed, however, to remain. More than half of participants (52.2%) believed that condoms reduce pleasure; 35.1% were worried about confidentiality when getting condoms; 31.2% considered that condoms were expensive, and 21.2% considered condoms as unreliable. A positive outcome, however, was that only a minority of participants considered that using condoms was embarrassing (8.2%), believed that using condoms is a sign of distrust (5.0%), or

thought that people would think less of them if they would use condoms (3.2%).

These results offer an understanding of perceived barriers to, and facilitations of, condom use that can be addressed by sexual health promotion campaigns and other activities targeting heterosexual young people.

5.4 Condom use

Philippe Adam, John de Wit, Mandy Schippers and Dean Murphy

Promoting condom use among young people aged 15-29 years is a public health priority with a range of initiatives having been developed to achieve this target. Our assessment of the extent of condom use among heterosexually identified young people is based on data collected from sexually active young people aged 15-29 years and living in NSW who responded to the IYLL periodic survey between December 2015 and March 2016.

Participants who ever had sex (n= 1,514, 65.9% female) were asked how frequently condoms were used during sexual intercourse, either vaginal or anal, in the 12 months prior to the survey. As can be seen in Table 12, only 10.8% had no sexual intercourse in the past 12 months; 26.9% always used condoms during sexual intercourse, and 37.6% sometimes and 24.6% never used condoms during sex. Overall, a majority of heterosexually identified young people (62.2%) were found to have had sex without consistent condom use in the 12 months prior to the survey and the extent of condomless sex was similar in young men and young women (59.9% and 63.5%, respectively).

These results call for the strengthening of condom use promotion among heterosexually identified young people. This will require comprehensively addressing some of the individual, social and structural barriers that prevent young people to use condoms, including improving access to free condoms and addressing issues of confidentiality (see section 5.3 and 5.9).

Table 12: Patterns of condom use during sexual intercourse in the past 12 months among heterosexually identified young people who ever had sex

	Sexually active participants (%)		
	All	Males	Females
No sexual (vaginal or anal) intercourse	10.8	11.6	10.4
Consistent condoms use	26.9	28.5	26.2
Inconsistent condoms use	37.6	37.8	37.5
No condom use	24.6	22.1	26.0
Total	100	100	100

Source: It's your love Life (IYLL), 2015-2016. $p > 0.05$ based on Pearson's Chi-square test

5.5 Contraception

Philippe Adam, John de Wit, Mandy Schippers and Dean Murphy

Sexually active young people aged 15-29 years who identified as heterosexuals were surveyed about the forms of contraception they had been using in the 12 months prior to the IYLL survey between December 2015 and March 2016.

Participants could select options from a list of eight forms of contraception: condoms, birth control pill, withdrawal, emergency contraception, contraceptive implant, intrauterine device, rhythm method, and contraceptive injection. Terms popular among young people were used to explain some of these forms of contraception and participants also had the possibility to indicate any other forms at the end of the question.

Overall 94.1% of young women reported that they had used at least one form of contraception in the past 12 months. The form of contraception most frequently reported was condom use (66.0% of females) followed by birth control pills (56.4%), withdrawal (31.5%), emergency contraception (15.6%), and contraceptive implants (8.3%). Remaining forms of contraception were relatively rarely used.



5.6 Perceived barriers to STI testing

Philippe Adam, John de Wit, Mandy Schippers and Dean Murphy

A range of individual, social and structural barriers still prevent some young people from testing for STIs and/or HIV. It is therefore important to identify barriers that should be addressed as a priority by sexual health promotion campaigns.

Our assessment of the extent of various perceived barriers to and facilitators of testing for STIs is based on data collected from 2,120 young people aged 15-29 years and living in NSW who responded to the IYLL survey between December 2015 and March 2016.

Both non-sexually and sexually active participants were asked to report on twelve indicators of potential barriers to and facilitators of testing derived from previous research and discussions with sexual health promotion stakeholders. Answers to each question were provided on a 5-point scale (1–‘Totally disagree’ to 5–‘Totally agree’), which were assessed individually.

Most participants held positive attitudes towards testing for STIs. They considered that testing for STIs was a good thing (95.0%) and had many advantages (89.6%). A majority of participants (67.0%) also believed that they could test for STIs when they wanted; 59.6% indicated that they knew where to go to test for STIs, and only 9.2% of participants considered that testing for STIs was expensive.

While there is a clear perception of the advantages of testing, some perceived barriers did, however, seem to remain for some participants. Less than half of participants (40%) believed that testing for STIs is easy. A strong minority of participants (45.2%) considered that testing for STIs is embarrassing; 26% believed that people would think less of them if they would test for STIs, and 26.0% were worried about the confidentiality of testing. Finally, only a minority of participants in this sample (18%) felt supported by their peers and believed that they would support their testing for STIs. Subjective norms appear to be less supportive of testing for STIs than of condom use among heterosexually identified young people (see section 5.3 for a comparison).

Perceived barriers to testing for STIs, which need to be addressed by sexual health promotion campaigns and other activities, remain among some heterosexual participants. Among these remaining barriers to STI testing, lack of perceived support is an important factor and the strengthening of norms regarding testing for STIs among heterosexually identified young people appears to be a priority.



5.7 Testing for HIV or other STIs

Philippe Adam, John de Wit, Mandy Schippers and Dean Murphy

Establishing estimates of testing rates for STIs and/or HIV among male and female young people aged 15-29 years was a major objective of the IYLL survey conducted between December 2015 and March 2016.

Results presented below are based on a sample of 1,514 sexually active participants who identify as heterosexual. To prevent attrition bias, participants were asked to report whether they had tested for STIs and/or HIV at an early stage in the extended questionnaire and additional questions aimed at characterising participants' testing practices were included later in the course of the questionnaire.

As can be seen in Table 13, a majority of sexually active heterosexuals (55.2%) reported that they had never tested for either STIs or HIV; 42.8% reported they had ever tested, and only a very small proportion of participants (2%) did not know or were unsure about whether they had previously tested.

An interesting result was that the proportion of participants who reported to have tested for STIs and/or HIV strongly varied according to gender with only 36.4% of male participants ever tested compared to 46.1% of female participants.

Participants were also invited to provide additional information on the last time they tested for STIs and/or HIV. Results indicate that, of participants who had tested, 56.5% tested in the past 12 months. At their last test, only 3.5% of participants were tested for HIV alone. Most participants (84.2%) appeared to have been tested by a GP, either their own GP or another GP.

These results indicate that levels of testing for STIs remain low among heterosexually identified young people, especially in young men, and that promoting testing for STIs in this population group is a priority.

Table 13: Proportions of sexually active heterosexually identified young people who ever tested for STIs and/or HIV

	Sexually active participants (%)		
	All	Males	Females
Ever tested	42.8	36.4	46.1
Never tested	55.2	61.8	51.8
Don't know/Unsure	2.0	1.7	2.1
Total	100	100	100

Source: It's your love Life (IYLL), 2015-2016. $p=0.001$ based on Pearson's Chi-square test

5.8 Overall exposure to sexual health promotion messages

Philippe Adam, John de Wit and Mandy Schippers

Little information is available on the extent of exposure to sexual health promotion messages among heterosexually identified young people. Our assessment of the level of exposure to sexual health promotion messaging among heterosexually identified young people is based on data collected from a sample of 2,120 young people aged 15-29 years and living in NSW who responded to the IYLL survey conducted between December 2015 and March 2016.

Both non-sexually and sexually active participants who identified as heterosexuals were asked two questions aimed at measuring their level of exposure to messages promoting condom use among young people ('How often in the past 12 months did you notice health messages telling young people to use condoms?') and messages promoting testing for STIs in this population ('How often in the past 12 months did you notice health messages telling young people to test for STIs?'). Frequency of exposure was reported on a 4-point scale with options ranging from 1-'never' to 4-'often'.

Among sexually active young heterosexuals, only a minority (13.7%) reported that they did not notice any health messages telling young people to use condoms in the past 12 months; 36.7% rarely noticed these messages, 37.5% occasionally and 12.2% often. This means that half (50.4%) of heterosexually identified young people in this sample have never or only rarely been exposed to messages promoting condom use in the 12 months prior to the survey.

Exposure to messages promoting testing for STIs was less frequent than exposure to messages promoting condom use. A quarter (24.3%) of sexually active young heterosexuals reported that they did not notice any health messages telling young people to test for STIs in the past 12 months; 39.8% rarely noticed these messages, 28.3% occasionally and 7.6% often. These data indicate that 64.1% of young people in this sample have never or only rarely been exposed to messages promoting testing for STIs in the 12 months prior to the survey.

Overall, these results indicate that while most heterosexual young people have to some extent noticed messages promoting either condom use or testing for STIs, the frequency/regularity of their exposure remains moderate. A substantial proportion of heterosexually identified young people may not have been exposed to sexual health promotion messages with a regularity that would suffice to influence their sexual health-related attitudes and behaviours.

5.9 Engagement with specific components of the NSW SHP framework

Philippe Adam, John de Wit and Mandy Schippers

Data presented in section 5.8 indicate that heterosexually identified young people on average only 'occasionally' noticed messages promoting testing or condom use. In this section, we aim to report on heterosexually young people's engagement with specific components of the newly developed NSW

sexual health promotion framework (SHPF).

Our baseline assessment of heterosexually identified young people's engagement with SHPF components is based on a sample of 2,120 young people aged 15-29 years and living in NSW who responded to the IYLL periodic survey between December 2015 and March 2016.

In addition to questions on their exposure to sexual health messaging, participants were asked to indicate whether they were aware of any sexual health websites for people their age, whether they had received free condoms in the 12 months prior to the survey, and whether they had been in contact with various persons or services in relation to sexual health in the past year.

Only 9.9% of heterosexually identified participants were aware of any websites providing sexual health information. The proportion of heterosexually identified participants who reported to have received free condoms in the past 12 months was also limited (16.8%). Of the sexually active participants, 42.8% had been in contact with a GP or a nurse in relation to sexual health in the past 12 months, and 5.5% had visited a sexual health clinic. Contacts with youth services or youth workers were rare (2.5-2.6%).

It is still in the early stages of development of the programs within the SHPF and during the entire period of the NSW STI Strategy 2016-2020. Baseline awareness of sexual health websites was limited as was engagement with some specific SHPF components. These data provide a baseline to evaluate efforts to strengthen young people's engagement with SHPF components in NSW, which all aim to contribute to young people's sexual health in the future.

Results suggest that it would be important to improve access to (free) condoms and ensure young people are aware of the resources that have been made available to support their sexual health needs. Our findings provide directions to ensure all programs under the SHPF are strategically aligned to maximise young people's engagement with sexual health promotion. Results also provide a baseline to evaluate efforts to strengthen young people's engagement with SHPF components in NSW, which all aim to contribute to young people's sexual health in the future.

5.10 Sexual health education in secondary schools

Philippe Adam, John de Wit and Mandy Schippers

Secondary schools are key environments in which to provide sexual health education. To guide sexual health education efforts, we assessed the extent of exposure to sexual health education content among a sample of heterosexually identified secondary school students who participated in the IYLL periodic survey between December 2015 and March 2016. The sample for this analysis consists of 567 year 10-12 students (mean age=16 years, 69.3% female). Half of the 567 participants (50.6%) reported to be sexually active.

Students were asked to report the type of information they received as part of their sexual health education curriculum from a list of eleven topics (e.g. condom use, contraception, and sexual practices). Participants were also asked whether they thought sexual health education had increased their knowledge regarding sexual health. Perceived contribution of sexual health education to increased knowledge was measured using 5-point scales (from 1–'Totally disagree' to 5–'Totally agree').

Students on average reported to have received information relating to 6.7 sexual health education related topics. Topics reported most frequently included sexually transmissible infections (88.7%), contraception (81.8%), condom use and safe sex (76.7%), and anatomy and sexual function (70.5%). Students reported receiving information less frequently about sexual practices (42.0%) and first time/s sex (29.5%). Overall, most participants (78.7%) considered that sexual health education increased their knowledge.

Most secondary school students reported having received sexual health education in school. While the education content was comprehensive, there is scope to deliver more information regarding specific topics (e.g. sexual practices, and first time/s sex) to better support students.



5.11 Evaluation of the Play Safe website

Philippe Adam, John de Wit and Mandy Schippers

The online initiative Play Safe aims to promote condom use and testing for STIs among young people in NSW. A key component of the intervention is the interactive quiz 'Could I have an STI?' through which visitors receive tailored feedback on their personal risk of contracting an STI and barriers regarding condom use and STI testing. The extent to which the intervention delivered through the quiz can motivate young people to use condoms and test for STIs was empirically assessed on a sample of 1,828 sexually active participants aged 15 to 29 years living in Australia who entered the quiz between April 2014 and April 2016 and provided full data.

The assessment consisted of comparing pre- and post-intervention data routinely collected by the quiz software. Prior to receiving the intervention content, a quarter of visitors eligible for this assessment were randomly allocated to the survey and answered questions scored on 5-point scales (from 1–'Definitely not' to 5–'Definitely yes') about their intentions to use condoms and test for STIs. Participants were asked again about their intentions after exposure to the intervention.

Participants who provided data on their intentions did not differ significantly from other participants in terms of age, gender, number of sex partners, condom use and testing for STIs. The key finding of this evaluation study was that intentions to use condoms were significantly higher ($p < 0.001$) after exposure to the intervention than prior to the intervention, as were intentions to test for STIs. This suggests that the 'Could I have an STI?' online quiz was effective in motivating participants toward the two sexual health related behaviours targeted by the intervention. Our findings indicate that the use of a tailored interactive menu quiz offers novel opportunities for (sexual) health promotion.



5.12 NSW Sexual Health Promotion Framework Support Program and Evaluation

John de Wit

In 2014, the Centre for Population Health, NSW Ministry of Health, established the NSW SHPF, which is an internationally unique, comprehensive, action oriented approach to sexual health promotion. The Framework was developed to support the delivery of an integrated population-based prevention program to contribute to the achievement of the goals of the NSW Sexually Transmissible Infections Strategy 2016-2020 and NSW HIV Strategy 2016-2020. SHPF focuses on young people in NSW, aiming to support a safe sex culture, sustain the central role of condoms in preventing the transmission of STIs, and increase testing and treatment of STIs among priority populations.

Through the NSW BRISE Program, CSRH has designed and delivered an intensive Framework Support Program (FSP) to support the development of sexual health promotion programs or services. Each FSP consists of a group of up to 20 NSW-based experts in sexual health promotion and professionals from other sectors. To date, FSPs have been concerned with strengthening sexual health promotion in youth services, primary care, schools and out-of-home care, and through peer education, social marketing and better access to condoms. Further FSPs are scheduled to contribute to strengthening sexual health promotion for young Aboriginal people and with the mental health, drug and alcohol sector.

Each FSP consists of a series of webinars and working group activities. Working groups are led by dedicated Sexual Health Promotion Leaders, well-regarded peers who work in HIV and Related Program (HARP) Units, other health services, other parts of government, or non-government organisations. The FSP aims to reinforce the confidence and capacity of participants in making use of systematic health promotion planning approaches to strengthen results-based sexual health promotion. FSPs are focused on concrete outcomes, with the output of each FSP being a project plan for an evidence-based, theory-informed, new or revised sexual health promotion program or service for young people in NSW that can be implemented in Local Health Districts across the state.

Through the BRISE Program, CSRH is also able to provide support for the development and implementation of evaluation plans for the specific programs and services being developed through the FSP, as well as for the Sexual Health Promotion Framework as a whole. Specifically, advice from

the CSRH team will be provided regarding the program evaluation plan and assist with the design and implementation of data collection tools and systems, as well as with data analysis and reporting and developing recommendations. Furthermore, these CSRH staff will also develop and implement the periodic monitoring and evaluation of sexual health promotion delivery indicators. This encompasses developing, recording, analysing and reporting novel indicators to appraise (trends in) coverage and reach of sexual health promotion for young people in NSW, as well as regarding workforce capacity building activities and the use of sexual health promotion resources for professionals providing sexual health promotion for young people in NSW.



Part II

Testing, Diagnosis and Lived Experiences of BBVs/STIs

6 Gay men: HIV & STI testing and diagnosis



6.1 Ever and recent HIV testing

Limin Mao, John de Wit and Martin Holt

The proportion of men participating in the GCPS that ever tested for HIV is high, with around nine out of ten men nationally reporting that they have tested at least once for HIV (see Table 14 and Figure 10). However, after a long period of stability, a gradual downward trend is occurring in the proportion of participants in the GCPS reporting ever tested for HIV, although the rate is still high at 90% nationally. This downward trend in the proportion of participants reporting ever tested for HIV most likely reflects sampling variations over time, which may have attracted more men at a much younger age and other men who have not yet sought an HIV test. The decrease in the proportion of ever-tested men has been observed in all states and territories, except Melbourne and Perth, over the last 10 years. In the past three years, the proportion of men reporting that they have tested for HIV has stabilised nationally as well as in all states and territories.

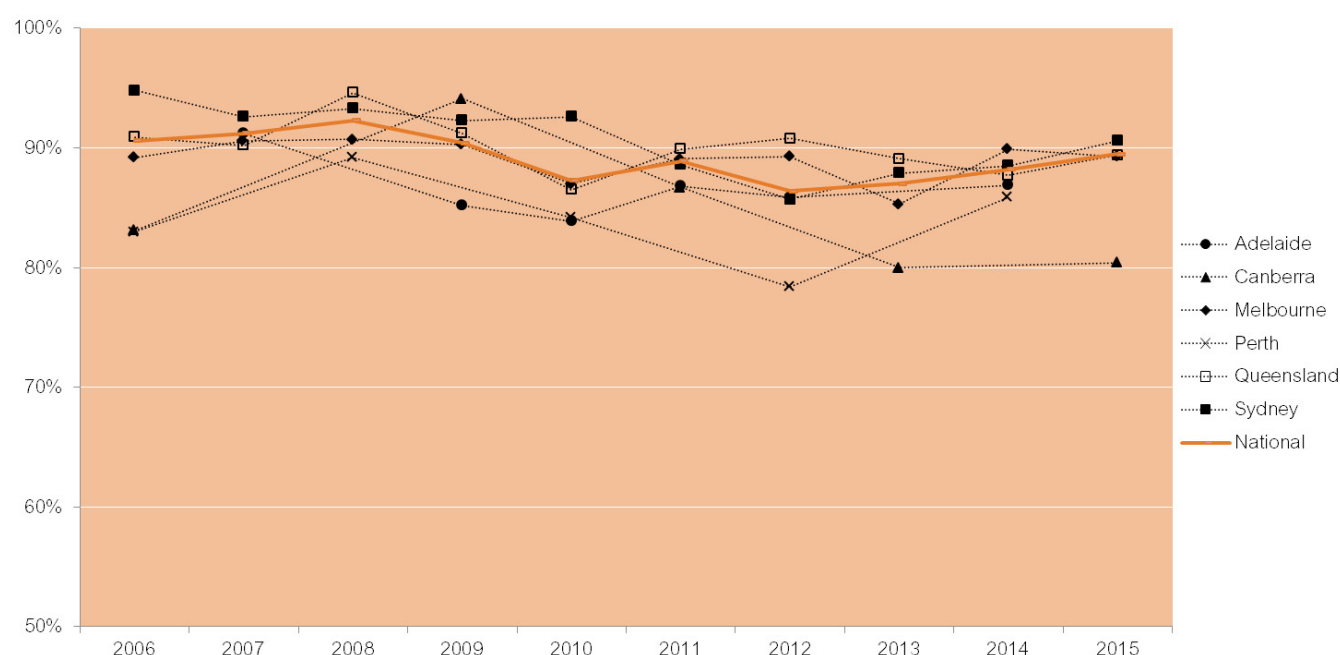
Table 15 and Figure 11 show the proportions of non-HIV-positive men (including those who do not know their HIV status) who reported an HIV test in the 12 months prior to the survey, sometimes referred to as “recent” HIV testing. Over the 10-year period, rates of recent HIV testing among non-HIV-positive men have increased in Melbourne and Queensland, stabilised in Canberra and Perth, and decreased in Adelaide and Sydney. In the past three years, rates of recent HIV testing have increased nationally, from 61% in 2013 to 66% in 2015, and increased rates of recent HIV testing can be seen in most states and territories, except in Canberra, where they declined, and in Melbourne, where they were stable.

Analysis of trends by age (unadjusted data) shows an increase in the rate of recent HIV testing among non-HIV-positive men in the 25-29-year age group (from 65% in 2006 to 71% in 2015; $p < 0.05$). There has, however, been a slight decrease in rates of recent HIV testing among non-HIV-positive men under the age of 25 (61% in 2006 to 60% in 2015, $p < 0.05$). The latter is likely to be explained by the higher proportion of online recruitment (over 20%) enrolling much younger men than in previous years.

In 2015, slightly over one-third of non-HIV-positive participants who had tested for HIV in the past 12 months reported one HIV test only; 35% had two tests and 29% had three or more HIV tests (unadjusted data, Table 16). The proportion of those who had more than one HIV test increased from 59% in 2013 to 64% in 2015 (unadjusted data, $p < 0.001$). This is most likely a result of the change in national testing guidelines recommending more frequent testing, particularly for men who are at increased risk of HIV (Templeton, Read, Varma, & Bourne, 2014), and the increased promotion of HIV testing in most jurisdictions.

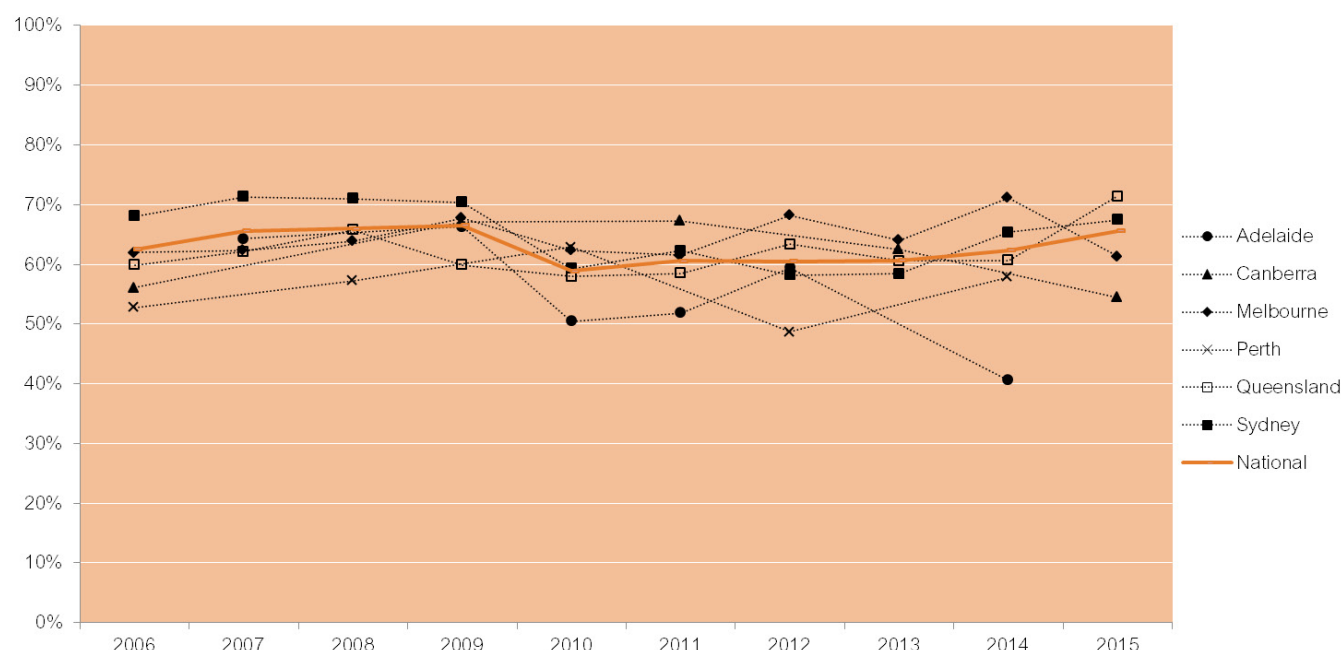
Table 14: Men who had ever tested for HIV: GCPS, 2006-2015

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Adelaide		91.2		85.2	83.9	86.8	85.9		86.9		↓	-
Canberra	83.1			94.1		86.7		80.0		80.4	↓	ns
Melbourne	89.2	90.6	90.7	90.3	87.0	89.1	89.3	85.3	89.9	89.3	ns	ns
Perth	83.0		89.2		84.2		78.4		85.9		ns	-
Queensland	90.9	90.2	94.6	91.2	86.5	89.9	90.8	89.1	87.7	89.4	↓	ns
Sydney	94.8	92.6	93.3	92.3	92.6	88.6	85.7	87.9	88.5	90.6	↓	ns
Tasmania									82.4		-	-
All states/ territories	90.6	91.2	92.3	90.4	87.3	88.9	86.4	87.0	88.2	89.5	↓	ns

Figure 10: Men who had ever been tested for HIV: GCPS, 2006-2015**Table 15: Non-HIV-positive men tested for HIV in the 12 months prior to the survey: GCPS, 2006-2015**

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Adelaide		64.3		66.3	50.5	51.9	59.4		40.6		↓	-
Canberra	56.1			67.1		67.3		62.5		54.5	ns	↓
Melbourne	62.0	62.4	63.9	67.8	62.4	61.5	68.2	64.1	71.2	61.4	↑	ns
Perth	52.8		57.3		62.9		48.7		57.9		ns	-
Queensland	59.9	62.1	65.8	59.9	58.0	58.5	63.4	60.6	60.7	71.4	↑	↑
Sydney	68.1	71.3	71.0	70.4	59.3	62.3	58.2	58.4	65.4	67.5	↓	↑
Tasmania									41.9		-	-
All states/ territories	62.5	65.6	66.0	66.5	58.9	60.6	60.5	60.7	62.4	65.6	ns	↑

This table includes all men whose HIV status was not reported as positive, regardless of being tested for HIV or not in the past 12 months.

Figure 11: Non-HIV-positive men tested for HIV in the 12 months prior to the survey: GCPS, 2006-2015**Table 16: Number of HIV tests among non-HIV-positive men who had been tested for HIV in the 12 months prior to the survey: GCPS, 2013-2015 (all states or territories, unadjusted data)**

	2013 %	2014 %	2015 %	3-year average
Once	38.7	39.2	34.3	37.2
Twice	37.5	35.8	35.5	36.1
Three times or more	21.5	23.0	28.7	24.8
Missing data	2.3	2.0	1.5	1.9
Total n	n=3,367	n=4,132	n=4,765	

This table includes men whose HIV status was not reported as positive and who had been tested for HIV in the past 12 month.

6.2 Comprehensive STI testing

Limin Mao, John de Wit and Martin Holt

Table 17 and Figure 12 show the proportions of GCPS participants 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) (Holt, Hull, et al., 2014). We regard having at least four different tests to indicate 'comprehensive' STI testing (i.e. testing for a range of STIs and taking specimens from different anatomical sites), as recommended in HIV/STI testing guidelines for gay men (e.g. STIGMA, 2014; Templeton, Read, Varma, & Bourne, 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 12-month period before the survey.

Since 2006, there has been a continuous and substantial increase nationally in the proportion of men in the GCPS who report four or more STI tests in the previous 12 months, from 26% in 2006 to 44% in 2015. Over the past 10 years, an increase in comprehensive STI testing has been observed in every participating jurisdiction, except in Adelaide. The proportion of men reporting four or more STI tests has increased nationally in the past three years and in most states and territories, except in Canberra, where rates decreased, and in Melbourne, where rates were stable.

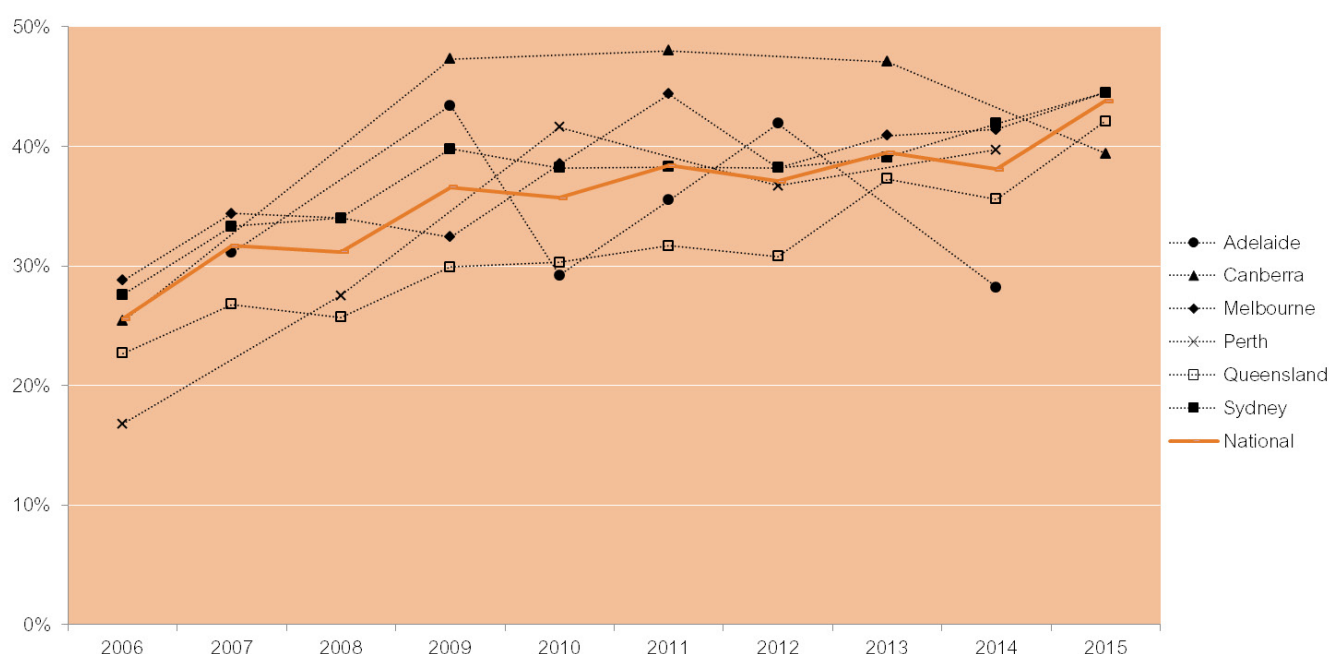
A comparison of trends by HIV status (unadjusted data) shows substantial increases in comprehensive STI testing among both HIV-positive men (from 36% in 2006 to 67% in 2015; $p < 0.001$) and non-HIV-

positive men (from 24% in 2006 to 39% in 2015; $p < 0.001$). HIV-positive men remain more likely to report comprehensive STI testing than non-HIV-positive men. Comprehensive STI testing has become significantly more likely across all age groups. However, as typically over 80% 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; Templeton et al, 2014), our findings highlight that there remains considerable room for improvement in comprehensive STI testing among gay men.

Table 17: Men who reported having at least four different STI tests in the 12 months prior to the survey: GCPS, 2006-2015

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Adelaide		31.1		43.4	29.2	35.5	41.9		28.2		ns	-
Canberra	25.4			47.3		48.0		47.1		39.4	↑	↓
Melbourne	28.8	34.4	34.0	32.4	38.5	44.4	38.2	40.9	41.4	44.5	↑	ns
Perth	16.8		27.5		41.6		36.7		39.7		↑	-
Queensland	22.7	26.8	25.7	29.9	30.3	31.7	30.8	37.3	35.6	42.1	↑	↑
Sydney	27.6	33.3	34.0	39.8	38.2	38.3	38.2	39.1	41.9	44.5	↑	↑
Tasmania									28.4		-	-
All states/ territories	25.6	31.7	31.2	36.6	35.7	38.4	37.1	39.5	38.1	43.8	↑	↑

Figure 12: Men who reported having at least four different STI tests in the 12 months prior to the survey: GCPS, 2006-2015



6.3 Identifying and reducing barriers to HIV testing for gay and bisexual men

Martin Holt

In the last five years there has been a flurry of research on reducing barriers to HIV testing. This is primarily in response to national and state HIV strategies that aim to increase the uptake and frequency of HIV testing, particularly in priority populations like gay and bisexual men. Increasing the frequency

of HIV testing is seen as necessary to reduce the burden of undiagnosed infection, decrease the time between infection and diagnosis, and more rapidly engage HIV-positive people in treatment and care.

Reviews suggest that there are common and enduring barriers to HIV testing, such as perceiving oneself to be at low risk of HIV, fearing the consequences of testing (such as discrimination or rejection), and perceiving few benefits of testing (de Wit & Adam, 2008). Recent Australian research has found that structural barriers and the inconvenience of testing, such as difficulty in finding somewhere to test, getting an appointment, or having to return to the clinic for test results, are additional impediments to improving the frequency of testing (Conway, Guy, Davies, et al., 2015; Prestage, Brown, & Keen, 2012). This has prompted reflection on the ways in which HIV testing is accessed, and has led to new models of service delivery.

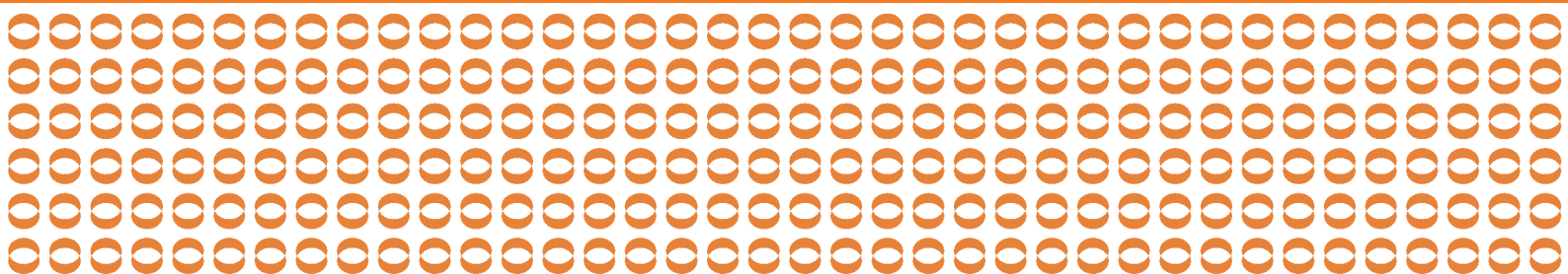
Rapid HIV tests allow people to receive their test results while they wait at a service or clinic (sometimes referred to as 'point-of-care' testing). Research conducted at Sydney sexual health clinics, where rapid HIV tests were introduced, found that the rapid tests were greatly preferred to conventional HIV testing by gay and bisexual men and that clinicians found the tests easy to use, particularly as they became more experienced with them (Conway, Guy, Davies, et al., 2015; Conway, Guy, McNulty, et al., 2015). However, an evaluation of the rapid tests' performance against conventional laboratory testing revealed that early HIV infections were sometimes missed by the rapid tests, highlighting the importance of identifying people who may have been recently exposed to HIV and using laboratory testing to confirm rapid HIV test results (Conway et al., 2014).

While a limited number of rapid, point-of-care HIV tests are available for use in Australia, HIV self-testing remains a controversial and unsupported practice in the National HIV Testing Policy (Commonwealth of Australia, 2013). This is primarily because of fears about the lack of medical supervision and support, particularly if users receive a positive test result. However, HIV self-testing has been successfully introduced overseas, and research with Australian gay and bisexual men has found that the majority of men are interested in using self-tests, particularly those who find it inconvenient to attend services for testing (Prestage et al., 2016). Mathematical modelling suggests that if gay and bisexual men at high risk of HIV supplemented testing at services with self-tests at home, then HIV would be diagnosed more quickly in Australia (Guy et al., 2015). A randomised trial of HIV self-testing by gay and bisexual men is currently underway in Australia, and is expected to report its results in the second half of 2016 (Jamil et al., 2015). The trial's primary focus is whether providing HIV self-tests increases the overall frequency of HIV testing. Its results are eagerly anticipated.

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7 People living with HIV & people living with hepatitis C: testing, assessment and living with the virus



7.1 HIV sero-discordance and its influence on patterns of HIV and viral load testing

Asha Persson

Clinical engagement and regular testing are core aspects of the HIV treatment cascade; especially HIV testing by sexually active people and viral load testing by those diagnosed with HIV. The focus of the cascade is generally on individual engagement in care. But how does testing of HIV and viral load work in the context of sero-discordant primary relationships where the two partners require different tests, and ideally repeatedly? There is surprisingly scant available literature on the meanings and practices of testing in such couples.

This question was part of a broader study on gay and heterosexual couples with mixed HIV status in NSW, YouMe&HIV, completed in 2016 and funded by NSW Health. Findings showed that the 25 couples represented in the study were highly engaged with clinical care through the use of HIV treatment and services for monitoring and testing, but with some interesting variations.

Firstly, there was a strong commitment among HIV-positive partners to regularly monitor their viral load. Most did so every three months on average and no less than every six months. Being in a mixed-status relationship was a major motivator to remain actively engaged with clinical care and vigilant around viral load, given the broad awareness around the relationship between viral load and infectiousness. Couples described the monitoring of viral load as highly important to the health of both partners, as well as conducive to a safe and satisfying sex life together.

HIV testing was not seen as of equal importance to the wellbeing of the relationship. About two thirds of the negative partners tested for HIV every 3-6 months, while a third tested less frequently. However, none of the negative partners never tested for HIV; once every two or three years was the minimum. Those who tested regularly explained that the testing was more for reassurance or was part of regular health check-ups, rather than based on any specific concern about HIV transmission. The majority of negative partners felt their sexual relationship was safe in the context of effective HIV treatment, including those who had condomless sex, and perceived any risk as very low or even non-existent. For that reason, some negative partners clearly saw frequent testing as unnecessary. However, most of the negative partners who did not test regularly were heterosexual; hence, it is likely that the absence of a culture of HIV testing among heterosexuals also played a part.

Although some positive partners felt comforted by infrequent partner testing, especially when it was sanctioned by their HIV doctor, positive partners were generally keen for their negative partner to

test on a regular basis, not only because it provided a sense of relief and reassurance that they were “doing a good job”, but because it was seen as an important marker that their HIV-positive status was safe, that they were not infectious, and that their undetectability rendered sero-discordant sexuality unproblematic.

Understanding the different meanings around testing among couples with mixed HIV status is of great value to ensuring the strength of the treatment cascade and how best to support affected populations in engaging with clinical care in a way that makes sense to them.

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7.2 Knowledge about liver diseases and liver fibrosis assessment among people who inject drugs in alcohol and other drug treatment

Carla Treloar

This study was led by the Kirby Institute as part of an ongoing collaboration with CSRH and other stakeholders to increase awareness and uptake of hepatitis C treatment among people who inject drugs, with a particular focus on the drug treatment setting. An important part of the cascade of care for people living with hepatitis C is appropriate assessment of liver disease. Transient Elastography (TE) is a non-invasive, painless, ultrasound technique for assessing liver health. This study examined the acceptability of TE assessment among people with a history of injecting drug use attending drug treatment.

The LiveRLife campaign materials were developed and focus tested in close consultation with people who inject drugs. These materials included a recruitment poster, TE results card, website, and a short film. Four clinics were involved in the study and 253 participants were recruited. Participants undertook a baseline survey, TE assessment, follow-up clinical assessment, and a post-survey.

While baseline knowledge scores were moderate, there were significant gaps in knowledge of HCV antibody testing, factors impacting on HCV disease progression, and response rates to HCV treatment. TE was highly acceptable prior to TE and this acceptability increased after screening.

This study points to the need for continuing efforts to increase the knowledge of people who inject drugs regarding HCV natural history and treatment. The high acceptability of TE in this population suggests that this technology would be useful to include in multi-faceted campaigns such as liver health promotion campaigns.

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7.3 Positive Speaking among people living with hepatitis C

Elena Cama

Positive speakers are people who speak publicly about living with an illness for the purpose of public education. C-een and Heard is a positive speaking program of Hepatitis NSW in Sydney, Australia, using educational presentations by people living with hepatitis C to increase understanding of the

infection and reduce discriminatory attitudes towards people living with hepatitis C and people who inject drugs among health and community workers. This program has already been shown to positively impact on audience members by reducing stereotyped and discriminatory perceptions of the two groups (Brener, Wilson, Rose, Mackenzie, & de Wit, 2013).

For this paper, data from interviews with nine C-een and Heard positive speakers were used to explore experiences of and motivations to participate in positive speaking, and the impact of the program on speakers. Speakers reported that they had commonly witnessed and experienced hepatitis C-related discrimination, particularly in health care settings. While these experiences were distressing, they led speakers to challenge misinformation and negative attitudes and start on a path of advocacy, culminating in participation in positive speaking. Ultimately, speakers felt empowered by the program as they believed they were making a real difference in changing attitudes among people who may provide health care for future generations diagnosed with hepatitis C. Other positive outcomes included increased hope and self-esteem. The program not only provided speakers with the opportunity to connect with like-minded peers, but also an avenue through which to be supported by audience members and program organisers. This program highlights that, in some cases, people living with a stigmatised condition may reject their stigmatised identity and seek to change public opinion about their community group, such as through advocacy and education, with positive results.

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7.4 The role of Aboriginal community attachment in buffering against the negative consequences of stigma and promoting lifestyle changes after hepatitis C diagnosis

Loren Brener

Attachment to a community and feelings of belonging to this community can perform a protective function for those who belong to a marginalised group (Sellers & Shelton, 2003). Aboriginal Australians have a long history of persecution and experience of ongoing stigma and discrimination in Australia. However, a small body of research has shown that stigma does not always result in negative outcomes, rather the impact of stigma can be a function of the resources that people have to cope with this stigma. A strong attachment to and identification with a community could possibly act as a buffer against the negative effects of stigma. Hence, this research assessed whether Aboriginal people living with HCV who have a stronger attachment to their Aboriginal community would experience less of the negative effects associated with stigma. Two hundred and three Aboriginal people living with HCV were administered a survey assessing community attachment, resilience, quality of life, HCV treatment intent, HCV knowledge, and positive lifestyle changes after diagnosis.

Findings from this research show that those who felt more attached to their Aboriginal community were more likely to show greater resilience, report having a better quality of life, and report experiencing less HCV-related stigma than those who were not as attached to their Aboriginal community. Most importantly, attachment to an Aboriginal community was associated with positive lifestyle changes, such as changing their diet, reducing or cutting out alcohol, reducing or no longer using illicit drugs, increasing level of exercise, and having more regular HCV check-ups after diagnosis with HCV. Hence, the findings of this study highlight the importance of Aboriginal community attachment as related to positive health outcomes among Aboriginal people living with a stigmatised illness. A strong sense of community attachment may provide positive reinforcement and buffer against the negative health

consequences known to be associated with stigma. In fact, this community attachment appears to promote positive health behaviours, such as lifestyle changes that may serve to modify HCV disease progression, ultimately leading to better health outcomes. As over 80% of this sample had not engaged in HCV treatment, it is clearly very important to establish factors that increase positive changes in health behaviours in order to reduce the impact of HCV.

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7.5 Multiple stigma among Aboriginal and Torres Strait Islander people living with hepatitis C

Carla Treloar and Loren Brener

The association between the experience of stigma and poorer health outcomes has been well established. What is less well understood is the experience and impact of multiple stigmas, i.e. when people are labelled with more than one stigma-acquiring identity category. For Aboriginal people living with hepatitis C, there is another layer to explore of the cultural experience of shame which has also been described as having profound impact on health and health care outcomes.

Recently, CSRH undertook a study of Aboriginal people living with hepatitis C in NSW. This study included surveys with 203 people (see section 7.4) and qualitative interviews with 39 people. The interview data allowed us to examine the accounts of participants as they related to the overlapping origins of stigma (such as related to perceived injecting drug use, hepatitis C status, and Aboriginal identity) and cultural shame.

While participants' accounts of the stigma associated with living with hepatitis C were similar to those collected in other populations, it was also important to note the entangling of hepatitis C-related stigma and the societal expectations of Aboriginal people. This was described by participants as an "automatic" expectation that Aboriginal people would have stigmatised conditions such as hepatitis C. Further, the linking of hepatitis C, stigma and colonisation requires an understanding of health that is not limited to individualised and biomedical conceptualisations but one which acknowledges historical and intergenerational trauma.

These results present challenges for efforts to reduce hepatitis C related stigma among Aboriginal people. We need to look beyond responses that are based on provision of information and education and acknowledge the links between structural and historical factors (such as racism and colonisation) with current experiences. This means understanding how individual experiences (interlocking stigmatised identities) reflect structural inequalities. This suggests that multi-level approaches to stigma that address structural factors and draw upon the resistance offered by stigmatised communities are required.

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7.6 Evaluating the Deadly Liver Mob Project

Carla Treloar

Over the past two years, CSRH has been working on an evaluation of Deadly Liver Mob (DLM) in two pilot sites. DLM is a health promotion project devised by Local Health Districts aiming to provide hepatitis C education, as well as screening for hepatitis C and sexually transmissible infections. On

the basis of this evaluation and existing collaboration, CSRH has been successful in applying for a NHMRC Partnership Grant to examine the roll-out of DLM in additional five sites. This new project aligns with a growing international interest in implementation science. Local Health Districts will determine how to implement DLM in their site, and the evaluation will examine how new sites adapt the original protocol to meet the needs of their unique sites in terms of local supporting services, workforce, and engagement with community. We will use routinely collected data to examine patterns of attendance at sexual health clinics in the two years prior to and in the period of DLM operation. We will also collect additional qualitative data from health staff and from community members to examine how these important stakeholders experienced the DLM project. The overall goal of the project is to contribute to policy and programming for the NSW Ministry of Health and in Local Health Districts and to contribute to understanding how programs serving Aboriginal communities can be implemented in mainstream health services.



7.7 The Stigma Indicators Project

Elena Cama and Carla Treloar

Stigma is well recognised as having a major negative impact on health outcomes among people living with blood borne viruses and sexually transmitted infections. Experiences of stigma and discrimination are associated with poorer mental health, social isolation, and reduced health care seeking behaviours and adherence to treatments. This can have adverse implications for public health initiatives which target prevention and management of infection. Australia currently has a suite of five national strategies addressing HIV, viral hepatitis, and sexually transmissible infections. Each strategy contains a clear objective to eliminate the negative impact of stigma, discrimination, and legal and human rights issues on people's health. Despite this, there is currently no system in place to assess and monitor experiences of stigma among people with BBVs/STIs to feed back to these strategies.

The aim of this study is to develop a brief indicator to measure experiences of stigma among priority groups identified by the five national strategies addressing blood borne viruses and sexually transmissible infections, including men who have sex with men, people who inject drugs, people living with HIV, people living with viral hepatitis (B and C), and people who engage in sex work. The indicator will be included in existing routine surveys of people who inject drugs and men who have sex with men, and in new surveys of people living with HIV and hepatitis C. This project also aims to develop a mirrored indicator that can be used among health care professionals and the general population. This indicator will be used to measure the expression of stigma, such as discriminatory or negative treatment of patients or clients in a new survey of health professionals.

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Part III

Treatment, Service Engagement & Care for BBVs/STIs

8 Gay men: HIV treatment



8.1 HIV-positive gay men antiretroviral treatment coverage and viral load

Limin Mao, John de Wit and Martin Holt

Nationally, the proportion of HIV-positive men recruited into the GCPS has been in the range of 14-18% between 2006 and 2015 (see Table 18 and Figure 13). 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 different jurisdictions (Prestage et al., 2008). Specific reports on the smaller states (Adelaide, Canberra, Perth, and Tasmania) have been omitted from state-by-state analysis as the limited numbers of HIV-positive men recruited in these locations may result in unreliable estimates and trends. HIV-positive participants from these jurisdictions are, however, included in the national trend.

The proportion of HIV-positive men participating in the GCPS nationally has been relatively stable over time. This partly reflects the stability of survey recruitment over time. Although the number of people living with HIV has increased substantially during the reporting period, the estimated HIV prevalence rate appears to be stable (The Kirby Institute, 2015).

The use of combination antiretroviral therapy by HIV-positive men at the time of the survey is shown in Table 19 and Figure 14. It is important to note that the smaller states (Adelaide, Canberra, Perth, and Tasmania) 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, Perth, and Tasmania are, however, included in the national trend.

Nationally, about 75% of HIV-positive men in the GCPS reported being on antiretroviral treatment (ART) between 2006 and 2015, with a significant increase in the proportion on treatment during the reporting period, particularly since 2007. In 2015, 80%-90% 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 10-year period and in the past three years. Nationally, the proportion of HIV-positive men on treatment reached its highest reported level in 2015 (87%). In the past three years, the proportion of HIV-positive men on treatment has increased most notably in Melbourne, from 66% in 2013 to 88% in 2015.

Table 20 and Figure 15 show the proportions of HIV-positive men reporting an undetectable viral load at the time of the survey, which serves as an indicator of successful viral suppression at both the individual level and community level. It is important to note that this includes all HIV-positive men, regardless of whether they are receiving treatment or not (the majority on treatment, as reported above). The smaller states (Adelaide, Canberra, Perth and Tasmania) have been omitted from state-

by-state analysis because of the small samples of HIV-positive men in these jurisdictions. They are, however, included in the national trend.

There have been substantial increases in the proportions of HIV-positive men reporting an undetectable viral load in Sydney, Melbourne, and Queensland since 2006. In 2015, 85%-95% of HIV-positive men in Sydney, Melbourne, and Queensland 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 men are initiating treatment at shorter intervals after HIV diagnosis, and treatments are more successful in achieving viral suppression than before. The increase in the proportion 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; De La Mata et al., 2015). In the past three years, the proportion of HIV-positive men with an UDVL has continued to increase among participants in Sydney, Melbourne, and Queensland. Nationally, the proportion of HIV-positive men with a UDVL has also increased in the past three years to reach a record high of 88%. The combined increases in both ART coverage and viral suppression, particularly over the past three years, reflects the increased focus on treatment as prevention (TasP) in national and state HIV strategies.

Table 18: Men who are HIV-positive: GCPs, 2006-2015

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Melbourne	16.5	15.2	16.1	14.9	16.9	19.5	16.8	13.5	20.4	25.0	↑	↑
Queensland	13.6	10.2	11.0	11.6	14.6	14.2	9.2	21.3	15.9	11.8	↑	↓
Sydney	23.2	17.2	25.5	19.9	18.2	17.9	17.1	16.9	19.4	16.5	↓	ns
All states/ territories	17.5	14.9	17.4	14.4	15.5	16.9	14.0	16.5	16.5	18.3	ns	ns

Figure 13: Men who are HIV-positive: GCPs, 2006-2015

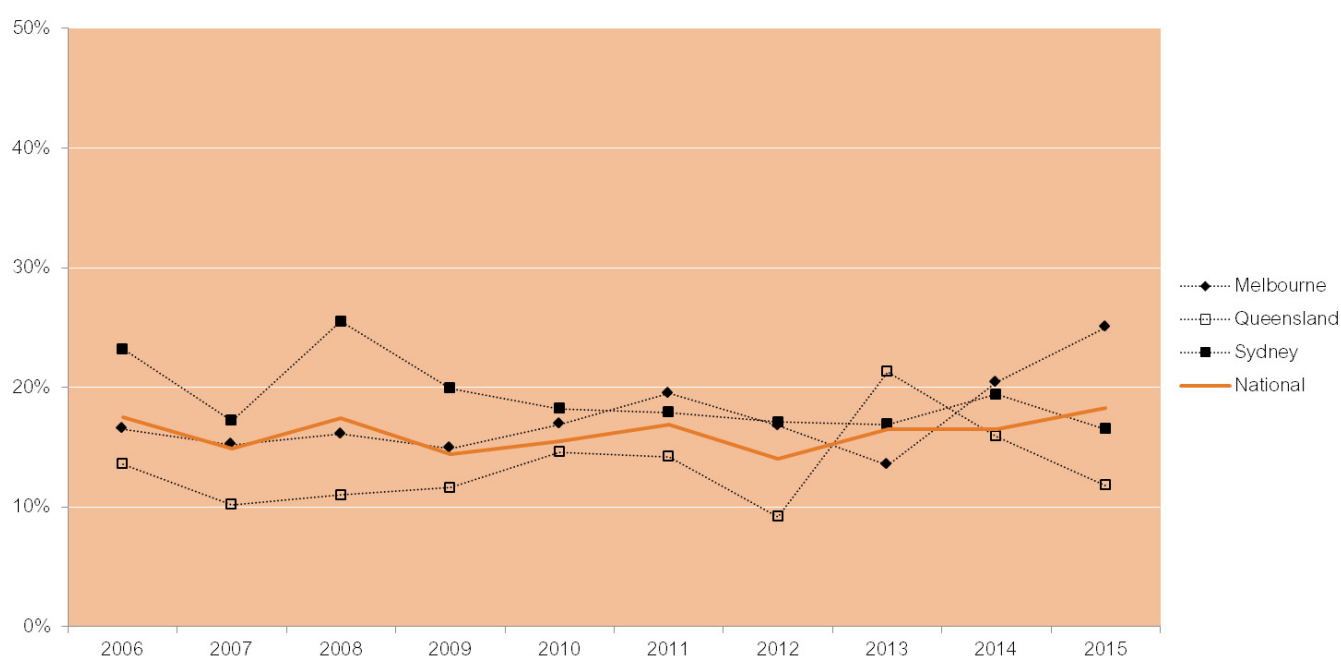
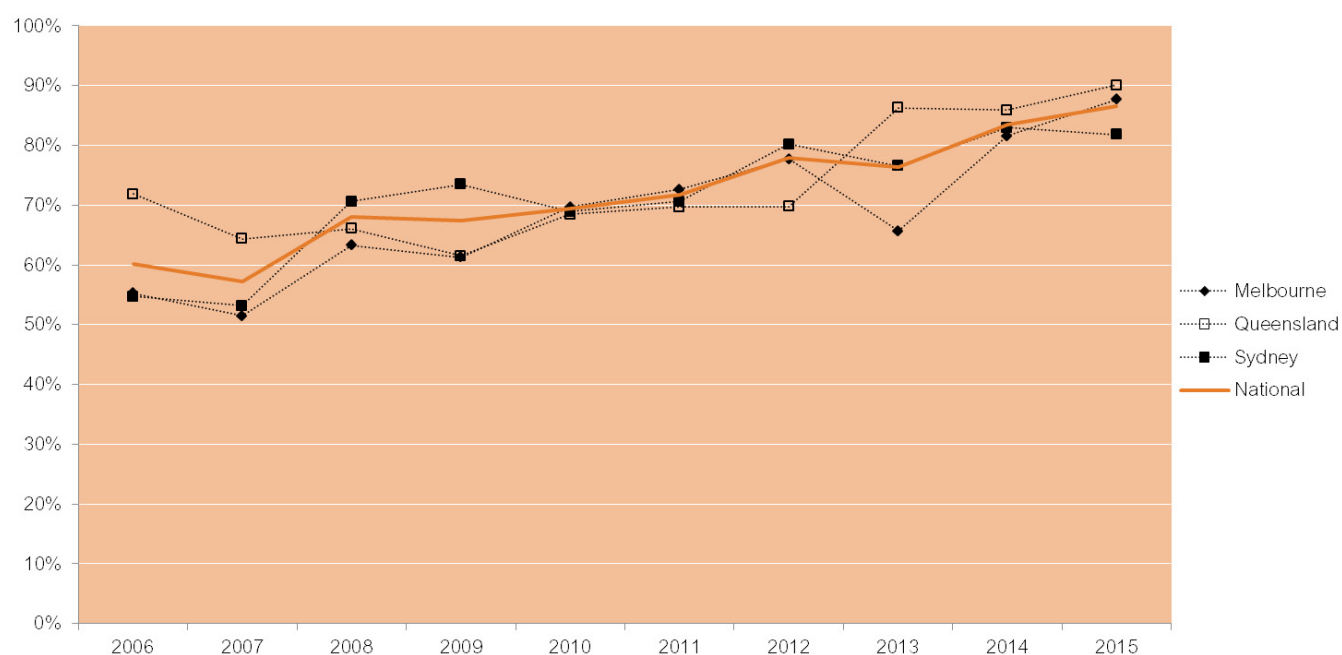
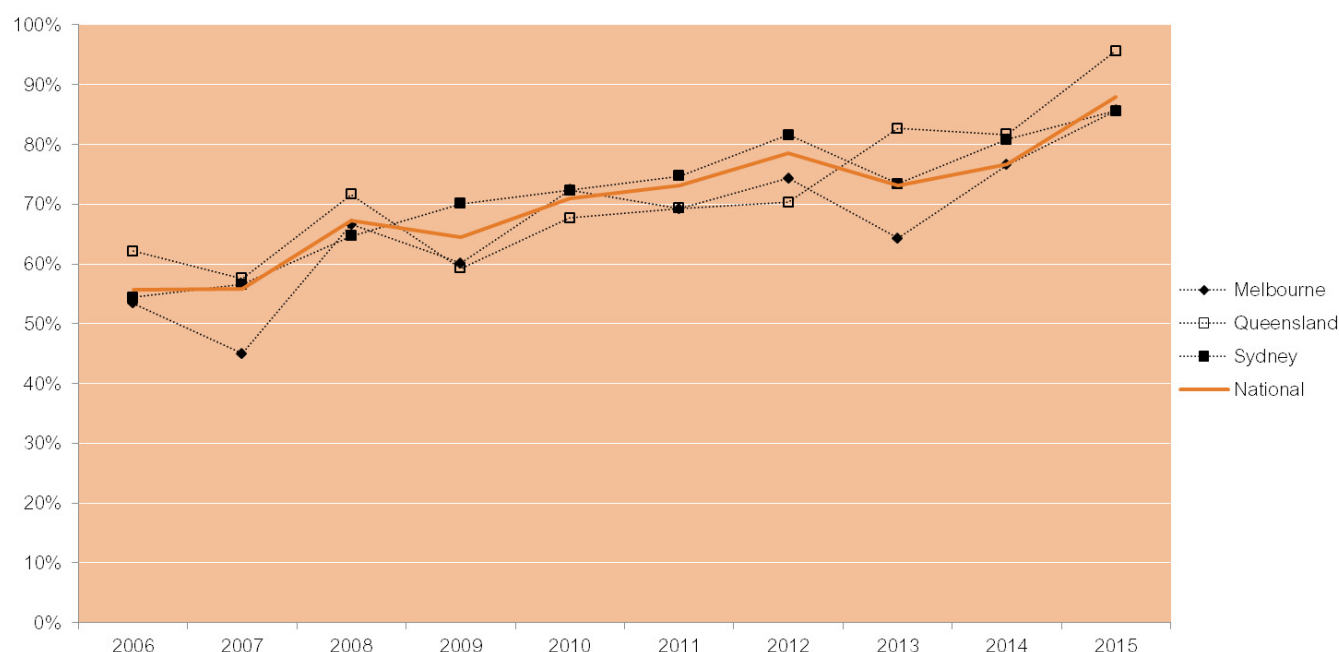


Table 19: HIV-positive men on antiretroviral treatment, 2006-2015

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Melbourne	55.3	51.5	63.3	61.3	69.7	72.6	77.7	65.7	81.6	87.7	↑	↑
Queensland	71.9	64.4	66.1	61.5	68.5	69.7	69.8	86.3	85.9	90.1	↑	↑
Sydney	54.7	53.2	70.6	73.5	68.9	70.6	80.2	76.6	83.0	81.8	↑	↑
All states/ territories	60.1	57.2	68.0	67.4	69.5	71.8	77.9	76.4	83.5	86.5	↑	↑

Figure 14: HIV-positive men on antiretroviral treatment: GCPS, 2005-2016**Table 20: HIV-positive men who reported an undetectable viral load: GCPS, 2006-2015**

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Melbourne	53.4	45.0	66.6	60.1	72.4	69.2	74.3	64.3	76.6	85.7	↑	↑
Queensland	62.1	57.6	71.6	59.3	67.7	69.3	70.3	82.7	81.7	95.6	↑	↑
Sydney	54.4	56.6	64.7	70.1	72.3	74.7	81.6	73.4	80.8	85.6	↑	↑
All states/ territories	55.7	55.8	67.3	64.5	70.9	73.2	78.5	73.1	76.7	87.9	↑	↑

Figure 15: HIV-positive men who reported an undetectable viral load: GCPS, 2006-2015

8.2 Understanding and responding to consumer doubts about HIV medicine

Christy Newman, Asha Persson, John de Wit, and Limin Mao

To support the promotion of early, lifelong use of antiretroviral therapy among people with HIV, an in-depth understanding of the reasons why a minority prefer to delay or refuse treatment is essential. With funding from the National Health and Medical Research Council (NHMRC), we interviewed 27 people with HIV not using treatment, and published four papers in high impact international journals as well as one summary piece in a community magazine on the complexities of promoting treatment uptake, including the doubts and fears that consumers can hold regarding commencing a lifelong, daily regime of medication use (see references below). Some had been recently diagnosed, and did not feel ready to make the commitment required when embarking on a lifelong therapeutical regimen requiring strict daily adherence. Others faced challenges in accessing therapies due to their immigration status, financial situation, or geographic location. Additionally, a proportion were not able to use conventional treatments for other health reasons, or had prescribing doctors who remained cautious about recommending “early” treatment. Some of our participants also provided reasons for non-use of treatment which revealed a deep distrust in medicine, yet this is by no means unique to HIV. Indeed, as a general observation, a view shared by all of our participants, and one that is likely to be recognized in most other areas of medicine, is that initiating a lifelong regimen of pharmaceutical medication requires careful thought and a deep and considered commitment. Adding a public health imperative into this complex mix does not always sit easily with those who hold doubts about medicine, even though the concept of treating for prevention benefit was generally well understood by our participants. The field of HIV medicine has a number of important questions to now debate regarding the mechanisms through which the communities who are the target of contemporary treatment and prevention technologies can be meaningfully engaged regarding the social complexities of treatment use and non-use. We need to ensure that the growing focus on treatment uptake avoids contributing to practices or perceptions of coercion, which risk forcing those with even minor doubts into stronger positions of treatment refusal and mistrust in the healthcare system.

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8.3 ART treatment uptake by gay men is high and reasonably equitable

Limin Mao

Based on data from the community-based GCPS study as reported in section 8.1 and the clinic-based databases (i.e. the Australian HIV Observational Database [AHOD] and the Australian Collaboration for Coordinated Enhanced Sentinel Surveillance of blood borne viruses and sexually transmitted infections [ACCESS]), ART coverage in Australia continues to increase and is reasonably equitable across different groups at various stages of HIV infection (De La Mata et al., 2015; Mao, de Wit, Kippax, Prestage, & Holt, 2015; The Kirby Institute, 2015). It is noteworthy that estimates from clinical and community-based sources have been highly consistent in terms of ART coverage in recent years (de Wit, Mao, Adam, & Treloar, 2015; The Kirby Institute, 2015).

In earlier findings based on data from participants in the GCPS from 2010 to 2012, ART was more likely to be used by gay men who had been diagnosed with HIV when they were older (i.e. above 30 years of age), had a longer period of living with HIV (i.e. more than four years after HIV diagnosis), and were able to access annual STI screening and social welfare support (Mao et al, 2015). With the increasing momentum of promoting ART initiation as soon as possible after an HIV diagnosis, gay men in Australia, despite their age at HIV diagnosis, have been initiated into ART at a substantially shorter period since 2013.

To further increase ART coverage and promote early ART initiation among people living with HIV in Australia, better clinical care and sustained structural support are needed for HIV management throughout the life course of people living with HIV. First and foremost, however, it is critical to provide adequate and appropriate support for people with newly diagnosed HIV in order to facilitate important decision making on when and how to take up ART and to facilitate engagement with a range of clinical and community support services.

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8.4 The impact of HIV treatment-related stigma on treatment uptake

Elena Cama

The impact of stigma related to HIV has been well-established. Experiences of stigma and discrimination can lead to poorer mental and physical health outcomes among people living with HIV, and can also deter people from enacting behaviours that are critical to their health. In the context of HIV, this can include deterring people from collecting and taking antiretroviral medications.

The aim of this study was to explore the impact of stigma specifically relating to collecting and taking HIV treatment, such as concern for exposure through physical changes resulting from medications or through taking medication in front of others. Survey data from 697 people living with HIV in Australia were used to assess whether concerns around stigma specifically related to taking HIV treatment were associated with treatment uptake. Experiences of both treatment-related and more general HIV-related stigma were common among the sample, though participants appeared to experience more stigma related to taking HIV treatment than general HIV-related stigma. Treatment-related stigma did not impact on uptake of HIV treatment. Treatment uptake was instead associated with greater health satisfaction, older age and longer duration of HIV infection. One explanation for the association of older age and treatment uptake is the availability of highly effective treatments, which have reduced morbidity and mortality, and led to projections of an ageing population of people living with HIV.

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8.5 SMS messaging to promote adherence to antiretroviral treatment

Limin Mao

Using new technologies such as SMS reminders to improve HIV clinical care is an emerging area. SMS reminders have been increasingly used to promote ART for people living with HIV. Previous research in Australia has already demonstrated that SMS reminders sent from sexual health clinics have increased patients' testing and re-testing for key bacterial sexually transmissible infections. An SMS reminder service has not yet been routinely provided by any people living with HIV-based community organisations in Australia.

The Bobby Goldsmith Foundation (BGF) intended to assess the acceptability and feasibility of sending regular SMS reminders to their clients to improve ART adherence and more broadly, quality of life. This research project was established through the collaboration between the BGF and CSRH.

The main objective was to systematically and comprehensively assess the acceptability and feasibility of SMS messaging delivered to individual's mobile phones as a support mechanism for people living with HIV, particularly by supporting treatment adherence. A six-week SMS campaign was launched by BGF between August and September 2015. During the campaign, 98 participants were randomly divided into three groups. The first group (n=31) received six tailored, two-way message reminders per week. The second group (n=32) received two tailored, two-way message reminders per week. The last group (n=35) received one general message per week. Research evaluation, led by CSRH, commenced immediately after the campaign phase. 62 valid online survey responses and 11 subsequent individual phone interviews have been just completed. This research collaboration is an important endeavour in our pursuit to find easy-to-use, easily implemented and sustainable tools to promote ART adherence, particularly among clients with diverse and complex service needs for long term HIV living.



8.6 ART adherence, engagement with HIV clinical services

Limin Mao and John de Wit

Each year, a sizable proportion of people diagnosed with HIV in Australia would experience ART failure or be considered lost to follow-up from their primary HIV clinical providers. To date, no surveillance/monitoring system has comprehensively assessed types and reasons for ART failure (e.g. non-adherence, intended interruption due to intolerability, side effects, or viral resistance) and factors associated with patients' disengagement from HIV clinical care in Australia.

PAART is an open, prospective clinical observational cohort, established in October 2013. Patients are recruited from hospital outpatient clinics, sexual health clinics and high HIV-caseload general practices. HIV-positive patients who were on ART and had achieved viral suppression within the past three months were eligible for enrolment. Using the Computer Assisted Self-Interview (CASI) technology, each participant self-completes a questionnaire onsite at baseline, and at 12 and 24 months. Also, site clinical coordinators extract data from patient clinical records and complete an electronic case report form through CASI at baseline and every six months. This project is led by the St. Vincent Hospital in Sydney, in collaboration with CSRH and NAPWHA.

Over 500 patients have already been enrolled from 17 clinical sites nationwide into the cohort and a two-year follow-up from baseline recruitment is currently underway. Data from this observational clinical cohort will provide much needed real-life (i.e. outside of strictly planned clinical trial settings) information on key facilitators and barriers at both patient and clinical system-levels that predict continuous ART use, maintenance of high levels of ART adherence, and sustained retention in HIV clinical care in Australia.

The overall objective of this study is to critically strengthen the Australian HIV response by contributing novel knowledge, improved understanding and an innovative ART outcome monitoring mechanism (a combination of patient- and clinician-reported clinical outcomes) to promote effective engagement along the HIV treatment and care continuum. The project has the potential to complement current ART clinical monitoring systems (e.g. AHOD and ACCESS) in providing much needed understanding of patient and clinician interactions right from the moment of HIV treatment initiation to a life-long process of continued engagement with HIV clinical treatment, care, and support in Australia.



8.7 Strengthening health workforce capacity to deliver HIV treatment in the community

Christy Newman

Concerns have been noted in both Australia and comparable overseas settings about the challenges of recruiting a new generation of clinicians to HIV medicine. One of the major challenges in Australia will be to ensure that there is a general practice workforce willing and able to contribute to the strengthening of HIV prevention, diagnosis, management, and treatment.

With funding from the NHMRC, we conducted the first national study of the HIV general practice workforce, comprising in-depth interviews with key informants and clinicians, cataloguing opinions about and experiences of providing general practice-based HIV care in different caseload and geographical settings across Australia. The 47 clinicians interviewed included GPs actively prescribing HIV medications, GPs providing other non-medication forms of HIV care, GPs who had stopped maintaining their prescriber status, and general practice nurses involved in HIV care. While these sub-groups make different contributions, their combined perspectives offered a unique way to think about how the general practice workforce becomes engaged with HIV care. In addition to another nine papers published in the peer reviewed literature, a short report and community media articles (see references below), a 2015 article documented the major challenges experienced by GPs in delivering HIV care and treatment in the community. These included keeping up with knowledge, navigating low caseload and regional issues, balancing quality care with cost factors, and addressing the persistent social stigma associated with HIV. Strategic responses developed by participants to address these challenges included thinking more creatively about business and caseload planning, pursuing

opportunities to share care with specialist clinicians, and challenging prejudiced attitudes amongst patients and colleagues. Understanding and supporting the needs of the general practice workforce in both high and low HIV caseload settings will be essential in ensuring Australia has the capacity to respond to emerging priorities in HIV prevention and care.

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9 People who inject drugs and young people: hepatitis C treatment



9.1 Evaluation of two community-controlled peer services accessing hepatitis C services in OST clinics

Carla Treloar

This study was conducted as part of the ETHOS project, which was led by the Kirby Institute as part of an ongoing collaboration with CSRH and other stakeholders to increase access to hepatitis C treatment for people who inject drugs. This study examined two peer support projects that operated within the ETHOS project, that is NUAA (NSW Users and AIDS Association), the NSW drug user organisation, employed peer workers to support clients at two drug treatment services to engage with the co-located hepatitis C treatment staff. The evaluation of these peer support services involved interviews with clinic clients (n=31), clinic staff (n=8) and peer workers (n=3). Preliminary findings were also discussed in a workshop with current NUAA peer support staff as part of the analysis process.

The conduct and context of the peer support projects is important to note as these programs were designed and delivered wholly within a peer model which is uncommon in the international literature. The peer support programs were well received by staff and client participants and had a clear impact on processes, outputs and outcomes. The trust between clients and peer workers was described as an essential element of the programs' success. The peer support programs were also described as effecting a number of positive changes in the short-term including those related and those additional to the goals of the ETHOS project. This included peer workers facilitating access to other programs to promote the health and well-being of people who inject drugs (that is, dental programs), acting as mediators in discussions between client and staff, and that the presence of the peer workers changed the "feel" of the clinic space to a "friendlier" space. Finally, the peer support programs were described as facilitating the achievement of the ETHOS project goals in supporting clients into hepatitis C assessment and treatment.

Although there were two distinct models of peer work in operation, the impact of peer support appeared to be more reliant on the ways in which peer workers could demonstrate their credibility as peers and trustworthiness as operating independently of the drug treatment clinic. Peer workers may enhance the operation of hepatitis C clinics by engaging clients in education and support, allowing better prepared clients to engage better with clinical staff. Although this study was conducted in the era of interferon-based treatments, it is suggested that peer workers remain essential in the era of new treatments to provide ongoing education and support, and to assist in moving the discourse away from the "horror stories" of interferon-based treatments.

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9.2 The impact of pluralistic ignorance on the provision of health care for people who inject drugs

Loren Brener

Research has shown that people believe that their friends or colleagues may hold more conservative attitudes towards certain groups than they do. A person's thoughts about how others think may have some influence in shaping their own attitudes and behaviour (Ajzen & Fishbein, 1980; Miller & MacFarland, 1991). This psychological phenomenon is termed pluralistic ignorance (Katz & Allport, 1931), whereby group members erroneously believe that their privately held attitudes differ from the majority of their peers and thus behave in ways that endorse public opinion, even though it may be contrary to their own opinion. Consequently, pluralistic ignorance can lead to the perpetuation of particular social norms, even though these may lack private support.

Prior research shows that pluralistic ignorance impacts on behaviours such as binge drinking, drug taking, gambling, and condom use where individuals feel an internal pressure to adopt an attitude or behaviour that they believe is consistent with their peer group. However, no research has examined how pluralistic ignorance may impact on individual's treatment of clients' health conditions in meaningful context such as the provision of health care. This exploratory study aims to assess whether pluralistic ignorance plays a role in the prescription of opiate pain relief to people who inject drugs. Fifty-seven hospital based health care workers were given a survey to assess their attitudes towards their harm reduction services for people who inject drugs and their perceptions of their colleagues' attitudes. They were then given a scenario in which they were asked to indicate the extent to which they would provide pain relief to people who inject drugs.

The data indicate that participants support harm reduction more than they thought their colleagues supported harm reduction, thus demonstrating the existence of pluralistic ignorance. Interestingly, pluralistic ignorance impacted on participants' behavioural intentions to provide pain relief. The data show that participants' beliefs about their colleagues' attitudes impacted on whether they would prescribe pain medication to a person who injected drugs. Those who perceived their work colleagues to be more supportive of harm reduction were more likely to say that they would prescribe pain medication, whereas participants own support for harm reduction had no bearing on their intention to prescribe medication. These findings highlight the link between pluralistic ignorance and potential discriminatory behaviour and also provide some rationale for understanding the reported inadequate provision of pain relief for people who inject drugs despite health workers not holding negative attitudes towards this group.

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9.3 Discrimination by health care workers versus discrimination by others: countervailing forces on hepatitis C treatment intentions

Loren Brener

People with hepatitis C face stigma and discrimination largely as a result of the association of HCV with injecting drug use. Injecting drug use is a highly stigmatised behaviour attracting strong moral condemnation especially given its criminal status (Ahern, Stuber, & Galea, 2007). A large body of research has shown that stigma and discrimination has a negative effect on the health and wellbeing of those who are stigmatised and has been linked to poor mental health, poverty, low social status, physical illness, low self-esteem, and academic underachievement (Link & Phelan, 2006; Major & O'Brien, 2005). Stigma and discrimination towards people with HCV has been associated with health problems ranging from increased depressive symptoms to engagement in risky behaviour (Kinsler, Wong, Sayles, Davis, & Cunningham, 2007). There are numerous documented reports of people with HCV experiencing stigma and discrimination and these appear to most commonly occur within the health care sector.

Experiencing stigma or discrimination in a healthcare setting has been shown to adversely affect the health seeking behaviours of people living with a stigmatised condition such as accessing HCV treatment, seeking testing for HCV, and adhering to medical regimens (Butt, 2008). Based on a Social Identity Theory framework, this research attempted to explore a more nuanced approach to understanding the impact of stigma on HCV treatment uptake. Hence, the research explored whether, as Social Identity Theory would posit, HCV-related discrimination may be associated with attempts to remove the stigma of being HCV positive through treatment intentions. Additionally, it was also hypothesised that the source of the discrimination was important and whether discrimination was perceived as directed at the self or at the group would differentially impact on intention to take up HCV treatment.

This sub-analysis is drawn from a larger cross-sectional study which aimed to evaluate decisions around hepatitis C treatment uptake in NSW. The sample consisted of 416 participants who indicated they had acquired HCV through the use of non-sterile equipment to inject drugs. Findings indicate that discrimination towards the individual 'self' is a more powerful predictor of intention to take up HCV treatment than discrimination aimed at the HCV-positive group. Additionally, the source of discrimination is also important as participants indicated that experiencing discrimination from health workers resulted in lower intentions to engage in treatment in the future. These findings demonstrate that the relationship between stigma, perceived discrimination and possible health-related outcomes is complex. Intention to have HCV treatment may be dependent on the source of perceived discrimination and on whether this discrimination is directed at the self versus the group. Those who perceived discrimination aimed at the self, indicated a greater likelihood to engage with treatment in the future. This finding is consistent with Social Identity Theory which states that when boundaries are permeable, or status can change as in the case of HCV through treatment to remove the stigmatised condition, people from stigmatised groups are motivated to change their status by switching groups (Tajfel & Turner, 1986). Data from this study further suggest that this strategy is more likely to occur when people are motivated to change after feeling personally discriminated against by others around them.

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9.4 Stigma and hepatitis C treatment: a social research agenda for the Directly Acting Antiviral (DAA) era of hepatitis C treatment

Carla Treloar

At the end of 2015, an announcement from the Australian Government set an international precedent. The Australian Government had successfully negotiated an agreement with the pharmaceutical companies producing new generation Directly Acting Antiviral (DAA) hepatitis C treatments that promise effective, tolerable treatments and a means to change the course of the epidemic. The agreement guaranteed “equal treatment access”. In other words, everyone with hepatitis C would be eligible to be prescribed these medicines through the publicly subsidised Pharmaceutical Benefit Scheme. The cost of DAA treatments is very high, approximately \$100,000 per course. Other countries have developed ways to manage the cost to the public purse of DAAs, including limiting access to those with more advanced liver disease. In contrast, the Australian agreement was designed to allow everyone access, so that people living with hepatitis C do not have to become unwell before they can access treatment.

In the first three months of access to DAAs, approximately 18,000 people or 8% of those living with hepatitis C have been prescribed these new treatments. This is a tremendous achievement and must be personally momentous to those who have been awaiting these medicines for some years.

There is talk that hepatitis C can be eliminated from Australia, or made into a rare disease that the public health challenge of hepatitis dissipates. This is an aspiration that is highly attractive for policy makers as well as the community. However, not one medical technology has been effective over the course of history in achieving such outcomes. The picture becomes more complicated when considering the experiences and social positions of the key priority population (people with a history of injecting drug use).

There are a number of issues that need to be examined in this new era and which generate a range of new research questions to be asked and for which social research is well placed to deliver insights. A key factor to consider within a HCV research agenda is stigma. Stigma and discrimination associated with hepatitis C have been described as central to the experience of living with hepatitis C. We need to understand that people who inject drugs are considered in many corners of society as “failed citizens”, that the act of injecting is antithetical to what we expect of responsible citizenry. How we move from that widely held position to one in which people with a history of injecting can express entitlement and expect unproblematic access to HCV treatment needs to be explored. The broader literature and our own research highlight the mistrust that people with a history of injecting may hold to systems of government, including the health system. We have also documented that clinicians and health workers may anticipate that people who inject are disinterested in their health, that they are not engaged, enterprising health citizens, even when the person is sitting across from the clinician in a health clinic. The experience of being told that you are not worthy of treatment, that your place should be offered to someone who is more deserving profoundly shapes the decision one makes about whether and how to access health care in the future. How these experiences can inform the development of new models of care has been examined to some extent but deserves much more attention and monitoring as hepatitis C treatment evolves.

Beyond models of care, a range of other questions arise. We do not know the best way to communicate these advances in hepatitis C treatment to people who are not already connected to information networks. We do not know how best to fill the gaps in knowledge of those who are already connected to the health system. We do not know who will decline or defer treatment or the reasons behind it. We do not know what society will make of people who defer or decline treatment or those who re-acquire HCV after successful treatment. How will couples or networks of people who inject drugs shape their practice after treatment? We do not know how new understandings of hepatitis C as “easy” to cure will impact on the attitudes of broader society, or the ways in which people who inject drugs will reconfigure notions of risk and prevention. We do not know how the workforce will evolve

and emerge as treatment access broadens; what do DAA prescribers need to understand to support their work and effectively deliver DAA treatments to people with a history of injecting drugs? And finally, while HCV treatment uptake has been remarkable in this first period, will it be sustained? How do we reach those who have not been waiting, “warehoused”, for these new treatments?

While the promise of DAA treatments for HCV is exciting, there is much to understand to ensure that we can capitalise on the “Australian deal” and work effectively to those ambitious targets of elimination. Social research has a key role to play in answering these questions and contributing to our national goals.



9.5 Interventions to increase hepatitis B and hepatitis C screening, assessment and monitoring: a literature review

Max Hopwood and Carla Treloar

In Australia, the hepatitis B virus (HBV) infection mostly affects immigrants from Asian backgrounds, whereas the hepatitis C virus (HCV) infection is mostly found among people who inject, or who have injected, illicit drugs. During 2015, researchers at the CSRH were funded by the NSW BRISE Program to conduct a literature review of population level health interventions that have been effective at increasing the number of people tested for HBV and HCV, assessed for liver disease stage, and monitored for liver disease. The Cochrane Database of Systematic Reviews, Medline, Embase, CINAHL, and PsycInfo databases were searched for literature about HBV and HCV screening, vaccination, treatment, and care. Studies were included if they: targeted individuals at risk of, or living with, HBV or HCV infection; were randomised controlled trials; reported large, multiple population level interventions; described an intervention in sufficient detail; and, reported a quantitative evaluation of program effectiveness or patient outcomes relevant to the intervention. A total of 12 articles were included in the review.

Interventions to increase rates of HBV and HCV screening, assessment and monitoring have been trialled in community-based settings, primary health care settings, in other clinical health service settings, such as at opioid substitution treatment clinics, and via combined multi-strategy interventions. Theoretically informed and culturally appropriate interventions have been found to have greatest impact. The review highlighted how complex, multimodal educational interventions seem to cause behavioural changes that increase rates of testing, vaccination (for HBV), and treatment.

The review reported that community-based interventions have used a variety of theoretically informed and culturally appropriate strategies including nurses and lay health workers from culturally and linguistically diverse communities (CALD), role-plays, and the use of a photo-novel as ways of health promotion. Outcomes of community-based studies indicate that HBV-related educational interventions delivered by lay health workers can significantly increase HBV screening rates. However, physicians are also highly influential within Asian immigrant communities and should be central to efforts to increase screening.

Within primary care settings, interventions have included strategies such as electronic health record prompts to remind primary care providers to screen for HBV infection among their patients from Asian backgrounds, and also employed in this context is a strategy of prompting primary care providers to use a clinical reminder sticker attached to patient records to identify patients who were at risk of HCV infection. Outcomes of primary care-based studies indicate that electronic physician prompts were effective in improving HBV screening when delivered alongside HBV education and clinical information (e.g. promoting HBV testing). Similarly, a prompt to use a brief risk-screener via a paper-based clinical reminder was effective in increasing HCV testing in primary care settings.

Other clinical health service-based interventions have included the use of FibroScan (Transient Elastography) in street-based outreach clinics, nurse-led assessment clinics, education, hepatitis A and HBV vaccinations, review of risk behaviours, referrals, support, risk reduction counselling, and motivational interviewing-enhanced case management assistance. US-based clinical settings have successfully addressed the large number of HCV antibody positive patients who did not receive viral testing within six months of a positive antibody test result by: (i) improvements in the patient-

centeredness of the screening process in ambulatory patients; (ii) local implementation of the Department of Veterans' Affairs national HCV reflex testing policy supported by an HCV population management application; and (iii) evaluation of the efficiency and effectiveness of local implementation of reflex tests.

Outcomes of other clinical health service-based interventions indicate that these interventions have successfully (i) engaged people who inject drugs with health services; (ii) facilitated hepatitis care coordination in opioid substitution clinics; (iii) integrated infectious disease programming in mental health settings and increased acceptance of such services among clients; (iv) reduced costs of screening and waiting times (e.g. FibroScan vs liver biopsy); and, (v) successfully assessed and triaged people who inject drugs and streamlined their pathway through the healthcare system.

Studies using complex, combined interventions across multiple settings have employed theoretically informed and culturally appropriate strategies such as the building of a coalition of alliances among health and support services, education campaigns delivered in a range of formats, citywide mass media campaigns to raise public awareness, outreach clinics for blood-testing, viral hepatitis-related information presented through entertainment, and advocacy efforts. In addition, an internet-based HCV screening and referral intervention has been trialled to engage individuals from hard-to-reach populations with HCV testing and health care. One intervention combined a mass media campaign using television commercials, advertising, and online banners to raise awareness of HCV. The campaign directed people toward a validated internet-based risk-assessment questionnaire and an internet-mediated blood-testing procedure to identify individuals infected with HCV in the general population. Outcomes of combined interventions across multiple settings are difficult to evaluate; however, there are indications that screening for viral hepatitis infections can be increased using combined strategies in a variety of contexts.

Finally, while most intervention trials have not published data regarding their costs, interventions to prevent loss to follow-up after screening have reported attractive cost-effectiveness ratios. A range of studies considered the costs associated with hypothetical interventions, and found that the following are likely to be cost-effective interventions: (from Canada) a screening of all recent arrivals for chronic HBV and treating recent arrivals; (from the UK) an opt-out, general practitioner HCV case-finding intervention; (from the US) interventions targeting multiple points along the HCV cascade-of-care rather than a single point are reported to provide better outcomes including more attractive cost-effective ratios; and (from the US) a one-off HCV testing of all people in the birth cohort 1945-1965 (among whom HCV prevalence is highest).

Reference

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9.6 Hepatitis B and hepatitis C treatment and care in primary care settings: a literature review

Max Hopwood and Carla Treloar

A review of the research literature on barriers and facilitators to HBV and HCV treatment and care in primary care settings was conducted by researchers from CSRH during 2015, funded by the NSW BRISE Program. The main focus of the review was on the enablers, or facilitators, to management and care of viral hepatitis at the systems level. References to primary health care settings throughout the review include: Aboriginal Community Controlled Health Services, correctional health services, alcohol and other drug settings, sexual health, and general practice settings. A search was conducted of the international literature published from 2005 to 2015, appearing in the Medline and Google Scholar databases. The literature searches returned a total of 14 articles regarding HBV and 31 articles regarding HCV; however, few articles included information about systems-level barriers and facilitators.

Hepatitis B

Our review of the literature uncovered some practical recommendations for improving the management of HBV within primary health care settings. These included community outreach programs, community-based education programs, and professional education programs.

a) Community outreach programs

To improve engagement with HBV treatment and care generally among ethnic communities, it is important to address chronic HBV care as a community-wide issue rather than a problem of some individuals. Targeted community outreach programs in NSW should draw upon the influence of ethnic community leaders, including religious organisations and most importantly local primary health care providers, to inform community members about HBV infection and to encourage uptake of testing, vaccination, treatment, and care within primary care. Around the world, systems-level interventions are often complex and expensive to implement. They require time for the barriers to care to be identified and dismantled, and they require careful evaluation of strategies in order to assess their effects.

b) Community-based education programs

Ongoing, culturally appropriate education campaigns that are aligned with community values and endorsed by community leaders are needed to inform affected ethnic immigrant populations about HBV infection, and the means to address it via primary care, within their local communities. Considering the ways in which HBV-related stigma can impede engagement with health care services highlights specific cultural understandings of virus transmission (i.e. via condomless sex). To help overcome stigma associated with HBV infection in affected NSW communities, it may help to 'rebadge' HBV in education campaigns as a blood-borne virus in order to modify its image among some communities of being solely an STI. Patients often have competing health priorities that become a barrier to viral hepatitis treatment uptake. To help understand the systems-level barriers to HBV treatment and care among immigrants, the literature suggests that it is important to identify how health services of the host country are perceived by immigrant community members. If health services are held in low regard, or understood to be 'unfriendly' and difficult to navigate for specific ethnic population groups, services will be avoided.

c) Professional education programs

It should not be assumed that primary care providers with high caseloads of HBV patients have high knowledge and awareness of HBV treatment and care. Research has identified major gaps in primary care providers' HBV knowledge despite having high HBV case-loads and a common patient-provider ethnicity. As such, Chinese- and Vietnamese-Australian primary care providers in NSW, particularly those in areas where there is a high Asian-Australian immigrant population, may require ongoing medical education programs about the occurrence of HBV infection among their patients, and how to care for and treat these patients.

Primary care providers experience many competing pressures to meet educational requirements in NSW, which can distract their attention from HBV-related health care, particularly when their patients are asymptomatic. This limits the effectiveness of continuing medical education (CME) programs. Combined cycles of web-based teaching and educational emails (interactive, multi-channelled education), where primary care providers are invited to respond to lessons and receive immediate feedback from tutors, may help to increase the effectiveness of HBV-oriented CME programs. Education and training of medical students via the development of a preclinical service-learning curriculum on HBV, using outreach clinics staffed by students, with clinical mentors, to test, monitor and encourage treatment may be an effective strategy to improve knowledge among future primary care providers and to raise awareness of HBV among affected communities.

Hepatitis C

Given the continuing low rates of HCV care and treatment uptake among people who inject drugs and the difficulties associated with engaging people who inject drugs in contexts such as tertiary treatment centres, and given the identified multi-level barriers to treatment and care, this literature review pointed to a range of key innovations that, if implemented, can lead to improved outcomes. These are

presented below.

- Acknowledge the underlying issues of stigma, mistrust and concerns about confidentiality that will remain regardless of the medical regimen or setting of delivery.
- Include social and structural interventions in efforts to promote HCV treatment including strategies for: stigma reduction; drug dependence; social support; mental health care; infectious disease; improvements in housing; enhanced geographic access to treatment; offsetting transport costs; overcoming the consequences of the criminalisation of illicit drug use; and sensitivity to cultural and ethnic diversity and gender differences.
- Promote HCV primary care services as community-based, mobile and/or situated in areas where people who inject drugs live, congregate and access health care and other services.
- HCV treatment and care will be most effective when taken to the affected populations.
- Sites could include alcohol and other drug settings, needle and syringe programs (NSPs), primary care, homelessness services, Aboriginal Community Controlled Health Services, and correctional health services. Consider NSPs as a site of HCV treatment (with new therapies) given high prevalence of HCV among clients and high levels of client trust in NSPs.
- Consider a telehealth model for regionally/rural based GPs to support uptake of new HCV treatments. This could also include elements to support nursing staff to roll-out nurse-led models in primary care and community health care settings.
- Incorporate input from people who inject drugs in the design and operation of health care services, particularly in relation to their location, opening hours, service provision, and appointment schedules.
- There needs to be a range of user-friendly psycho-social support services available which adhere to strict confidentiality requirements and services should utilise peer support and nurse-led models where possible.
- Advocate for the education and training of primary care providers, addiction specialists, psychologists, psychiatrists and nurses, at both undergraduate and post-graduate levels that addresses morally based misconceptions about people who inject drugs within the health care sector and include specific HCV training and education.
- Monitor uptake of interferon-free HCV treatment in relation to equitable access (given the variability in primary care providers' knowledge and judgement about implementation of new HCV treatment, especially for clients who use drugs).
- Design and implement a coordinated information dissemination program aimed at people living with HCV and primary care providers that emphasises (i) availability (or coming availability) of new treatments; (ii) what people living with HCV can do to prepare for new treatments (HCV assessment); (iii) the rights of people with HCV in health care settings; and, concomitantly (iv) the responsibilities of health workers under anti-discrimination legislation.
- Consider workforce development for all primary care staff, including non-clinical staff that covers issues relating to stigma and structural competency.

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9.7 Surveillance and treatment of prisoners with hepatitis C (SToP-C): enhancing treatment of hepatitis C in opioid substitution therapy (OST) settings (ETHOS-2)

Carla Treloar

The advent of new Directly Acting Antiviral (DAAs) treatments for hepatitis C brings much promise in terms of radically shifting the course of the epidemic in Australia. Two NHMRC partnership projects, led by the Kirby Institute as part of an ongoing collaboration with CSRH, seek to understand how DAAs will be implemented in the prison setting and in community services. The goal of the SToP-C project is to implement and evaluate treatment as prevention of hepatitis C in prisons. Treatment as prevention in prison differs markedly from such efforts in the community. This is partly because the prison setting offers somewhat of a “closed” setting in which efforts to reduce prevalence can have direct impact on incidence. However, technologies to reduce hepatitis C risks, such as Needle and Syringe Programs, are not as readily available in prison as they are in the community. CSRH will lead a qualitative study to examine the perceptions and experiences of a range of stakeholders including inmates, their families, corrections officers, justice health staff, policy makers, and advocates.

The NHMRC Partnership project, ETHOS-2, follows from the successful ETHOS-1 project which evaluated the implementation of co-located hepatitis C and drug treatment services on uptake of hepatitis C treatment (in the era of interferon-based treatments). ETHOS-2 will follow how a range of services (including drug treatment, high case load primary care, and NSPs) adapt to the new era of DAAs. CSRH will conduct a qualitative study to examine the experience of clinicians and clients in selected clinics. We will interview clinicians operating in teams with a range of experience with prescribing DAAs to people with a history of injecting. Clinics to be selected will include those who are early adopters of prescribing DAAs, those which are establishing their protocols and starting prescribing, and those that are yet to incorporate prescription of DAAs into their routine care. We will also interview clients with a range of experience of HCV DAA treatment from those who have decided to delay or defer accessing HCV assessment, to those who have experienced treatment. Given that DAAs are supposed to provide a much more simplified and effective treatment experience, the focus of this project is to examine any residual barriers from the clinician or client perspective.



9.8 My health, our family: documenting stories of family life in the context of HIV, hepatitis B or hepatitis C

Christy Newman, Asha Persson and Joanne Bryant

As the management of blood borne viruses undergoes rapid changes, the families of those affected by HIV, hepatitis B and hepatitis C are also living through and responding to those changes. The forms and meanings of ‘family’ also continue to undergo considerable social transformation.

Researchers at the Centre for Social Research in Health, in collaboration with the Social Policy Research Centre (SPRC) and Australian Research Centre in Sex, Health and Society (ARCSHS), have received funding from the Australian Research Council to conduct a three-year Discovery Project (DP160100134) to document – for the first time – firsthand accounts of what serodiscordance (mixed infection status) means in the context of everyday family life.

With a focus on New South Wales, we will be interviewing individuals (n=30) and family members (n=60) to understand what families mean in the context of stigmatised infectious disease; what stigmatised infectious diseases mean in the context of everyday family life; and how to build on the contributions of families to enhance the prevention, management and treatment of these infections.

Drawing on further interviews with stakeholders (n=20) in the health and social care sectors, alongside a roundtable of health sociology, family/carer studies, and critical health studies researchers, we will also build a critical theory of serodiscordance in order to extend beyond a biomedical focus on individual health and transmission risk in couples to encompass a broader and more relational understanding of wellbeing.

The research questions we will be exploring through this research include:

- a) How do families negotiate any disruptions to everyday life associated with serodiscordance? For example, what strategies are developed (or are already in place) to maintain family obligations, rituals and relationships that overcome (or negate the experience of) difference and disruption?
- b) Do issues of shame, stigma and secrecy play a role in families' management of serodiscordance? For example, how are family narratives constructed and communicated to broader social and community networks, and (how) does serodiscordance figure in these? What role does the criminalised or contentious legal status of particular practices associated with BBVs (e.g. injecting drug use, and sexual transmission of HIV) play in the management of serodiscordance within families?
- c) How do families negotiate the range of unfolding responsibilities associated with care and treatment, recognising that there are considerable differences between the treatment options and experiences across these diseases? For example, are different roles performed (or resisted) in relation to medication, clinic visits, and maintaining relationships with health and social care providers? Are care roles and responsibilities in the home influenced by gendered, generational, cultural or legal/criminal scripts?

In addition to academic publications, we will in the final year of the study produce a research report and summary, and host a public seminar on what the findings mean for communities. Policy and practice recommendations will focus on improving the experience of diagnosis, treatment and care for individuals and families, and challenge the silence and stigma that continue to be associated with these infections. All study activities will be conducted in consultation with an advisory committee of peak NSW organisations working to promote the prevention and treatment of infectious diseases and/or family wellbeing.

Appendix: Methodological note

Gay Community Periodic Surveys

Limin Mao, John de Wit and Martin Holt

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 2014, Tasmania was added to the network of GCPS locations and online recruitment was added to the sampling methods (Holt et al., 2016).

In this year's report, wherever possible, we report data from a ten-year period (2006–2015). We have tested for linear trends over the full ten-year period and the most recent three-year period (2013–2015), 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. We also introduced weighting of the data by recruitment source to allow for sampling variations (De La Mata et al., 2015; 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 calculate a national trend for the key indicators presented in the main report, so that state and territory data can be compared to a 'national average'. All data from the GCPS presented, unless indicated otherwise, have been adjusted for age and recruitment source.

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 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 A1 shows the total number of men who participated each year between 2006 and 2015, 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. Since 2014, we have introduced online recruitment, as the internet has long been established as a popular way for men to meet each other. Using unadjusted data, Table A2 shows the proportions of men recruited from different venues and events during the 2006-2015 reporting period. The majority of men (over half) are recruited from gay community festivals and close to one-third from social venues (e.g. gay bars, clubs, gyms) or online (21% in 2015). 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 2015, the majority of men recruited into the Gay Community Periodic Surveys were most likely to identify as gay (approximately 90%) and have an Anglo-Australian background (over 65%); see the unadjusted data presented in Table A3. Over the last 10 years, most of the demographic characteristics have remained stable, except increases in the mean age of the sample (35.4 years in 2015) and the proportion of men with Anglo-Australian backgrounds. The introduction of online recruitment in the past two years appears to have affected most of the demographic characteristics except Anglo-Australian ethnicity, attracting (for example) much younger men to the surveys.

Table A1: Recruitment summary by state or territory: GCPS, 2006-2015

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Total n (%)
Adelaide		8.3		13.7	11.8	9.1	10.1		12.5		4,963 (6.8)
Canberra	4.0			4.4		3.5		2.8		3.8	1,338 (1.8)
Melbourne	28.1	32.3	32.6	30.2	27.8	24.8	26.2	38.0	25.2	37.6	21,843 (30.1)
Perth	13.1		12.0		10.5		10.4		9.2		4,093 (5.6)
Queensland ¹	18.1	22.4	19.9	18.5	18.9	21.5	17.0	17.9	20.4	23.0	14,363 (19.8)
Sydney ²	36.7	37.0	35.6	33.2	31.0	41.1	36.3	41.3	29.9	35.6	25,874 (35.6)
Tasmania									2.8		210 (0.3)
Total n	7,067	6,329	6,251	7,067	8,771	7,774	7,841	6,161	7,426	7,997	72,684 (100)

¹ Includes men recruited from Brisbane, Cairns and the Gold Coast ² Only includes the February round of recruitment

Table A2: Recruitment summary by type of venue or event: GCPS, 2006-2015

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Total n (%)
Gay community events/festivals	57.3	55.8	57.7	51.8	56.1	50.0	49.3	52.2	43.0	35.4	36,761 (50.6)
Gay social venues ¹	25.4	27.0	23.3	29.9	27.9	34.0	32.4	28.5	41.0	49.6	23,466 (32.3)
Sex-on-premises venues	12.4	10.6	13.0	12.5	11.2	10.3	13.1	13.1	11.4	10.2	8,526 (11.7)
Clinics and general practices	4.9	6.6	5.9	5.9	4.8	5.7	5.2	6.2	4.5	4.8	3,931 (5.4)
Total n	7,067	6,329	6,251	7,067	8,771	7,774	7,841	6,161	7,426	7,426	72,684 (100)

¹ Includes bars, clubs, gyms, small events and from 2014 onwards, online recruitment (14.6% in 2014; 21.2% in 2015)

Table A3: Recruitment summary by participant characteristics: GCPS, 2006-2015

	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	Overall trend	Trend in last 3 years
Gay or homosexual	89.3	88.8	88.3	86.6	86.8	87.5	87.0	87.8	89.1	89.9	ns	↑
Anglo- Australian	65.4	68.2	67.5	66.6	69.4	67.7	68.5	66.8	69.2	67.5	↑	ns
<25 years old	18.7	17.9	18.5	18.8	20.9	17.2	17.9	15.2	20.2	20.0	ns	↑
30-39 years old	34.3	32.1	31.4	32.1	26.7	28.2	27.7	29.0	26.5	27.6	ns	↓
>50 years old	10.4	11.7	12.2	12.3	13.4	14.0	15.1	15.7	15.5	14.9	ns	↑
Mean age (SD)	35.0 (10.9)	35.6 (11.2)	35.8 (11.4)	35.5 (11.5)	35.5 (12.0)	36.2 (11.9)	36.5 (12.4)	36.9 (12.2)	35.8 (12.5)	35.4 (12.5)	↑	↓

PrEPARE

Martin Holt, Toby Lea, Dean Murphy and John de Wit

The PrEPARE Project has been monitoring gay and bisexual men's attitudes to HIV pre-exposure prophylaxis (PrEP) and treatment as prevention (TasP) since 2011. The study uses repeated, national online surveys to collect data, primarily advertised through the social networking website Facebook. In 2011, 1,283 men participated, followed by 1,316 in 2013 and 1,251 in 2015 (Lea et al., 2015). The next survey round is scheduled for 2017.

It's Your (Love) Life

Philippe Adam, John de Wit, Mandy Schippers and Dean Murphy

Young people 15-29 years old are at disproportionate risk for sexually transmissible infections (STIs) in Australia, and a priority population identified in the 3rd National STI Strategy. To date, little comprehensive evidence is available regarding the sexual health knowledge, attitudes and practices of young people aged 15-29 years in Australia, nor the reach and impact of sexual health promotion activities. This evidence is particularly lacking for young people who are not in secondary education. A novel online periodic survey of sexual health among young people aged 15-29 years and living in NSW has been developed and implemented by CSRH as part of the BRISE program.

The project was built on previous online surveys on sexual health among young people conducted by the team at CSRH (mainly Getting Down to it and Project1626). Called 'It's Your Love Life (IYLL)', the new annual periodic survey aimed to provide important guidance for priority actions regarding the STI response for young people, in particular with respect to the strengthening of STI prevention and testing for young people. The survey also provides a comprehensive monitoring and evaluation mechanism to empirically assess current and future efforts to promote sexual health among young people in NSW.

A first round of data collection was completed in the first quarter of 2016. The self-complete survey was hosted through an appealing online platform and participants were recruited from targeted advertisements on Facebook, Instagram, and Google. The final sample who reported on their sexual orientation for the periodic survey consists of 3,190 participants aged 15-29 years and living in NSW. Of the 3,190 participants, 2,120 self-identified as heterosexuals and 1,070 as non-heterosexuals. Data presented in the report are based on the answers provided by the 2,120 participants who identified as heterosexuals. Among them, there were more female (n=1,371, 64.7%) than male participants (n=749, 35.3%) and respondents were on average 20.78 years old (SD=4.82). Of the 2,120 heterosexually identified participants, 1,514 (71.4%) ever had oral, vaginal or anal sex with someone, including 1,398 participants (92.3%) who had sex with someone in the past 12 months. Data collected among non-heterosexually identified young people will be reported separately.

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